SRR & CVR GOVERNMENT DEGREE COLLEGE

(AUTONOMOUS) ESTD:1937

VIJAYAWADA, NTR DIST., A.P

Institution is ranked by NIRF 101-150 band at NIRF 2020

WEBSITE: www.srrcvr.ac.in E-Mail: srrandcvr@gmail.com

NAAC 4th CYCLE

TEACHING PLANS

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021- 2022

Name of the Lecturer D. Jyothi Dr. Kapari. Anna

Department of Botany Microbiology.

Oct 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kopuri Aruna
Course / Group :	III BSc MBC. Sem-V
Paper : 6	Food and Industrial Microbiology
Name of the Topic	Intrinsic and Extrinsic factors that influence the growth of Mors in food. spoilage of fruits & vegetables, Milk meat canned foods, bread & Salmonellosis, Botulism
Hours required	12
Learning Objectives	To study spoilage of foods and food intoxication and food born infection.
Previous Knowledge to be reminded	Food Spoilage Causes.
Topic Synopsis	Causes of spoilage or Intrinsic and Extrinsic factors that influence the growth of mos in foods:— Action of its own enzymes:— Enzyme activity is intensified after harvest due to lack of control system. Uncontrolled ripening of vegetables and fruits results in their spoilage. Chemical reactions in food:- unsaturated fatty acids undergo oxidation due to atmospheric air. Free fatty acids causing odour as well as undesirable changes in the texture of food. Environmental factors:— Temperature. Excess heat denature proteins, destroy vitamins, enhance the rate of chemical as well as enzyme reactions
Examples / Illustrations	Packing, Harvesting, Marketing etc (Causes of Spoilage or Source of Spoilage of Foods)
Additional Inputs	Preventive measures for spoilages
Teaching Aids used	Black Board, PPT and video sharing
References cited	Food Microbiology by Frazier.
Student Activity Planned after the teaching	Collection of spoiled foods and identification of spilage mors.
Activity Planned outside the Class room, if any	
Any other Activity	

Moisture and humidity:- moisture causing mottling, Crystallization Stickness.

Air:- Harmful effect on vit. A and C. Food colours, Flavours and other food Constituents. Facilitates the oxidation reactions

Light: Light destory riboflavin, vit-A and C.

Time:- After harvest or slaughter and there after as time progresses.

Microbial spoilage of vegetables and fruits:-

Bacterial soft rot - Erwinia Carotovora
Gray mold rot - Botrytis Cinerea
Rhizopus Soft rot - R. Stolonifer
Anthracnose - Colletotrichum lindemuthianum
Alternaria rot - A. tenuis
Blue mold rot - P. digitatum
Downy mildew - phytophthora Spp.
watery Soft rot - S. Sclerotiorum.

Microbial spoilage of Meat:- Due to pseudomonas, Acinetobacter, Alcaligem, Micrococcus, Lactobacillus and Microbacterium

Microbial spoilage of Canned Foods:-

Clostridium sporgenes. B. coagulans. Flat sour spoilage; TA spoilage Sulfite Stinker spoilage.

Botulism:- The disease botulism is caused by the ingestion of food containing the neurotoxin produced by clostridium botulinum.

organism:- Gram tve, spore forig, gen forig, soil bacterium.

ABEF have been identified as human beings.

Disease: Early symptoms are nausea, Vomiting, diarrhoea, fatigue dizziness and headache.

Foods associated without breaks:-

low acid foods with pH above 4.6.
foods inadequately heat treated
high water activity above 0.03.

Prevention of outbreaks:- use of approved heat process for canned foods. rejection of all gassy or spoiled canned foods.

Salmonellosis:- Salmonella is gram-ve and non-spore forig

Foods involved outbreaks:-

meat. poultry and their products, fish and fish products.
raw and under cooked eggs and products.

Endotoxin giving rise to the disease symptoms

Incubation period is 12-36 hours.

The principal symptoms are nausea, Vomiting, abdomen pain and diarrhea. other evidences are watery, greenish foul-smelling stools prostration, muscular weakness discomfort and diarrhoea.

Foods involved in out-breaks:-

Meat, poultry and their products.

Prevention:-

Avoidance of contaminated food.

D. Jyothi

Oct 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kapoor. Arora
Course / Group :	II BSc MBC MIBF Sem - III
Paper : 3.	Microbial Genetics and Molecular biology
Name of the Topic	DNA and RNA as Genetic material and structure of DNA, plasmids and transposable elements. DNA replication
Hours required	18
Learning Objectives	To Study DNA and RNA as genetic material, plasmids structure of DNA, Transposable elements and Replication
Previous Knowledge to be reminded	Structure and functions of DNA and RNA.
Topic Synopsis	Identification of the genetic material- the process of identification of genetic material began in 1928 with the experiments of Griffith and concluded in 1952 with the studies of Hershey and Chase. Another ingenious experiment by Frankel-Conrat and Singer in 1957 established that in some viruses RNA functions as the genetic material. But nucleic acids were discovered much earlier in 1871 by Meischer who called them nuclein. Two types of nucleic acids viz DNA and RNA. In Eukaryotes, chromosomes contain genes, and they are make up of chromatin i.e DNA + proteins.
Examples / Illustrations	
Additional Inputs	Human Genome project
Teaching Aids used	Black Board Videos and PPT
References cited	Molecular Biology by David Freifelder Microbial physiology and Genetics by B D Singh R.P. Singh.
Student Activity Planned after the teaching	Assignment - 10
Activity Planned outside the Class room, if any	Collect the videos on replication of bacteria
Any other Activity	

D.

Griffith Experiment:- (1928) When live cells of the avirulent strain IIR were injected into mice, they din not Suffer from pneumonia and all mice Survived. on other hand, when mice were injected with live IIIS, all the mice died due to pneumonia.
Further, mice injected with heat-killed cells of the virulent strain IIIS did not develop pneumonia. However, when mice were injected with a mixture of heat-killed IIIS cells and live IIR cells. Some of them died due to pneumonia. The Component of IIIS cells, which induced the Conversion of IIR cells into IIIS cells was named as the transformation.
Avery, Macleod and McCarty proved that DNA as genetic material or transforming principle.
Experiments of Hershey and chase:- They labelled T2 DNA and proteins in two separate experiments.
T2 Particles were labelled with ^{32}P, most of the label was recovered in the progeny phage particles, when they were labelled with ^{35}S, only a small fraction of the label was found in progeny phage particles.
RNA as Genetic material:- Frankel-Conrat and Singer on tobacco mosaic virus. RNA and protein of TMV can be Chemically Separated. Which reassociate to form active particles of the same type as the original strain (A, B) when another strain, the hybrid particles produced the symptoms identical with that strain, which Contributed the RNA. the TMV particles isolated from the infected plants were also identical with the same strain.
DNA Structure:- phosphoric acid + Pentose Sugar + organic bases. There two types pyrimidines and purines
plasmids:- Bacterial cells may contain, in addition to the main chromosome, some circular mini chromosomes called plasmids.
Transposable Elements:- are DNA sequences that move from one location in a chromosome to another with in the same chromosome. Two types of transposable elements in bacteria
1. Cut and Paste → a) IS elements
   → b) Composite transposons.
2. Replicative transposons Eg: Tn3.
Semi-Conservative mode of Replication in prokaryotes:-
It is devided into 3 steps 1. Initiation 2. Elongation 3. Termination
Initiation:- Recognition of origion, DNA melting, stabilization of the single strands, assembly of primosome at the two forks so produced at finally, start of synthesis of the two daughter strands
primer Elongation:- once primer attached, DNA synthesis is taken up by ribosome, In E.coli, DNA replication is provided by DNA polymerase III Component of replisome
Termination:- Termination is signalled by specific sequence called ter elements, which serve as a binding site for proteins Tus. It binds to ter element and stop fork from unwinding this stops the movement of the replication fork

Nov 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kopuri. Aruna
Course / Group :	III BSc MBC SEM - V
Paper : 6	Food and Industrial Microbiology
Name of the Topic	Food Preservation, Fermented Foods Yogurt, Cheese, SCP bread and probiotics.
Hours required	12
Learning Objectives	To Study food Preservation, fermented foods, Yogurt, Cheese SCP and bread. Probiotics.
Previous Knowledge to be reminded	Sources of food soilage
Topic Synopsis	Food preservation:- The chief methods of food preservation are Absence or Keeping out the mors, Removal of mors, Maintenance of anaerobic Condition in a Sealed and evacuated Containers, Use of high temperature use of low temp, Drying, use of Chemical preservatives Irradiation, Mechanical destruction of mors and Combination of two or more of the above methods. Low temperature:- Activities of food-borne mors can be slowed down / Stopped due to all enzyme reactions are slow down. Chilling temp:- (10-15°C) Refrigerator temp:- (0°-7°C)
Examples / Illustrations	Neutraceuticals.
Additional Inputs	Importance of fermented Foods.
Teaching Aids used	Black Board, videos and ppt's.
References cited	Food Microbiology by Frazier
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	project- on Collection of Cheese types
Any other Activity	

Aruna

with the DNA.

Freezing:- Most successful technique for long-term preservation of foods. Quiz freezing -20°C for within 30 mins
slow freezing:- -23-3°C for 3 to 72 hr
High temperature:-
Pasteurization, Sterilization, Drying, Sundrying, Drying by mechanical driers, Freezdrying
Radiation:- Radappertization, Radicidation, Radurization
Chemical preservation:-
Benzoic acid, Sorbic acid, Sulphur dioxide, Nitrites or Nitrates
Acetic acid, Antibiotics:- Nisin, Natamycin, Tetracyclines Subtilin and Tylosin.
fermented foods:-
Cheese:- Cheese one of the oldest foods of mankind.

Milk → Pre-heating → Filtration/Clarification → Standardization → Pasteurization → Addtig Stater/Ripening → Addtig colour → Addtig rennet → Coagulation/setting → Cutting → Cooking → Draining/whey → Cheddaring → Milling → Salting → Hooping → Dressing → pressing → Drying → paraffining → Cutting/Matting

* Starter Culture:- S. Cremoris, S. Lactis
* Rennet is obtained from:- Mucn meihei.

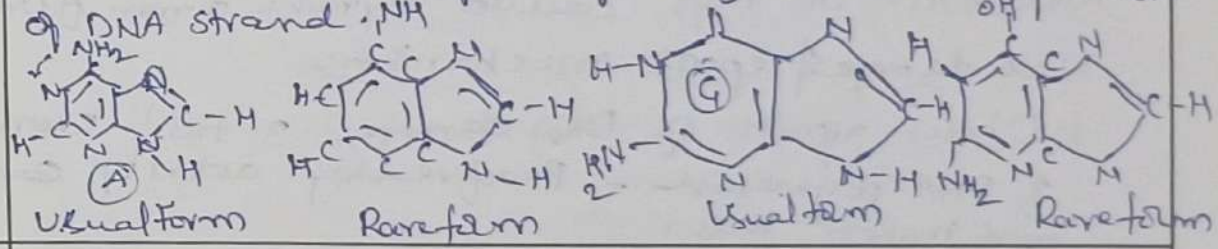
Yogurt- preparation:-
Starter cultures:- S. thermophilis and S. bacteris at 50°C to be added.
Bread Making:- wheat flour-mixing with water dough and starter culture is S. Cerevisia.

SCP:- Microorganisms may serve as food for human beings or feed for animals or source of enzymes to be used in the processing of foods. The dried cells of microbes (Algae, bacteria, actinomycetes and fungi) used as food or feed are collectively called as "microbial proteins"
Microbial protein was replaced by a new term "Single cell protein (scp) during 1967
(SCP) Algae:- Chlorella, Scenedesmus, Spirulina grown in ponds or tanks
Filamentous fungi:- Agaricus
Yeasts:- Saccharomyces, Candida and Torulopsis
Bacteria:- Methylophilus methylotrophus using methanol
Substrates used in production:-
Molasses, spent sulfite liquor, acid hydrolysate of wood, Agricultural wastes, methanol and ethanol, paraffin gas oil, combustion gas. CO_2 and sunlight

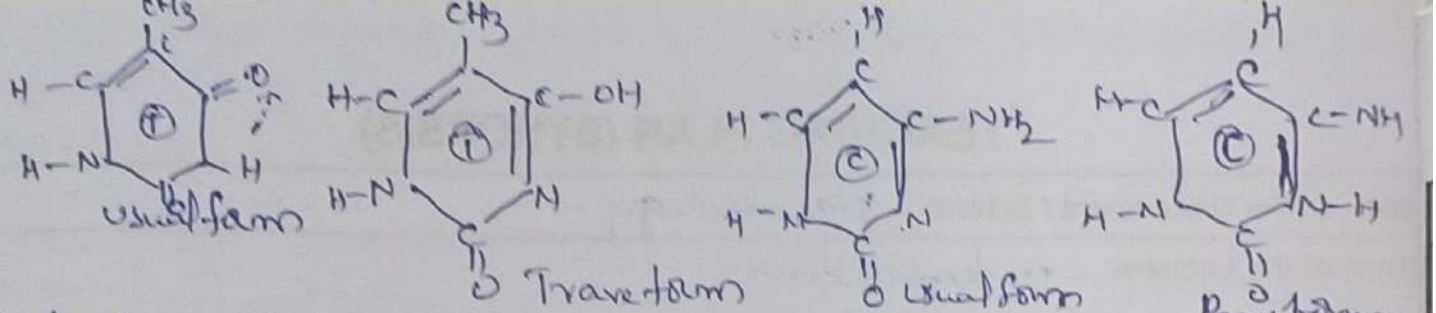
D. Jyothi

Nov 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr Kapuri. Arura
Course / Group :	II BSc MBC MBF Sem - III
Paper : 3	Microbial Genetics and Molecular biology
Name of the Topic	Mutations, DNA damage repair mechanism
Hours required	18
Learning Objectives	To Study mutations in bacteria and damage DNA repair mechanism
Previous Knowledge to be reminded	Structure of DNA and base pairing.
Topic Synopsis	Mutations:- Gene mutations at molecular level involve modification one base by another or deletion or addition one or more bases. Mutations may be spontaneous or induced. Spontaneous mutations are due to tatomerism. As result of tautomerisem, unusual base pairing will takes place like G-T, T-G, A-C and C-A. this unusual base pairing results in misreplication of DNA strand. 
Examples / Illustrations	Nitrogenous bases and base pairing.
Additional Inputs	Eukaryotic repair mechanism
Teaching Aids used	Black Board. videos. PPT
References cited	Molecular Biology by David Prifielders Microbial physiology al Genetics by B.D Singh & R.P Singh.
Student Activity Planned after the teaching	Practicedy the structures of unusual bases and unusual base pairing
Activity Planned outside the Class room, if any	watching the video, Assignment-
Any other Activity	

Arura



* Another Source of Spontaneous mutations is alteration of 5 methyl cytosine and it is pairs with guanine. Cytosine also loss aminogroup and converted to uracil.

Induced Mutations:-

Base analogues:- Eg: 5Br uracil is structurally very much similar to thymine.

Chemical Mutagens:-

Nitrous oxide:- It reacts with bases containing amino groups and causes deamination.

Hydroxylamine:- It reacts with cytosine and guanine residue and brings transition and misrepairing.

Alkylating agents:- Alkylation at N-7 position of Guanine and N-3 position of Adenine. Alkylation increases ionization and induces pairing errors. Leading to transition AT → GC and GC → AT

Intercalating agents:- Causes distortions Eg: Acridine orange

Radiation:- UV rays causes thymine dimer formation.

DNA damage/repair mechanism:-

(1) Direct repair of DNA damage:- 3' to 5' exonuclease activity of DNA polymerase - Proofreading activity can remove the mismatch bases.

(2) Repair of UV-induced pyrimidine Dimers:- UV light-induced thymine dimers can be revered directly by enzyme called photolyase

(3) Repair by alkylation damage:- Alkylation damage is repaired by an enzyme "methyl guanine methyltransferase" removes methyl groups. There by changes base to its original form.

(4) Base excision repair mechanism:- Glycosylase enzyme recognizes the damage base and remove it from the DNA by cleaving the bond between the base and sugar.

(5) Excision repair mechanism:- dark repair or excision repair, thymine dimers are repaired by UVR A, B, C, D enzymes

(6) Methyl-directed mismatch repair:- ~~mutA~~, MutS, MutH and MutL

(7) SOS repair mechanisms:-

RecA and lex.A gene products involved in repair.

D. Jyothi

Dec 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr-Kopuri. Arura
Course / Group :	III BSc MBC SEM - V
Paper : 6.	Food and Endustrial Microbiology
Name of the Topic	Industrially important mors, Screeng of Strain Improvent- types of fermentations
Hours required	16
Learning Objectives	To Study industrially important mors, screeng, Strain improvement, types of fermentation proces
Previous Knowledge to be reminded	Industrially importent products produced by mors
Topic Synopsis	Industrially important mors:— 1) Saccharomyces cerevesia is used produced Ethanol, Beer and yeast biomass 2) Citric acid production by A. niger 3) Clostridium glutamicum - Glutamic acid production 4) B. coagulans, B. subtilis - Amylase production 5) Streptomyces olivaceus - Vitamin - B12 6) P. Chrysogenm, P. notatum - Penicillin 7) Lactobacillus - Lactis - Cheese 8) Streptococcus thermophilus - yogurt 9) SCP - Fungi - Agaricus / Amanita Yeast - Candida Torulopsis
Examples / Illustrations	10) Algae - Chlorella, Spirulina, Bacteria - Methylotrophus methylophilus.
Additional Inputs	Applications of Endesstrially important mors
Teaching Aids used	Black Board. Video showing
References cited	Industrial Microbiology by AH Patel
Student Activity Planned after the teaching	Assignment—
Activity Planned outside the Class room, if any	project-work
Any other Activity	

Arura

Screening :- Detection and isolation of industrially important mos from natural Substrates. It includes Pry Screening and Secondary Screening.

I) primary screening :- a) Streaked plate technique for isolation of antibiotic producing mors to be detected
b) Replica plating method / Autoradiography for isolation of auxanotrophs for vitamins, aa, Growth factors producing mors
c) pH indicator dyes (Phenol red and Bromothymol blue) (organic acids)
d) Enrichment culture technique

Enzyme producing organisms can be detected and isolated.

Eg: Amylase (Substrate : Starch)

Enrich the media with Starch for amylase producing organisms.

II Secondary Screening :-
a) Grain colony technique
b) liquid filtration method
c) Flask culture method.

Strain improvement :-

Natural isolates usually produce commercially important products in low concentrations. Hence, attempts are made to increase the productivity of the selected organisms.

Genetic approaches for Strain improvement are

1. Mutation :- spontaneous and induced mutations are as a result of structural changes in the genome.

Chromosome mutations with in chromosomes.

Gene or point mutations may change the base sequence in a gene. usually point mutations used in strain improvement results in transition or transversion. Frameshift mutations also used in Strain improvements.

Ultraviolet light (UV) and ionizing radiation are used in mutagenesis.

Ionizing radiation includes X-rays, γ-rays and β-rays which are causing iononization of the medium

Eg:- Chemical mutagens are EMS, MMS, Nitrosoguanidine and mustard gas

5BrUracil, frameshift mutagens such as dyes acridine orange, proflavin and acriflavine.

2) Recombination :- one of the 3 ways Transformation, transduction and conjugation

Genetic recombination in fungi :- protoplast fusion.

3) RDNA technology :-

Fermentation processes :- 1. Batch, 2) Fed batch 3) Continuous fermentation.

1. Solid state fermentation
2. liquid State fermentation.

J. Jyothi

Dec 2021

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Kopuri. Anuradha
Course / Group :	II BSc MBC MBF Sem - III
Paper : 3.	Microbial Genetics and Molecular biology
Name of the Topic	Types of RNA functions, Genetic code and Horizontal gene transfer.
Hours required	12
Learning Objectives	To study Structure and functions of RNA, Genetic code and bacterial recombinations.
Previous Knowledge to be reminded	Structure of RNA.
Topic Synopsis	Types of RNA:- Ribosomal RNA:- It found in the ribosome, it comprises about 80% of the total RNA of the cell. It is single strand twisted upon itself in some regions. Ribosome contains proteins and RNA. 70S ribosomes of prokaryotes consists of 30S subunit and a 50S subunit. 30S contains 16S rRNA while 50S subunit contains 23S and 5S rRNA. mRNA:- Jacob and Monod (1961) proposed the name messenger RNA for RNA carrying information for protein synthesis from the DNA to the sites of protein formation. It consists of only 3 to 5% of the total Cellular RNA. Molecular weight is 500000 kDa. & sedimentation coefficient. In E.coli average mRNA strand has 900 to 1500 nucleotide units.
Examples / Illustrations	mRNA molecule having the following structural features Cap at 5' end of RNA. Without Cap mRNA molecules bind very poorly to the ribosomes. Non coding region - 10 - 100 nucleotides. The initiation codon in AUG in both prokaryotes and Eukaryotes. Termination codons, UAA, UAG and UGA. Non Coding region - 2 (50 - 150) and poly A tail (250).
Additional Inputs	
Teaching Aids used	Black Board, Video, PPT
References cited	Molecular Biology by David Ritfelder Microbial Genetics and physiology by R.B Singh
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	project work
Any other Activity	

tRNA:- Soluble RNA or very small RNA, 10 to 20% of Cellular RNA
The function of tRNA is to carry amino acid to mRNA during protein synthesis. 3' end having -C-C-A and 5' end having G or C
It has 5 arm. 1) Acceptor arm - accepts aa 2) D- arm having D- Stem, D. loop 3) Anticodon arm 4) Avariable arm 5. TψC arm.

Genetic code:- The relationship between the sequence of bases on DNA/RNA and the sequences of amino acids in polypeptide chain called the genetic code. The code indicates which codon specify which amino acids.

1. 20 aa involved in protein synthesis.
2. Genetic code is triplet code.
3. The code is non-overlaping
4. The code is commaless
5. The code has polarity
6. Codons and anticodons
7. Initiation codon
8. Termination codons
9. The code is degenerate
10. The wobble hypothesis
11. Deciphering the code

Horizontal gene transfer or Recombination in Bacteria:-

1. Conjugation :- by pili
   a. $F^+ \times F^-$
   b. $Hfr \times F^-$
   c. $F' \times F^-$
2. Transformation.
   Eg: S. pneumoniae
3. Transduction:- (Bacteriophage)
   a. Generalized transduction
   b. Specialized transduction

D. Jyothi

Jan 2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kapri. Anna
Course / Group :	III BSc MBC Sem - V
Paper : 6	Food and Industrial Microbiology
Name of the Topic	Design of the Fermentor, Fermentation media, Downstreaming, Production of organic acids like Ethanol, citric acid, Penicillin, Vit-B_{12}, Glutamic acid amylase.
Hours required	16
Learning Objectives	To Study design of Fermentor, Fermentation media
Previous Knowledge to be reminded	Downstreaming, Production of organic acids like Ethanol, Citric acid, Penicillin, Vit-B_{12}, Glutamic acid and amylase.
Topic Synopsis	Design of Fermentor: It is made up of glass or stainless steel used for construction the body of the fermentor. glass is non toxic and Corrosion proof. Temperature control: Heat is produced by microbial activity and mechanical agitation. This heat needs to be dissipated by cooling. Aeration and agitation:- The agitator (Impeller stirrer glands and bearings Baffles, Sparger. Fermentation media: Carbon source:- Molasses:- It has 55-60% Sucrose, it should be adjusted to 12%.
Examples / Illustrations	Malt: Barley grains may be partially Starch and dextrin, Sulphite waste liquor, cellulose whey, oils and fats, Hydrocarbons and their derivatives
Additional Inputs	
Teaching Aids used	Black Board, PPT.
References cited	Industrial Microbiology by AH Patel
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Collection of Images of various fermenters. project work
Any other Activity	

Anna

Nitrogen sources:-
Corn steep liquid:-
Yeast extracts
peptones
soya bean meal.
Minerals: Magnesium, phosphorus, Sulphur, Calcium, Chlorine, are essential components, must be added as distinct components.
Growth factors:- which includes vitamins.
Chelators:- EDTA, complex with metalions; then more utilize
Buffers:- To achieve optimal productivity
Precursors:- Specific precursors maybe added to some fermentations involved in secondary metabolite production
Phenylacetic acid - penicillin Chrysogenum.
Inducers:- The majority of enzymes which are of industrial interest are inducible
α-amylase - Starch - Aspergillus spp.
Inhibitors:-
Glycerol - Sodium bisulphate Acetaldehyde production repressed. S. cerevisiae
Cell permability modifiers:-
penicillin in glutamic acid production by Corynebacterium
Oxygen:- oxygen is extremely important in controlling growth rate of metabolite production in aerobic mode
Antifoams:- Anti foams are surface active agents which can reduce the surface tension in the foam.
deep fermentation.
Downstream:-
Filtration, Centrifugation, Cell distruption - Solvent extraction
production of organic acids:-
Ethanol: Substrate is Molasses Top fermenter S. cerevisiae
Bottom fermenter is S. Carlsbergensis
Citric acid:- Surface and submerged fermentation by
A. niger
Vitamin B_{12}: ~~Corynebac~~ Streptomyces olivaceous
Glutamic acid: Corynebacterium glutamicum
Penicillin :- Penicillium chrysogenum
Amylase : B. Subtilis
A. niger.

D. Jyothi

Jan 2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Kapuri. Anwa
Course / Group :	II BSc MBC MBF Sem - III
Paper : 3	Microbial Genetics and Molecularbiology
Name of the Topic	Transcription, translation, lac operon, trp operon.
Hours required	12
Learning Objectives	To study transcription, translation, lac operon, and trp operon.
Previous Knowledge to be reminded	Structure of RNA and functions
Topic Synopsis	Transcription:- Components of the transcription machinery. 1. Temple 2. Activated precursor ATP, GTP, UTP → Ctp. 3. Divalent metalions Mg^{++} or Mgh^{++} 4. RNA polymerase Initiation of transcription:- RNA polymerase:- σ factor of enzyme interacts with core enzyme to form the complex enzymes Unwinding of DNA double helix RNA chain starts with G.T.P Elongation of the RNA chain:- DNA template + Activated ribonucleoside triphosphates (ATP, GTP, CTP, UTP) → (RNA polymerase) → DNA template + RNA + n Ppp
Examples / Illustrations	Eukaryotic transcription, translation.
Additional Inputs	in RNA processing in Eukaryotes
Teaching Aids used	Black Board, PPT, videos shared.
References cited	Molecularbiology by David Prifielder Molecularbiology and Physiology by R.P. Singh B.D. Singh
Student Activity Planned after the teaching	To draw the Transcription and translation diagram on Chart
Activity Planned outside the Class room, if any	project-work
Any other Activity	

a. Dissociation of sigma factor.
b. RNA chains grow in the 5'->3' direction
c. only one of the DNA strand of gene transcribes mRNA.

RNA chain termination:-
1. first type of the termination signal appears to be recognized by DNA it-self
2. Second type of termination signals involves an additional protein called the rho (ρ) factor. rho factor catalyses the termination.

Translation:-
Main steps in translation:
A) Activation of aminoacid.
B) Transfer of aa to tRNA
C) Initiation of synthesis
D) Elongation of polypeptide chain
E) chain termination.

A) Activation of aa:- L-aa are take part in protein synthesis by an enzyme "aminoacyl tRNA synthetase"

B) Transfer of aa to tRNA:-
- The activated aa is transferred to tRNA, A high energy ester bond is formed between carboxyl group of aa and OH group of terminal A of tRNA

Initiation:- initiation factor (IF) required. IF-1, IF-2 IF-3 are found in 30S subunits
IF-3 for binding of 30S to initiation complex

- Then formylation of methionine, formation of 30S initiation complex and formation of the mRNA-30S subunit complex

mRNA + 30S subunit $\xrightarrow{IF3}$ mRNA-30S Complex

- Binding of fMet-tRNA with mRNA-30S Complex

Elongation:-
Elongation factors like EF-T and EF-G are required.
ET-T was consist of two proteins which were called EF-Tu and EF-Ts. EF-G is involved in the translocation of mRNA-
Chain termination:- elongation of the polypeptide chain continues unit a termination codon on mRNA is reached (UAA, UAG, UGA)

Regulation of gene expression in prokaryotes:-
Inducible system:- Lac operon:- promoter genes, operator gene
In the absence of Lactose:- Genes are not expressed by Regulator gene which produces regulatory / Repressor protein
It binds to and blocks operator gene
In presence of inducer:- Structural genes are expressed
No blocking of operator gen, mRNA transcription by S. gene and Enzyme synthesis.

D. Jyothi

trp operon:- Repressible System:-
Corepressor absent:- Regulator gene → Inactive repressor.
No blocking of operator genes → g. expression (or repression)
Corepressor present:- Inactive repressor protein + Corepressor → active
Binds to block operator gene, No enzyme synthesis.

March 2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Kopuri. Arun
Course / Group :	II BSc MBC & MBF Sem - IV MB N 4324
Paper : 4	Medical Microbiology and Immunology
Name of the Topic	II Study normal flora, General principles of diagnostic microbiology; laboratory diagnosis; Serological methods.
Hours required	12
Learning Objectives	To study Normal flora, General principles of diagnostic microbiology
Previous Knowledge to be reminded	Germ theory of diseases.
Topic Synopsis	Normal flora of human body:- The normal flora are more or less constant for each species of are broadly divided into transients and residents. The transients are vary from time to time & impermanent because virtually all of them are unable to multiply vary ~~from~~ and usually die. The residents Constitute a constant population which can not be completely removed permanently. Normal flora of the Human body:- Most of skin microorganisms are associated directly or indirectly with apocrine glands. which are Secretary glands ~~occurring~~ associated directly or indirectly with apocrine glands. Hair follicles provide an attractive habitat for microorganisms in the area just below the
Examples / Illustrations	Transients Residents.
Additional Inputs	Reasons for permanent loss of Normal flora → effects.
Teaching Aids used	Black Board.
References cited	Ananthanarayana Medical Microbiology
Student Activity Planned after the teaching	Listing out Normal flora of body.
Activity Planned outside the Class room, if any	Isolation of microbes from the fingers
Any other Activity	Assignment.

the surface of the skin. Eg: Acinetobacter, Enterobacter, Klebsiella, Cyanobacteria, Micrococcus, propionibacterium, proteus, pseudomonas, Staphylococcus, Streptococcus, Bacillus, Mycobacterium and Candida.

Normal flora of the oral cavity: Streptococcus, Neisseria, Actinomycetes, veillonella, lactobacillus, and yeast. Streptococci spp come on to the enamel surface of teeth and gums in anaerobic.

Normal flora of Respiratory tract:- upper respiratory and lower respiratory tract. Upper respiratory tract- consist of Staphylococci, Streptococci, Neisseria, Haemophilus S. aureus and S. epidermis.

Lower respiratory tract:- No resident microflores

Normal flora of GIT:- stomach: Helicobacter pylori causes ulcers in susceptable human host-

Small intestine: Duodenum, lactobacillus, diptheroids, Enterococcus faecalis and Candida albugans.

Large intestine:- facultative anaerobic E. coli

Normal flora of urogenital tract:- Staphylococcus epidermidis, Enterococcus faecalis.

Nosocomial infection or hospital acquired infection:-

Burn infection:- Pseudomonas aeruginosa
Staphylococcus aureus
Streptococcus pyogenes.

Eye infection:- P. aeruginosa staphy. aureus

Gastro intestinal infection:- Shigella sonnei

Respiratory infection:- Staphylococcus aureus. H. influenza

Urinary tract infection:- Klebsiella.

wound → skin infection:- E. coli staphylococcus aureus.

Miscellaneous:- AIDS virus, Hepatitis B

D. Jyothi

TEACHING PLAN (SYNOPSIS)

March 2021

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Kapuri Arun
Course / Group :	III BSc MBC Sem - VI
Paper :	Microbial Biotechnology
Name of the Topic	Applications of Microbial Biotechnology
Hours required	18
Learning Objectives	To study applications of microbial Biotechnology in Human therapeutics, Agriculture, Environment and Food and Pharmaceuticals Industries
Previous Knowledge to be reminded	
Topic Synopsis	By using rDNA technology wide range of therapeutic agents are produced in sufficient quantities for human use. The commercial exploitation of rDNA technology began in late 1970s. There are 400 different proteins being produced by rDNA technology. Which may serve as therapeutic agents. Therapeutic agents are broadly divided into 1) Human protein replacements 2) therapeutic agents for human diseases 3) Vaccins. Human protein
Examples / Illustrations	HB vaccine, Insulin.
Additional Inputs	rDNA technology, vectors / plasmids.
Teaching Aids used	Black Board Teaching and PPT
References cited	Biotechnology by U. Satyanarayana
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Arun

Human protein replacements:-

Insulin: The hormone Insulin is produced by the β-cells of islets of Langerhans of Pancreas. It contain 51aa arranged in two polypeptides chains. The chain A has 21aa while B has 30 aa. Both are together by disulphide bonds

production of recombinant Insulin:-

The basic technique consisting of inserting human insulin gene and the promoter gene for lac operon into the plasmids of E. coli

In 1986 Eli Lilly company received approval to market human insulin under the trade name "Humulin".

Technique for recombinant insulin production:-

The gene for insulin A chain and B chain are separately inserted to the plasmids of two different E. coli cultures. The lac operon system consisting of inducer gene, promoter gene, operator gene and structural gene Z of β-galactosidase is used for expression the both genes. The media containing Lactose induce the synthesis of Insulin A and B chain separate culture then insulin chains is isolated purified and joined together to give a full pledged hormone.

Human growth Hormone:- Growth hormone is produced by pituitary gland. It regulates the growth and development. Growth Hormone stimulates overall body growth by increasing the cellular uptake of aa and protein synthesis.

Novel technology for production of human growth Hormone:-

The base sequence for cDNA encoding single peptide (26 AA total 56 aa) are cut by restriction endonuclease E. coli. The newly constructed cDNA, attached to vector inserted into a bacterium E. coli for culture. By this biology functional hGH can be prepared by rDNA technology. In the year 1985, recombinant hGH has approved for human use by Eli Lilly Company.

tPA:- By using rDNA technology cDNA for tissue plasminogen activator is synthesized. This cDNA was then attached to synthetic plasmid and introduced into mammalian cells. Then cells are selected on media containing methotrexate. tPA producing cells were transferred into culture media then it is isolated for therapeutic use. tPA was the first pharmaceutical product to be produced by mammalian cell cultures

D. Jyothi

b) Interferons., Recombinant Vaccines

Genetic manipulation for antibiotics, Genetic manipulation for enzymes, Biofertilizers. Symbiotic fixers, Green manure-

TEACHING PLAN (SYNOPSIS)

April 2022

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kopuri Aruna
Course / Group :	III BSc MBC/MBT Sem - V MB N 4324
Paper :	MB 4324 - Medical Microbiology and Immunology
Name of the Topic	General account of Microbial diseases – Tuberculosis, Typhoid, Candidosis, Aspergillosis, Malaria, Filaria.
Hours required	10
Learning Objectives	To study General account on microbial diseases
Previous Knowledge to be reminded	Germ theory of diseases.
Topic Synopsis	Mycobacterium tuberculosis :- Tuberculosis is caused by M. tuberculosis, +ve, acid fast staining first isolated by Robert koch in 1882, causes infection through respiratory route. staining property :- unique lipids called mycolic acid group and it is covalently bind to peptido glycan in the cell wall. Morphology :- rod, long filamentous, club-shaped Cultural characteristics :- optimum temp 37°C, pH is 6.4 to 7.0 addition of 0.5% glycerol improves the growth of M. tuberculosis in culture medium
Examples / Illustrations	lowenstein - jensen (LJ) medium without starch, coagulated hen's egg, mineral salt solution, asparagin and malachite green, dry, rough, raised compact, irregular, colour
Additional Inputs	Epidemiology of diseases
Teaching Aids used	Black board and PPT
References cited	Medical Microbiology by Ananthanarayana
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Collect the images of disease from web/ internet.
Any other Activity	

Virulence:- Cord like structure -, glycolipid.
pathogenesis:- Coughing, Sneezing, Speaking release numerous droplets as many as 3000 infectious nuclei per cough. Bacteria reaching the lungs are ingested by the alveolar macrophages. However, tuberculosis can be classified as primary and post-primary.
primary Tuberculosis:- Acute primary infection occurs, leading to the extensive destruction of lung tissues the spread of bacteria to other parts of the body and death.
post-primary tuberculosis:- Involvement of lymph nodes in unusual. widespread dissemination of lesions in the lungs of the area of destroyed tissues can be clearly seen in X-rays.
Prevention and Treatment:- BCG.
Typhoid:- Salmonella typhi, typhoid fever include headache, abdominal pain, anorexia, malaise of several weeks. Causal organism is Salmonella typhi
Morphology:- non-spring, non acid-fast, non-capsulated rods motile by peritrichous flagella
Cultural Characteristics:- optimum temp 37°C.
pathogenesis:- colonized in the peyer's patch of the intestinal ileum ulcers. dissemination through the circulatory system.
Laboratory diagnosis:- WIDAL test
Prevention and Treatment:- Cephalosporin Ceftriaxone. multidrug resistant
Aspergillosis:- fever and chills, A cough that brings up blood shortness of breath, chest or joint pain, Headaches or eye symptom, Skin lesion. Caused by aspergillus fumigatus is type of mold is the most likely to cause aspergillosis in certain people.
candidiasis:- Its fungal infection caused by a yeast candida. infection in bloodstream or internal organs like the kidney, heart or brain.
Malaria:- caused by plasmodium at vector Anopheles Stages are sporozoites, merozoite, schizont. Gamets, after fertilization produce oocyst having Sporozoits.
Treatment:- Chloroquine and primaquine
Filaria:- Wuchereria bancrofti D. Jyothi
Human stage:- lymphatic, Microfilaria, third stage larva, third stage larva migrate to host after taken a blood meal

TEACHING PLAN (SYNOPSIS)

April 2022

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr Kopuri. Anna
Course / Group :	III BSc MBC, MB-7324 Sem - VI
Paper :	Microbial Biotechnology.
Name of the Topic	Streptokinase, Microbial polysaccharides, Bioplastics and Biosensors.
Hours required	15
Learning Objectives	To study recombinant streptokinase, Microbial polysaccharides Bioplastics and Biosensors.
Previous Knowledge to be reminded	Microbes for modifications in production of various products.
Topic Synopsis	Streptokinase: streptokinase is thrombolytic therapy with fibrinolytic agents from the treatment of various circulatory disorders. For example, pulmonary embolism, deep venous thromosis and myocardial infraction. These disorder are leading cause of mortality. Among the commonly used plasminogen activators and streptokinase. There agents are collectively named as plasminogen activates as they convert the enzymatically inactive plasminogen into an active protease, plasmin which dissolves the fibrin clots and solubilizers. The degradation product that can removed by phagocytic and thus help the restoration of blood flow through the occulated vessels.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black Board and PPT
References cited	Biotechnology by U. Satyanarayana
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Recombinant protein production:-

The recombinant PET 32a is transformed in E.coli as host strain. LB agar and broth used for routine bacterial culture

production process:-

SK gene - PCR product was digest with Bam H, and hal ligated with PET 32 a and get PET 32 a SK plasmid. transformed into E.coli BL21 (DE3), expression of the SK protein was the induced by addition of isopropyl thio galactoside IPTG and get purified protein streptokinase by Ni - NTA resin.

Microbial polysaccharides:- The synthesis of polysaccharides produced when microbes are provided with excess carbon substrate and Carbon / nitrogen ratio 10:1 it is favourable for optimal polysaccharide synthesis. the production process is mostly carried out by batch culture fermentation by limiting nitrogen supply in the medium, mostly neural polysaccharides are produced

Xanthan:- It is a pentasaccharide containing Glucose, mannose, glucuronic acid, acetate pyruvate. It is produced by gram -ve bacteria. X. campestris. It is used as food additive for preparation of soft foods in oil industry for enhancing oil recovery. Xanthane is useful for the preparation of tooth paster and water

Dextrans: Streptococcus mutans

The Commercial production is carried out by batch fermentation.

The enzyme is dextransucrase which acts on both Sucrose + brings about

3) Alginates

4) Scleroglucan

5) Gellan

6) pollulan

7) Curdlan.

D. Jyothi

TEACHING PLAN (SYNOPSIS)

May 2022

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Jeopari Aruna
Course / Group :	II BSc MBC and MBF Sem - IV
Paper :	MB.N. 4324 Medical Microbiology and Immunology
Name of the Topic	Diseases caused by Hemoflagellates, L. Donovani and T. gambiense;
Hours required	10. principles of Chemotherapy, Penicillin,
Learning Objectives	Antifungal drugs - Nystatin, Antiviralagents Rebovirin, Drug resistance in bacteria
Previous Knowledge to be reminded	Chemotherapy.
Topic Synopsis	Leishmania Donovani :- The parasite occur in two form or stages; Leishmanial or amastigote and leptomonad or promastigote, which alternate between a vertebrate and an invertebrate host. The parasites introduce by sandfly into the body are in the promastigote form; entering the blood circulation directly become destroyed. Then enterily the reticuloendothelial system, spleen bonemarrow, lymph change into amastigote or leishmanial form. parasites are taken up by new host cells and the multiplication cycle is repeated so that the reticuloendothelial system becomes progressively infected.
Examples / Illustrations	Chemotherapy.
Additional Inputs	Synthatic drugs.
Teaching Aids used	Black Board and PPT
References cited	Brodes, Jawetz, Kuby's.
Student Activity Planned after the teaching	Assignment-
Activity Planned outside the Class room, if any	
Any other Activity	

some of free amastigoates are phagocytosed by the neutrophils and monocytes in the blood stream. These heavily parasitized cells wander through the general blood circulation leading to a general infection

Trypanosoma Gambiense:- Causes trypanosomiasis, most commonly referred to as sleeping sickness leading to coma stage and finally resulting into the death of the patient. In fact, two types of disease are caused by Trypanosome which are essentially similar in symptoms

Diagnosis, Treatment and Prevention of Disease:-
The diagnosis is confirmed by examining fresh or stained peripheral blood or by examining the cerebrospinal fluid obtained by lumbar puncture or by examining the extract of enlarged lymphatic glands

Treatment:- Arsenic & antimony compounds were the recently the drugs for treatment of trypanosomiasis. Bayer 205 called Antrypol, German or Suramin

→ Prevention:- By eradicating the vectors
→ Care should be taken to keep the reservoir hosts free from its infection.
→ Preventive medicine should be taken frequently and periodically which helps to a great extent from its infection.

Chemotherapy:- Penicillin. Mode of action:
β-lactam antibiotic, Drug is produced by P. notatum. The drug inhibits the cell wall synthesis in Gram-ve bacteria
Transpeptidase is an enzyme, which form bridge between two adjacent NAM, and makes the cell wall rigid
Here drug inhibit the Enzyme transpeptidase which involve in bridge formation, then cell wall become weak & content become leakout and leads to the death of cell.

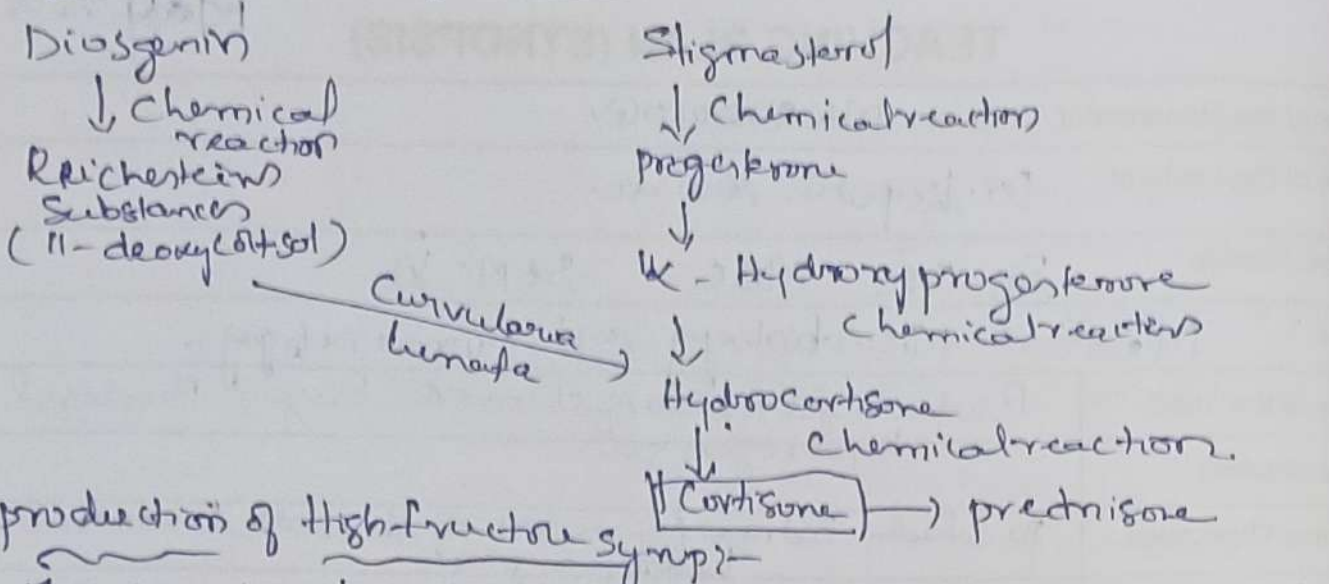
D. Jyothi

TEACHING PLAN (SYNOPSIS)

May 2022

Name of the Department / Subject :	MICROBIOLOGY
Name of the Lecturer :	Dr. Kopuri. Aruna
Course / Group :	III BSc MBC SEM - VI
Paper :	Medical Microbiology and Immunology
Name of the Topic	Biotransformation of steroids, Biogas, Biodesel. Hydrogen gas
Hours required	
Learning Objectives	To Study Biotransformation of steroids, Biodesel & hydrogen gas.
Previous Knowledge to be reminded	Chemical methods for transformation of steroids.
Topic Synopsis	All the steroids possess the basic structure namely cyclopentano perhydrophenanthrene Steroids as hormones Eg estrogen, androgen perform a wide range of function. they are very useful therapeutically. Cortisone due to its anti-inflammatory action is used in the treatment of rheumatoid & skin diseases derivatives of progesterone and estrogens are employed as a Contraceptive certain derivatives of Cortisone are more effective in their therapeutic action. Commercial production of steroids is very important.
Examples / Illustrations	Chemical steps involved in transformation
Additional Inputs	Mors & their Enzymes involved in biotransformations
Teaching Aids used	Black Board & PPT
References cited	Biotechnology by U Satyanarayana
Student Activity Planned after the teaching	Assignment-
Activity Planned outside the Class room, if any	
Any other Activity	

Biotransformation of cholesterol:-



production of High-fructose syrup:-

Fructose is the sweetest amongst the monosaccharides and has twice the sweetening strength of Sucrose. Glucose is about 75% as sweet as sucrose. Therefore Glucose cannot be a good substitute for Sucrose sweetening. Hence there is a great demand for fructose which is very sweet, but has the same calorific value as that of Glucose or Sucrose. HFS contains approximately equivalent amount of glucose and fructose. High fructose syrup is almost similar to sucrose. Used in the preparation of soft drinks processed foods at baking

Glucose isomerase intracellular enzyme produced by a no of micro. the species of arthrobacter, bacillus and streptomyces are preferred sources. Being an intracellular enzyme, the isolation of glucose isomerase without loss of biologically activity required special and costly techniques may at times whole cell or partly broken cells are immobilized are used.

Enzyme	Application
Aminoacylase	production of L-aminoacids
Glucoisomerase	production of High fructose syrup
Amylase	production of glucose from starch
β-galactosidase	Splitting of lactose to glucose + galactose
Fumarase	Synthesis of malic acid from fumaric acid
Ribonuclease	• Synthesis of nucleotides for RNA

D. Jyothi

TEACHING PLAN (SYNOPSIS)

June 2022

Name of the Department / Subject :	MICROBIOLOGY
Name of the Lecturer :	Dr. K. ARUNA
Course / Group :	II BSc MBC & MBT Sem - IV MB N : 4324
Paper :	Medical Microbiology and Immunology
Name of the Topic	types of Immunity, cells of Immune system, Organs of Immune System, Ag types & properties, types of Ab, Ag x Ab interaction,
Hours required	18
Learning Objectives	To study - ~~types of Immunity, serological~~ methods, Monoclonal Ab production, ~~Hypersensitivity~~
Previous Knowledge to be reminded	
Topic Synopsis	types of Immunity :- 1) Innate Immunity :- physical & chemical barrier - 1) Skin, Mucous membrane, respiratory system, Gastrointestinal system, Genitourinary system, Eye, Bacteriocins, Beta-lysins and other polypeptides. 2) Inflammatory response, phagocytosis (1) opsonin-dependent recognition, opsonin (2) -independent recognition. The complement, interferons, Elevated body temperature fever factors that influence innate immunity :-
Examples / Illustrations	1) Age 2) Nutritional factors 3) Hormonal influence of Sex.
Additional Inputs	
Teaching Aids used	Black Board and PPT
References cited	Kuby - Immunology.
Student Activity Planned after the teaching	Assignment -
Activity Planned outside the Class room, if any	
Any other Activity	

Acquired Immunity :-

Specificity, Diversity, Memory and Discrimination between self and non-self.

-types of Acquired immunity :- Active immunity and Passive immunity.

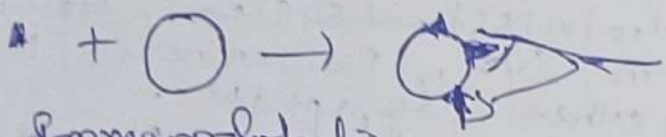
Organs of Immune System :-

1ry organs :- Thymus, Bone marrow, Bursa of fabricius

2ry organs :- Lymphnodes, Spleen, Tonsils, Peyer's patch and Lamina propria.

Cells of Immunesystem :- B-lymphocytes, T-lymphocytes Monocytes, Macrophages, Granulocytes, Basophils, Eosinophils, Neutrophils, Dendritic cells and Mast cells.

Antigen :- Complete and partial antigen (Hapten)

Eg: 

Types of Immunoglobulins :-

Ig G, Ig A, Ig D, Ig M, IgE.

IgG : Maternal Ab.

Ig M : Secreted into Serum during 1ry antibody response IgM are generally of low affinity but high avidity.

Ig A :- Secretory immunoglobulin

IgE. allergic Ab. Ig D :- 2°ry infection.

Serological techniques :- ELISA, RIA, IRF.

Ag-Ab interactions :- precepitation, Agglutination RIA, II, ELISA and Compliment fixation

Hypersensitivity :- 4 types

type - I type-2 type-III type - IV

Monoclonal Ab production :- Hybridoma technology

Making Hybridoma :-

1. Immunization
2. killing of Animal and Separation of lymphocytes
3. Selection of Myeloma cell lines
4. Fusion of Separated Lymphocytes D. Jyothi
5. Selection of Hybridoma cells

June 2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Microbiology
Name of the Lecturer :	Dr. Kopuri. Aruna
Course / Group :	III BSc MBC Sem - VI
Paper :	Microbial Biotechnology
Name of the Topic	IPR, Biogas Biodesel, Mineral recovery.
Hours required	12 :
Learning Objectives	To Study IPR. Biodesel. Mineral recovery.
Previous Knowledge to be reminded	
Topic Synopsis	Intellectual property Rights:- Transformed mans, plants and animals and technologies are exclusively the property of the Intellectual. Discove has the full rights on his property the right of Intellectual must be protected. Legal rights of patents are provided only temporary for the use of invention forms of protection:- The IPR is protected by different ways. 1) Patents 2) Copy rights 3) Trade secrets.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black Board and PPT
References cited	U. Satyanarayana - Biotechnology
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

Patent: It is special right to the inventor granted by the Govt.
A patent consists of 3 parts:-
a) Grant b) Specification and claims
Copyrights:-
It is a legal right the author, Editors of publisher have copyrights. the materials of the book cannot be reprinted or reproduced.
Trade secrets:- It is a formula, practice, process design, instrument, pattern Commercial method not generally known.
Machine processes.
Manufactory techniques, methods, repair techniques KFC, Cocacola.
Mineral Recovery of Microbial mining:-
Majority of microbes can interact with metals and recovered by ores. The process involved is known as Bioleaching.
Bioleaching:- Metals can be extracted from low grade ores. It has two reactions
Direct and indirect leaching
Biogen production:- Biogas is a mixture of gases composed of methane (50-80%) Co_2 (15-40%) Nitrogen (4%) and H_2S (1%) with traces of H_2 oxygen Co_2. There are many other common names for biogen, gobber gen, Sewage gas, Klargas Sludge gas.
production occur in 4 phases:-
1) Hydrolytic phase
2) Acidification phase
3) Acetogenic phase
4) Methanogenic phase
Bioethanol production
By S. Cervisiae at temp of 35°c under anaerobic Condition.
1) Hydrolysis:- 2) Fermentation
Bioethanol production:-
1) Acid hydrolysis 2) Saccharification using Amigel.

D. Jyothi

TEACHING PLAN (SYNOPSIS)

March 2021

Name of the Department / Subject :	Microbiology.
Name of the Lecturer :	Dr. Kopuri Aruna
Course / Group :	III BSc MBC Class 3.
Paper :	Media: Blood agar, chocolate agar, Lowenstein Jensen media and staining techniques Gram staining Acid-fast staining technique.
Name of the Topic	Serological methods: ELISA, RIA & IF
Hours required	10hr.
Learning Objectives	To study types of media, staining & Serological method.
Previous Knowledge to be reminded	principle of staing techniques
Topic Synopsis	Blood agar :- Blood agar is used to grow a wide range of pathogens particularly there are more species. It is also required to detect and differentiate haemolytic bacteria especially Streptococcus species. It is also a differential media. Blood agar is enriched medium often used to grow organisms. To differentiate bacteria based on their haemolytic properties - β - α, γ and (non-haemolytic) Chocolate agar :- The composition of chocolate agar and Blood agar is the same only difference is while preparing Chocolate agar, the blood cells are lysed.
Examples / Illustrations	Nutritional requirements of Bacteria
Additional Inputs	EMB agar.
Teaching Aids used	Black Board and PPT
References cited	Medical Microbiology by Ananthanarayan
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

The lysis RBC, during heating process releases intracellular co-enzyme Nicotinamide adenine dinucleotide (NAD) & V factor & to the agar for utilization by bacteria

It is enrichment media for Neisseria gonorrhoea and slants is used for short term storage of pathogen such as N. meningitides, S. pneumonia & H. influenza

Mac Conkey agar:-

It is used to isolate gram-negative bacteria and differentiation of lactose fermentation bacteria from non-lactose fermenter

Crystal violet & bile salts which have inhibitory & the fermentable source of carbohydrates.

Neutral red is pH indicator.

Agar solidifying agent

Lowenstein-Jensen (LJ) medium

It is used to cultivate and isolate of Mycobacterium Species, it was developed by lowenstein which incorporated congo red & malachite green to inhibit unwanted bacteria glycerated egg-based media

L-Asparagine } Sources of Nitrogen & vitamins
potato flour }

Monopotassium phosphate } Malachite
Magnesium Sulfate } green

Egg suspension:- provide fatty acids & protein
Glycerol: Serve as carbon source

D. Jyothi

ॐ

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)
2021- 2022

Name of the Lecturer डा॰ उपद्रष्टा वेङ्कटरमणमूर्तिः

Department of संस्कृतम

Dr. U.V. RAMANA MURTHY
LECTURER IN SANSKRIT

नवम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा.. उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम् बि.ए ; बि.काम् ; बि.यस्.सि
Paper :	III
Name of the Topic	वसिष्ठाश्रमगमनम्
Hours required	6
Learning Objectives	कालिदासस्य काव्यनाटकादीनि, तथैव रघुवंशसारांशः
Previous Knowledge to be reminded	कालिदासस्य राष्ट्रीयता, व्यक्तित्वं च
Topic Synopsis	कविकुलगुरुः, दीपशिखा कालिदासः संस्कृत-भाषायां खण्डकाव्यद्वयं (मेघसन्देशः, ऋतुसंहारः), महाकाव्यद्वयं (रघुवंशम्, कुमारसम्भवम्), रूपकत्रयम् (अभिज्ञान शाकुन्तलम्, विक्रमोर्वशीयम्, मालविकाग्निमित्रम्) च व्यरचयत्। रघुवंशमहाकाव्ये दिलीपं तः आरभ्य अग्निवर्णपर्यन्तं त्रयोविंशति राज्ञां चरितं वर्णितवान्। सन्तानरहितः दिलीपः स्व पत्न्या सुदक्षिणया सह स्व कुलगुरोः वसिष्ठाश्रमं प्रति गमन समये – अद्भुतं वर्णनं कृतमस्ति कालिदासेन
Examples / Illustrations	आवश्यकानि उदाहरणानिं प्रस्तुतीकरणम्
Additional Inputs	प्रकृति सम्बन्धानि अन्यानि काव्यनाटकादीनि
Teaching Aids used	संगणकम्, कृष्णफलकम्
References cited	यु ट्युब् / विकीपीडिया द्वारा
Student Activity Planned after the teaching	वसिष्ठाश्रमगमनम् पाठस्य सारांशः
Activity Planned outside the Class room, if any	कालिदासस्य अन्य रचनानां सङ्ग्रहणम्
Any other Activity	संस्कृत श्लोकशिक्षणम्

दिसम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम् बि.ए/बि.काम्/बि.यस्.सि
Paper :	III
Name of the Topic	संस्कृतव्याकरणम् — शब्दाः - अलङ्काराः
Hours required	6
Learning Objectives	पाठ्यपुस्तके विद्यमानानि
Previous Knowledge to be reminded	वाक्यनिर्माणसामर्थ्यम् / भिन्नभिन्न अलङ्काराणां ज्ञानम्
Topic Synopsis	हलन्तशब्दाः — पुंलिङ्ग, स्त्रीलिङ्ग, नपुंसकलिङ्ग सप्तविभक्तयः / प्रथमाविभक्तितः सप्तमीविभक्तिपर्यन् एकवचनम्, द्विवचनम्, बहुवचनम् च / उपमालङ्कारः - अनन्वयालङ्कारः दृष्टान्तालङ्कारः - उत्प्रेक्षालङ्कारः अर्थान्तरन्यासालङ्कारः - दीपकालङ्कारः अलङ्कारस्य लक्षणम् — सोदाहरणं पूर्वकं च
Examples / Illustrations	आवश्यकानां शब्दानाम् प्रस्तुतीकरणम्
Additional Inputs	एतेषां सम्बद्धानां शब्दानां तथैव अलङ्काराणां च शिक्षणम्
Teaching Aids used	सङ्गणकम्, कृष्णफलकम्
References cited	यूट्यूब, विकीपीडिया द्वारा
Student Activity Planned after the teaching	शब्दानां रटनम् - ~~कण्ठ~~ कण्ठस्थीकरणम् अलङ्काराणां श्लोकानां च लेखनम् च
Activity Planned outside the Class room, if any	अन्य सम्बद्धानां शब्दानां ज्ञापनम् अलङ्काराणाम् उदाहरणानि सूचयन् पाठनम्
Any other Activity	अलङ्काराणां लक्षणश्लोकानां कण्ठस्थीकरणम्

K.V. Sastha 29/8/22

2022
जनवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम्
Paper :	III
Name of the Topic	शिष्यानुशासनम्
Hours required	6
Learning Objectives	तैतिरीयोपनिषद् - अरण्यकाङ्गः - शिक्षावल्ली
Previous Knowledge to be reminded	दशोपनिषदां सुप्रसिद्धता - प्राधान्यं च
Topic Synopsis	गुरुकुले विद्याभ्यासस्समनन्तरं गृहं प्रति गच्छतः शिष्याणां प्रति गुरुः एवमुपदिशति - सत्यं वद - धर्मं चर - मातृदेवो भव - पितृदेवो भव - आचार्यदेवो भव - अतिथिदेवो भव - स्वाध्यायात् न प्रमदितव्यम् - धर्मान्न प्रमदितव्यम् - कुशलान्न प्रमदितव्यम् - भूत्यै न प्रमदितव्यम् - सत्यान्न प्रमदितव्यम् - देवपितृकार्यभ्यां न प्रमदितव्यम् - स्वाध्यायप्रवचनाभ्यां न प्रमदितव्यम् ---- इत्यादि।
Examples / Illustrations	छात्रेभ्यः उपयुज्यमानानि आवश्यकानि भिन्न भिन्न उदाहरणानि
Additional Inputs	एकैकस्य उपदेशस्य विषये नैकान्युदाहरणानि दत्त्वा प्रेरणोत्पादनम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया द्वारा
Student Activity Planned after the teaching	शिष्यानुशासनम् विषयस्य सारांशः
Activity Planned outside the Class room, if any	उपनिषदां मुख्योद्देशः, प्रयोजनं च
Any other Activity	उपनिषद्वाक्यानां कण्ठस्थीकरणम्

2022
जनवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	आर्षपादुकाभिषेकः
Hours required	6
Learning Objectives	वाल्मीकिमहर्षेः श्रीमद्रामायणम्
Previous Knowledge to be reminded	वाल्मीकिमहर्षेः, रचना, शैली, -आदिकविः
Topic Synopsis	आदिकवि बिरुदाञ्चितः श्रीमद्वाल्मीकि महर्षिः आदिकाव्यं रामायणं व्यरचयत। बाल-अयोध्य-अरण्य-किष्किन्ध-सुन्दर-युद्ध-उत्तर काण्डाः सप्त। चतुर्विंशति सहस्रं श्लोकाः। आरम्भे विद्यमानाः शतं श्लोकाः बालरामायणम् अथवा सङ्क्षेपरामायणमिति व्यवह्रियते।
Examples / Illustrations	त्रेतायुगस्य वैशिष्ट्यम्। रामकथा इतिवृत्तम्
Additional Inputs	वाल्मीकेः प्रभावान्नृगुणं शताधिकाः कवयः अद्यापि रामायणानि लिखन्तीति अहो महत्।
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब् - विकीपीडिया द्वारा
Student Activity Planned after the teaching	रामचन्द्रस्य आदर्शगुणाः
Activity Planned outside the Class room, if any	रामायणे विद्यमानानां प्रसिद्धाः गुणाः
Any other Activity	प्रसिद्धानां श्लोकानां कण्ठस्थीकरणम्

(फरवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीय सत्रम् / बि॰ए / बि॰काम् / बि॰ यस॰ सि
Paper :	III
Name of the Topic	संस्कृत साहित्येतिहासः / प्रत्ययाः
Hours required	6
Learning Objectives	भिन्न भिन्न कवीनां विषयः / षड् प्रत्ययाः
Previous Knowledge to be reminded	वाक्य निर्माणम् / कवीनां विषये ज्ञानम्
Topic Synopsis	पाणिनिः - अष्टाध्यायी कौटिल्यः - अर्थशास्त्रम् शङ्कराचार्यः - जगन्नाथ पण्डितरायः कृत्प्रत्ययाः - क्त्वा ल्यप् तुमुन् क्त क्तवतु तव्य शतृ शानच्
Examples / Illustrations	आवश्यकानामुदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	अन्येषामुदाहरणानां कथनमभ्यासं च
Teaching Aids used	संगणकम् - कृष्णफलकम्
References cited	यूट्यूब् - विकीपीडिया
Student Activity Planned after the teaching	कवीनां जीवनशैली - प्रत्यय प्रयोगः
Activity Planned outside the Class room, if any	कवीनां सन्देशाः तेषां काव्यानां पठनम्
Any other Activity	कवीनां, काव्यानां च विषये वर्गीकरणम्

फिब्रवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपदेष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	यक्षप्रश्नाः
Hours required	6
Learning Objectives	व्यासमहर्षेः कृतीः / वेदविभाजनम् / महाभारतम्
Previous Knowledge to be reminded	वेदव्यासमहर्षेः जगद्गुरुत्वम्
Topic Synopsis	पराशरः — सत्यवती-पुत्रः पाराशरः बादरायणः - कृष्णद्वैपायनः - जगद्गुरुः / इतिहासः - महाभारतम् — अष्टादशपर्वाणि एकलक्षं श्लोकाः / ~~xxx~~ अधर्मपरायणानां कौरवाणाम् उपरि धर्मपरायणानां पाण्डवानां विजयः / परोपकारः पुण्याय पापाय परिपीडनम् /
Examples / Illustrations	आवश्यकानाम् उदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	महाभारताधारेण रचिताः भिन्नाः ग्रन्थाः, रचितानि अनेकानि नाटकानि /
Teaching Aids used	सङ्गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	कवीनां जीवनशैली — सुभाषितानि
Activity Planned outside the Class room, if any	संस्कृतसाहित्ये पर्यावरणपरिरक्षणम्
Any other Activity	सुभाषितानां कण्ठस्थीकरणम् / सम्भाषणम्

मार्च

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	मेवाडराज्यस्थापनम्
Hours required	6
Learning Objectives	श्रीमत्प्रतापराणायणमहाकाव्यम्
Previous Knowledge to be reminded	ओमेटिपरीक्षित शर्मणां देशभक्तिः। संस्कृतसेवा
Topic Synopsis	राजस्थान् वीरभूमिः। महम्मदीयानाम् आक्रमणम् महाराणाप्रतापसिंहः। साहसम् त्यागः। मेवाडराज्यस्थापनार्थं सोदरद्वयस्य साहसोपेतं कार्यम्। गृहं गृहं प्रति गमनम्। प्रजासु देशभक्ति-पूरणम्। शत्रुभिः सार्धं युद्धकरणम्। विजय-प्राप्तिः। मेवाडराज्यस्थापनम्।
Examples / Illustrations	छात्रेभ्यः आवश्यकानाम् उदाहरणानां कथनम्।
Additional Inputs	विदेशीयानामाक्रमणकाले भारतीयवीरैः कृतः त्यागः।
Teaching Aids used	सङ्गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	देशधर्मसंस्कृतीनां रक्षणार्थं जीवितसमर्पितानाम् नैकानां जीवनगाथाः।
Activity Planned outside the Class room, if any	असेतुभारतम् — वीरभूमिदर्शनम्।
Any other Activity	धीराणां, वीराणां जीवनाध्ययनम्।

एप्रियल

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	व्याकरणम्
Hours required	6
Learning Objectives	पाणिनिमहर्षेः अष्टाध्यायी -
Previous Knowledge to be reminded	अक्षराणाम् उत्पत्तिः। माहेश्वरसूत्राणि - वर्णाः - पदानि
Topic Synopsis	शब्दाः — अजन्त पुंलिङ्ग - स्त्रीलिङ्ग - नपुंसकलिङ्ग शब्दाः धातवः — परस्मैपदि, आत्मनेपदि धातवः लट् - लङ् - लोट् - विधिलिङ् - लृट् सन्धयः — अच् सन्धयः सवर्णदीर्घ / गुण / यणादेश / वृद्धि समासाः — अव्ययीभाव / पूर्वरूप सन्धयः तत्पुरुष समासः, कर्मधारय समासः द्विगु समासः - द्वन्द्व समासः
Examples / Illustrations	आवश्यकानां शब्दानां, धातूनां, सन्धीनां, समासानां च कथनम्।
Additional Inputs	सरलभाषया व्याकरणांशानां बोधनम्
Teaching Aids used	श्रव्यकम् — दृश्यफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	भिन्नभिन्न वाक्यनिर्माणार्थं शब्दानां, धातूनां च उत्तमतया अभ्यासः।
Activity Planned outside the Class room, if any	प्रकृतिरक्षणम् - पर्यावरणपरिरक्षणम्
Any other Activity	व्याकरणांशानां कण्ठस्थीकरणम् - लेखनं च।

जून

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II
Name of the Topic	इन्दुमती स्वयंवरः — शिष्येभ्यो दीक्षाप्रदानम्
Hours required	6
Learning Objectives	महाकविः — कविकुलगुरुः — कालिदासः
Previous Knowledge to be reminded	रघुवंशमहाकाव्यम्
Topic Synopsis	कविकुलगुरुः — दीपशिखा कालिदासः महाकाव्यद्वयम् — रघुवंशम् — कुमारसम्भवम् खण्डकाव्यद्वयम् — ऋतुसंहारः — मेघसन्देशः रूपकत्रयम् — अभिज्ञानशाकुन्तलम् — मालविकाग्निमित्रम् — विक्रमोर्वशीयम् अजमहाराजः — विदर्भराजसोदरी इन्दुमती सखी — इन्दुमत्याः सुनन्दा अज इन्दुमत्योः विवाहः
Examples / Illustrations	राष्ट्रकवेः कालिदासस्य वैशिष्ट्यम्
Additional Inputs	सभायां कथम् उपवेष्टव्यम्? कथं व्यवहर्तव्यम्? कथं भाषणं करणीयम्? इत्यादयः अनेकविषयाः
Teaching Aids used	श्यामपटकम् — वृक्षफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	कविकुलगुरुः कालिदासः राष्ट्रियकविः
Activity Planned outside the Class room, if any	कालिदासस्य वैशिष्ट्यम् — भिन्नभिन्नविषयाः
Any other Activity	अनुष्टुप् वृत्तम् — त्रयोदश श्लोकाः

जुलै

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम् / बिए / बिकाम / बि.यस.सि
Paper :	II गङ्गावतरणम् - वन्दे काश्मीरभारतम्
Name of the Topic	गङ्गावतरणम् - वन्दे काश्मीरभारतम्
Hours required	6 2
Learning Objectives	भोजस्य चम्पूरामायणम् / काश्मीरम् - डा॥ द्युलिपाल
Previous Knowledge to be reminded	भोजमहाराजस्य वैशिष्ट्यम् / अखण्डभारतम्
Topic Synopsis	चम्पूरामायणम् / सगरः - अश्वमेधयागः - अश्वापहरणम् - पुत्राणां कपिलमहर्षेः नेत्राग्निना भस्मीकरणम् - गङ्गा - स्वर्गलोकात् भूलोकः, भूलोकात् पातालः, भगीरथयत्नः - तपः - गङ्गावतरणम् - भागीरथी - वन्दे काश्मीरभारतम् - डा॥ द्युलिपाल रामकृष्णमहोदयः - सुन्दरमयं काश्मीरम् - भारतमातुः मुकुटायमानम् - जम्मू - काश्मीरम् - लद्दाखः - राजा हरिसिंहः - स्वतन्त्रभारतम् - सर्वासां संस्थानां विलीनम् - अखण्डभारतम् /
Examples / Illustrations	आवश्यकानाम् उदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	अखण्डभारत / पुण्यभूमिभारत चित्रम् ॥
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	संस्थानानि / काश्मीरप्रदेशस्य विशेषाः
Activity Planned outside the Class room, if any	अन्यरामायणानां संङ्कलनम् / भारतस्य मानचित्रम्
Any other Activity	अखण्डभारतस्य भौगोलिकस्वरूपम्

अगस्त

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II अवन्तीसुन्दरीकथा - चारुदत्तचरितम् ~~व्याकरणम्~~
Name of the Topic	गद्यभागः - अवन्तीसुन्दरीकथा - चारुदत्तचरितम्
Hours required	6 . 6
Learning Objectives	दण्डि महाकवेः - दशकुमारचरितम्
Previous Knowledge to be reminded	दण्डिनः पदलालित्यम्
Topic Synopsis	मगधराजः - राजहंसः - मित्रद्वयम् - त्रयः मन्त्रिणः मालवराजः मानसारः - आक्रमणम् - राजहंसस्य पलायनम् वने वासः - राजवाहन जननम् - दशकुमाराणां जननम् अत्यन्तरमणीयवर्णनम् - राजवाहनस्य, स्वमित्रैः सह भिन्न भिन्न सन्दर्भेषु प्रवृत्ताः विषयाः। चारुदत्त चरितम् - भासनाटकचक्रम् - महालिङ्ग-शास्त्री ब्राह्मणः, दरिद्रः - गणिका वसन्तसेना - परस्परानुरागः राजश्यालकः शकारः - मैत्रं मैत्रेयः - परिचारिका रदनिका परिचारिका मदनिका - ~~शर्व~~ वसन्तसेनायाः आभरणरक्षणम् धैर्यम् - विपर्यया रत्नावलीदानम् - चारुदत्तस्य सौशील्यम्।
Examples / Illustrations	मानवजीवने आवश्यकानां शीलादीनां गुणानां कथनम् दण्डिमहाकवेः ललितपदानां निर्मितिः।
Additional Inputs	प्राचीनकाले एव आधुनिकविषयाणां कथनं, पात्रचित्रणम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम् - पाठ्यपुस्तकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	भासमहाकविः - नाटककर्तृषु सर्वप्रथमः दण्डिमहाकविः - ग्रन्थत्रयम्
Activity Planned Outside the Class Room, if any	भासमहाकवेः नाटकरचनाकौशल्यम्। नाटकनियमाः
Any other Activity	दशकुमारचरितम् - आदर्शगुणाः - सौशील्यादि गुणाः चारुदत्तचरितम् -

TEACHING PLAN (SYNOPSIS)

सेप्टेम्बर

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II
Name of the Topic	व्याकरणम् - शब्दाः - ~~[illegible]~~ - ~~[illegible]~~ धातवः सन्धयः - समासाः
Hours required	06
Learning Objectives	विभक्तिवल्लरी - संस्कृतसाहित्येतिहासः
Previous Knowledge to be reminded	अन्तर्मध्यमिक इण्टर्मीडियट् मध्ये पठितानां शब्दानां स्मारणम्
Topic Synopsis	- हलन्त ~~&~~ शब्दाः - पुंलिङ्ग / स्त्रीलिङ्ग / नपुंसकलिङ्ग - ~~[illegible]~~ - ~~&~~ धातवः - परस्मैपदि धातवः / आत्मनेपदि धातवः प्रथमपुरुष - मध्यमपुरुष - उत्तमपुरुष एकवचनम् द्विवचनम् बहुवचनम् - सन्धयः - श्चुत्व सन्धिः / ष्टुत्व सन्धिः / जश्त्व सन्धिः अनुनासिक सन्धिः / उम्मुडागम सन्धिः / तल सन्धिः विसर्ग सन्धिः - समासाः - अव्ययीभाव समासः - तत्पुरुष समासः कर्मधारय समासः - द्विगु समासः - द्वन्द्व समासः
Examples / Illustrations	पाठ्य पुस्तके विद्यमानाः शब्दाः, धातवः - सन्धयः - समासाः तेषाम् उदाहरणानि
Additional Inputs	एतेषां सम्बद्धानाम् उदाहरणानां शिक्षणम्
Teaching Aids used	सङ्गणकम् / कृष्णफलकम्
References cited	युट्युब / विकीपीडिया
Student Activity Planned after the teaching	शब्दानां, धातूनां, सन्धीनां, समासानां च उदाहरणानां ~~&~~ पठनम् - लेखनम् - कण्ठस्थीकरणम् /
Activity Planned outside the Class room, if any	वर्ण-पद-वाक्य ज्ञानम् - वाक्य निर्माणं च /
Any other Activity	सर्वेषाम् उदाहरणानां कण्ठस्थीकरणम् / नूतनानां लेखनम्

अक्टोबर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयसत्रम्
Paper :	II
Name of the Topic	हलन्तशब्दाः -
Hours required	06
Learning Objectives	पाणिनिमहर्षेः अष्टाध्यायी - सिद्धान्तकौमुदी
Previous Knowledge to be reminded	अन्तर्माध्यमिकस्तरे वर्षद्वयेऽपि पठिताः शब्दाः
Topic Synopsis	शब्दाः DECLENSIONS अजन्तशब्दाः - हलन्तशब्दाः पुंलिङ्गशब्दाः - स्त्रीलिङ्गशब्दाः - नपुंसकलिङ्गशब्दाः एकवचनम् द्विवचनम् बहुवचनम् जलमुच् शब्दः भिषज् शब्दः मरुत् शब्दः, भगवत् शब्दः, भवत् शब्दः पचत् शब्दः, आत्मन् शब्दः, गुणिन् शब्दः युष्मद् शब्दः, अस्मद् शब्दः
Examples / Illustrations	आवश्यकानां शब्दानां प्रस्तुतीकरणम्
Additional Inputs	एतेषां सम्बद्धानां शब्दानां शिक्षणम्
Teaching Aids used	कृष्णफलकम् - यूट्यूब वीडियो - स्मार्टफोन
References cited	यूट्यूब - विकीपीडिया द्वारा
Student Activity Planned after the teaching	शब्दानां रटनम् - कण्ठस्थीकरणं - लेखनम्
Activity Planned outside the Class room, if any	अन्य सम्बद्धानां शब्दानां ज्ञापनम्
Any other Activity	पत्राणि निर्मातुं प्रयत्नः - अभ्यासः

TEACHING PLAN (SYNOPSIS) नवम्बर

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयसत्रम्
Paper :	II
Name of the Topic	मध्यमव्यायोगः
Hours required	6
Learning Objectives	भासमहाकविः — नाटककर्तृषु सर्वप्रथमः
Previous Knowledge to be reminded	भासनाटकचक्रम्
Topic Synopsis	नाटकान्तं हि साहित्यम्। दशविधरूपकाः। त्रयोदशनाटकानि। रामायणमहाभारतादिकथाश्रिताः। महाभारतकथाश्रितः मध्यमव्यायोगः। द्यूतक्रीडायां पराजिताः पाण्डवाः वने वसन्ति स्म। हिडिम्बा उपवासनिमित्तं नरमानेतुं स्वपुत्रं घटोत्कचं प्रेषितवती। ~~केश~~ सपुत्रदारः केशवदासं अवरोधयति। मध्यमपुत्रम् "मध्यम" इति आह्वयति। भीमसेनः आगच्छति। केशवदासं रक्षितुं भीमः सिद्धो भवति। हिडिम्बा स्वपतिं दृष्ट्वा आनन्दमनुभवति। वीरं पुत्रं, पत्नीं दृष्ट्वा भीमः सन्तुष्टः भवति।
Examples / Illustrations	भासमहाकवेः रूपकरचना वैशिष्ट्यम्
Additional Inputs	साहित्येतिहासे रूपकस्य प्राधान्यम्। वैदिकार्या ~~महत्व~~ अदर्शनीयाः विषयाः।
Teaching Aids used	स्लाइड्स्-गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	भीमसेनस्य आर्तत्राणपरायणता। घटोत्कचस्य मातृभक्तिः। ब्राह्मणपरिवारवैशिष्ट्यम्।
Activity Planned outside the Class room, if any	भासमहाकविः — रूपकरचनाचातुर्यम्
Any other Activity	भारतं पञ्चमो वेदः

डिसम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	~~II~~ तृतीयसत्रम्
Paper :	II
Name of the Topic	सङ्कल्पबलम्
Hours required	6
Learning Objectives	आचार्य गुल्लपल्लि श्रीरामकृष्णमूर्तिः
Previous Knowledge to be reminded	संस्कृतसाहित्येतिहासः
Topic Synopsis	महात्मा गान्धी - दक्षिणाफ्रिकां प्रति परिवारेण वासः - कस्तूरिबा गान्धेः अनारोग्यं - वैद्यानां सूचना - मद्यपान - मांसाहार स्वीकरणम् - गान्धेः तिरस्करणम् - आधुनिक युवतीयुवकाः मद्यपानं न स्वीकुर्युः - मांसाहारं च न स्वीकुर्युः। आयुर्वेद औषधीनां द्वारा कस्तूरिबा गान्धेः स्वस्थता।
Examples / Illustrations	आचार्याणां पाण्डित्यप्रतिभा वैशिष्ट्यानि
Additional Inputs	आयुर्वेदवैद्यस्य औन्नत्यम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	आयुर्वेद वैद्यस्य विषये। धन्वन्तरिः ~~आयुर्वेद~~ आयुर्वेद पितामहः
Activity Planned outside the Class room, if any	सुश्रुतः - चरकः - वाग्भटः
Any other Activity	आयुर्वेदम् - भारतीयता

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)
2021- 2022

Name of the Lecturer డాక్టర్ వై. శ్రీలత

Department of తెలుగు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వీయభాష తెలుగు
Name of the Lecturer :	డా॥ పై. శ్రీలత
Course / Group :	III బి.ఎ (HET)
Paper :	VI -
Name of the Topic	బాలవ్యాకరణం - సంజ్ఞా పరిచ్ఛేదం
Hours required	25
Learning Objectives	కావ్యభాషా పరిజ్ఞానం
Previous Knowledge to be reminded	వ్యాకరణ సంజ్ఞలు - పారిభాషిక పదాలు
Topic Synopsis	-సంస్కృత, ప్రాకృత, అందు చూపుల వర్ణాలు -తెలుగు భాషా వర్ణాలు - తత్సమ వర్ణాలు -పరుషములు, సరళములు, స్నిగ్ధములు, అలవర్ణములు, దంత్యచిటులు, -సవర్ణములు, ఉపధ, ద్విత్వము ద్విత పూర్వోత్తరత్వములు, కళలు, బిందువు - పూర్ణ బిందువు, అనుస్వారబిందువు, సాధ్యపూర్ణము, యుకారము వ్యత్యాసాలు - అదస్సైర పదములు, యరలవ - లమ్మిలఘుపదాలు -తత్సమములు, తద్భవములు, దేశ్యములు, గ్రామ్యములు - అరసివేసి ఉపహారంబుల భుజ్యంబు గావింపరిబు
Examples / Illustrations	కావ్యభాషలోని ఉదాహరణలు
Additional Inputs	కావ్యభాష, వాడుక భాష - భేద సాదృశ్యములు
Teaching Aids used	బాల వ్యాకరణం, సంజ్ఞల పట్టిక లు
References cited	బాలవ్యాకరణ ఫుంటూపది వ్యాఖ్యానం
Student Activity Planned after the teaching	సంజ్ఞల వివరణలు వివరించడం
Activity Planned outside the Class room, if any	సూత్ర వ్యాఖ్యానములు రాయించడం
Any other Activity	ఎస్సైన్మెంట్లు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వయంభూ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III బి.ఏ., (HET)
Paper :	సంధి పరిచ్ఛేదం
Name of the Topic	30
Hours required	పీరియడ్ VI
Learning Objectives	అతి, ఇత్వ, ఉత్వ సంధులు, ఆగమ, ఆదేశ, అనుకేరణ సంధులు
Previous Knowledge to be reminded	తెలుగు సంధులు
Topic Synopsis	- ఉత్వసంధి - యడాగమసంధి - అత్వసంధి - ఇత్వసంధి - ఆమ్రేడిత సంధి - ద్వితీయా టకార సంధి - గసడదవాదేశ సంధి - సరళాదేశ సంధి - సవర్ణదీర్ఘ సంధి - దుగాగమం - సుగాగమం - టుగాగమం - తుగాగమం - పుంపొదేశం - పొలాదులు - అసంధులు కొన్ని - అలాగమం - పడ్వాదులు - వీటిపేర్లలోపం - అనుకేరణ సంధులు
Examples / Illustrations	వాడుకలో పదాలలో సంధి రూపాలు
Additional Inputs	తెలుగు సంస్కృత సంధుల భేదసామ్యాలు
Teaching Aids used	సంధి పరిచ్ఛేదం, సంధి రూపాల పట్టిక
References cited	బాల వ్యాకరణం ఘంటూపది వ్యాఖ్య
Student Activity Planned after the teaching	సంధి రూపాలను గుర్తించడం
Activity Planned outside the Class room, if any	వాడుకలోని ఉదాహరణలను గుర్తించడం
Any other Activity	వ్యాసకేంటు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వయంగా తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III బి.ఎ., (HET)
Paper :	VI
Name of the Topic	అలంకారములు
Hours required	10
Learning Objectives	కవితాపై సౌందర్యకారక విశ్లేషణ
Previous Knowledge to be reminded	అలంకార విశ్లేషణ
Topic Synopsis	- అలంకారములు - వివరణ - అలంకారములు - రకములు - 1) శబ్దాలంకారములు 2) అర్థాలంకారములు - శబ్దాలంకారములు - 1) వృత్త్యనుప్రాస 2) ఛేకానుప్రాస 3) లాటానుప్రాస 4) యమకము 5) ముక్తపదగ్రస్తము - అర్థాలంకారములు - 1) ఉపమ 2) పరిణామ 3) రూపక 4) అపహ్నుతి 5) ఉల్లేఖ 6) ఉత్ప్రేక్ష 7) అతిశయోక్తి 8) దృష్టాంతము 9) నిదర్శన 10) అర్థాంతరన్యాసము 11) స్వభావోక్తి లక్ష్యలక్షణ సమన్వయములు
Examples / Illustrations	వాడుక పదములలోని అలంకారములు - సమన్వయము
Additional Inputs	భారతీయ అలంకార శాస్త్ర వైశిష్ట్యం
Teaching Aids used	అలంకార శాస్త్రం - అలంకార పీఠిక
References cited	కావ్యగ్రంథములు
Student Activity Planned after the teaching	వాడుకలోని పదములలో అలంకారముల గుర్తింపు
Activity Planned outside the Class room, if any	పాఠ్యభాగములలోని అలంకార ప్రయోగముల గుర్తింపు
Any other Activity	స్టడీ మెటీరియల్

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III B.A. (HET)
Paper :	VI
Name of the Topic	ఛందస్సు
Hours required	10
Learning Objectives	పద్యరచనలో మెళకువలు
Previous Knowledge to be reminded	గురు లఘువులు విసుపుమాలు
Topic Synopsis	పద్యలక్షణాములు, ఛందస్సు, గణాములు - ఇంకిటి, కంరము, మూడు, నాలుగు అక్షరగణాములు గణాములు - ఇందు, సూర్యగణాములు పద్యరీతులు - రక్తములు - వృత్తములు, జాతులు, ఉపజాతులు వృత్తపద్యరీతులు - ఉత్పలమాల, చంపకమాల, శార్దూలం, మత్తేభము జాతులు - కందము ఉపజాతులు - సీసము, తేటగీతి, ఆటవెలది లక్షణ లక్ష్య సమన్వయములు
Examples / Illustrations	సీతకు పద్యరీతులు - లక్షణాములు
Additional Inputs	పద్యనాటకములు - కానమోహనకథ
Teaching Aids used	ఛందస్సూత్రము - పద్యలక్షణాములు - పట్టికలు
References cited	కావ్యాలోకము
Student Activity Planned after the teaching	వారిచే పదములు - ఛందస్సు గుర్తింపు
Activity Planned outside the Class room, if any	పాఠ్యాంశాల పద్యరీతులలో ఛందస్సును గుర్తించడం, పద్యరచన
Any other Activity	వ్యాసరచన

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు	
Name of the Lecturer :	డా॥ వై. శ్రీలత	
Course / Group :	III బి.ఎ.: (HET)	
Paper :	VI	
Name of the Topic	యతులు	ప్రాసలు
Hours required	4	4
Learning Objectives	పద్యలక్షణాంశములు తెలుసుకోవడం	ప్రాస నియమాలను, పద్యరచన
Previous Knowledge to be reminded	పద్యభేదములలో యతి	పద్యభేదములో ప్రాస స్థానము
Topic Synopsis	- యతి - వివరణ - లక్షణనిర్వచన - యతిస్థానము - వివరణ, లక్షణనిర్వచన నియమములు -యతులు - సవర్ణయతి - గూఢ సవర్ణయతి - అనుస్వారాంత సంధి - వర్ణయతి - అనుస్వారాంత యతి - యుపవళి - యుత్పత్తిసామ్యవళి	ప్రాస - వివరణ, నియమాలు -ప్రాసలు - రకములు ద్విప్రాస త్రిప్రాస చతుష్ప్రాస సమప్రాస దుపరుల ప్రాస అంత్యప్రాస
Examples / Illustrations	పాతెంతలలో యతులు	పాటలలోని ప్రాసలు
Additional Inputs	యతులు - వాడుక - అన్వయమయ్యే పదాలు - యతి నియమాలు	అన్వయమయ్యే పదాలు - ప్రాసలు
Teaching Aids used	యతుల పట్టిక	ప్రాసల పట్టిక
References cited	కావ్యలక్షణము	కావ్యలక్షణము
Student Activity Planned after the teaching	వాడుకలో యతులను గుర్తించడం	ప్రాస వాడుక - సుద్దింపు
Activity Planned outside the Class room, if any	పదములలో యతిస్థానములు గుర్తించడం పద్యరచన	పద్యములలో ప్రాసల గుర్తింపు పద్యరచన
Any other Activity	వ్యాసకం	వ్యాసకం

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు/స్పోకెన్ తెలుగు
Name of the Lecturer :	డా॥ పి. శ్రీలత
Course / Group :	III బి.వి.-స్పోకెన్ తెలుగు HET
Paper :	సెమిస్టర్ - 5 - పేపర్ - 5
Name of the Topic	మాండలిక విజ్ఞానం
Hours required	10
Learning Objectives	తెలుగు భాష - మాండలిక భేదాలు
Previous Knowledge to be reminded	తెలుగు భాష - చారిత్రక నేపథ్యం - భాషా ప్రాంతాలు
Topic Synopsis	మాండలికాలు - నిర్వచనం రకాలు / భేదాలు : పూర్వ, పశ్చిమ, దక్షిణ మరియు ఉత్తర మండలాలు మాండలికాలు - వర్గీకరణ : 1) సాంస్కృతిక మాండలికం 2) సాహిత్య మాండలికం 3) కుల / వర్గ మాండలికం 4) బోలి మాండలికం - మాండలిక పదకోశాలు - - మాండలికాలు - పరిశోధనావసరాలు
Examples / Illustrations	తెలుగు భాషా చరిత్ర) కావిడి భాషలు
Additional Inputs	ఇతర భాషలు - తెలుగు భాష - మాండలిక భేదాలు
Teaching Aids used	మాండలిక విజ్ఞానానికి సంబంధించిన వివిధ గ్రంథాలు వివిధ తెలుగు సినిమాల్లో తెలిపించే మాండలిక భేదాలు
References cited	తెలుగు భాషా చరిత్ర) - డా॥ పెలమల సీమోన్న
Student Activity Planned after the teaching	వివిధ మాండలిక పదాల - సేకరణ
Activity Planned outside the Class room, if any	మాండలికాల గుర్తింపు
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	సువేత తెలుగు / తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III బి.ఏ HET
Paper :	సెమిస్టర్ V - పేపర్ 5
Name of the Topic	ఆంధ్రులు - తెనుగు - తెలుగు పుట్టు పూర్వోత్తరాలు
Hours required	10
Learning Objectives	తెలుగు భాష పాఠ్యపీఠిక - జాతి, భాష, పాంత వాచకాలు
Previous Knowledge to be reminded	తెలుగు సాహిత్య చరిత్ర -
Topic Synopsis	ఆంధ్రులు, తెనుగు, తెలుగు పుట్టు పూర్వోత్తరాలు ఆంధ్రులు: ఆంధ్రుల శిల్పం పాఠ్యపీఠిక, నాణెం, కాపు లక్షణాలు వీరోత్తమ చారిత్రకాలు, బౌద్ధ విహారాలలో ఆంధ్ర పదప్రయోగం తెనుగు, తెలుగు: తెనుగు, తెలుగు, వ్యుత్పత్తి పదాల పాఠ్యపీఠిక. వివిధ నానార్థాలు. కాపు లక్షణాల విశ్లేషణ. భాషా పరంగా వివిధ యుగాలలో వచ్చిన మార్పుల విశ్లేషణ. పాఠ్యపీఠిక పిండోత్పత్తి విస్తరించిన తెలుగు వాడుక
Examples / Illustrations	తెలుగు సాహిత్య చరిత్ర - డా॥ భాస్కర నన్నయ
Additional Inputs	పాఠ్యపీఠిక నాగరికతలు, రామాయణ, మహాభారత సంధానాలు తెలుగు వారి పుస్తకాలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల, LCD విధానాలు
References cited	తెలుగు సాహిత్య చరిత్ర - ఆచార్య గంటి భానుమతి నిర్వహణలు " - వేలూరి వెంకట రమణయ్య
Student Activity Planned after the teaching	విద్యార్థి పదసృష్టి, పుస్తకోత్పత్తి
Activity Planned outside the Class room, if any	సొంత భాష (తెలుగు)లో చేయు చేయుచున్న మార్పుల విశ్లేషణ
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు – స్నాతక తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA (HET)
Paper :	సెమిస్టర్ - 5 , పేపర్ - 5
Name of the Topic	భాషతత్వశాస్త్రంలోని భాషా శబ్దాలు
Hours required	10
Learning Objectives	భాషతత్వశాస్త్రంలో వాక్య భాషలు - దావిడ భాషలు - పరిశీలన
Previous Knowledge to be reminded	పేపంచ భాషలు - భాషలోని భాషా శబ్దాలు
Topic Synopsis	భాష : నిర్వచనం , స్వరూపం స్వభావాలు భాషా వాదాలు : 1) దైవదత్త వాదం 2) బౌఫౌ వాదం 3) పూంపూం వాదం 4) డింగ్- డాంగ్ వాదం 5) యోహో వాదం 6) టూటూ వాదం 7) పింగ్ పాంగ్ వాదం 8) స్వీకృత సిద్ధి వాదం భాషతత్వశాస్త్రంలోని భాషా శబ్దాలు :- 1) ఇండో ఆర్యన్ భాషా శబ్దాలు 2) ఆస్ట్రో ఏషియాటిక్ భాషా శబ్దాలు 3) టిబెటో బర్మన్ భాషా శబ్దాలు 4) ఉత్తర, మధ్య, దక్షిణ దావిడ భాషలు సమాన లక్షణాలు
Examples / Illustrations	దావిడ భాషలు, వాక్య భాషలు లక్షణాలు - ఉదాహరణలు
Additional Inputs	దావిడ భాషల్లో తెలుగు భాష ప్రత్యేకతలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	ఆచార్య బద్దిరాజు సౌష్ఠమూర్తి గారి గ్రంథాలు ఆచార్య P.S. సుబ్రహ్మణ్యం గారి గ్రంథాలు
Student Activity Planned after the teaching	దావిడ భాషలు: సమాన లక్షణాలు
Activity Planned outside the Class room, if any	దావిడ భాషా పదాల సేకరణ
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - ఇతర భాషల తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA (HET)
Paper :	సెమిస్టర్ 5 - పేపర్ - 5
Name of the Topic	ద్రావిడ భాషల్లో తెలుగుకు గల స్థానం
Hours required	10
Learning Objectives	ద్రావిడ భాషా లక్షణాలు - తెలుగు భాషా పరిణామక్రమాలు
Previous Knowledge to be reminded	తెలుగు భాష - చారిత్రక నేపథ్యం , తెలుగు వాక్యరకాలు, భాషా భాగాలు
Topic Synopsis	ద్రావిడ భాషల వర్గీకరణ : 1) ఉత్తర ద్రావిడ భాషలు 2) మధ్య ద్రావిడ భాషలు 3) దక్షిణ ద్రావిడ భాషలు ద్రావిడ భాషల సమాన లక్షణాలు ద్రావిడ భాషల్లో తెలుగు భాష పరిణామక్రమాలు మూల ద్రావిడ భాషా పదాలు
Examples / Illustrations	ద్రావిడ భాషలు - భాషా భాగాలు
Additional Inputs	ద్రావిడ భాషలు - సాహిత్యం
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	ద్రావిడ భాషలు - లక్షణాలు - బాబూరావు భద్రిరాజు కృష్ణమూర్తి బాబూరావు P.S. సుబ్బారావు, బాబూరావు బాలాంత్రపు వేంకటరావు
Student Activity Planned after the teaching	ద్రావిడ భాషల్లో క్రియా పదాలు రాయడం సంస్కృత వాచకాలు రాయడం
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు
Name of the Lecturer :	డా॥ పై. శ్రీలత
Course / Group :	BA, Bcom, Bsc గుంపులు ప్రథమ సమిస్టర్-3
Paper :	ప్రథమనాతేతర తెలుగు - ఉపకల తెలుగు - ,
Name of the Topic	యూనిట్ 1 - వ్యక్తిత్వానికి సంబంధించిన వ్యాకరణాంశాలు
Hours required	10+5
Learning Objectives	ఆధునిక భాషా శాస్త్ర సిద్ధాంతాలు, భాషా లక్షణాలు, ప్రయోజనాలు
Previous Knowledge to be reminded	తెలుగు భాషా పుట్టు పూర్వోత్తరాలు, సాహిత్య వికాసం
Topic Synopsis	వ్యక్తిత్వానికి సంబంధించిన వ్యాకరణాంశాలు భాష - నిర్వచించడం, ప్రాథమికాంశాలు, లక్షణాలు, ఆవశ్యకత మరియు ప్రయోజనాలు వర్ణం - పదం - వాక్యం: వర్ణం - పదం, వాక్యం నిర్వచించడం వాక్య భేదాలు - సామాన్య, సంయుక్త, సంశ్లిష్ట వాక్యాలు భాషా నిర్మాణంలో వర్ణం - పదం - వాక్యం ప్రాముఖ్యత. వాక్య లక్షణాలు, భేదాలు, భాషా ప్రయోజనాలు భాషా శాస్త్ర సిద్ధాంతాలు
Examples / Illustrations	పవర్ పాయింట్ ద్వారా భాషా సిద్ధాంతాలపై పరిశీలనలు
Additional Inputs	ఆధునిక భాషా శాస్త్ర సిద్ధాంతాలు. ప్రాంతీయ భాషలు ప్రాధాన్యత
Teaching Aids used	పాఠ్యపుస్తకం, పల్లబల్లా, డిబేట్‌లు తరగతి
References cited	భాషా PS సుబ్బారెడ్డి, భాషా భద్రిరాజు కృష్ణమూర్తి గార్ల గ్రంథాలు
Student Activity Planned after the teaching	వాక్య వివిధ వాక్య భేదాలకు సంబంధించిన ఉదాహరణలు - సేకరణ
Activity Planned outside the Class room, if any	ఇంటర్నెట్ పరిశీలన, అసైన్‌మెంట్లు
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	BA, BCom, BSc మొదటి సెమిస్టర్ - 3
Paper :	స్వీకరణాత్మక రచన - కనకతో తెలుగు
Name of the Topic	యూనిట్ III - అనువాద రచన
Hours required	12
Learning Objectives	అనువాద రంగం పరిచయం, పాఠ్యాంశాలు, ఉద్యోగావకాశాలు
Previous Knowledge to be reminded	తెలుగు భాషలో అనువాదం పాఠ్యాంశం
Topic Synopsis	అనువాద రచన : నిర్వచనం, అనువాద పద్ధతులు, పాఠ్యాంశాల నిర్వచనాలు, తెలుగు పాఠ్యాంశంలో అనువాద ప్రక్రియ, మూలభాష, లక్ష్యభాష అనువాద సమస్యలు : భాషాపరిచయం, భాషా - సాంస్కృతిక సమస్యలు, పరిష్కారాలు అనువాదంలో పాటించాల్సిన పద్ధతులు అనువాదం అభ్యాసం - ఆంగ్లం నుండి తెలుగుకు తెలుగు నుండి ఆంగ్లానికి అనువాద ప్రయోజనాలు
Examples / Illustrations	వివిధ అనువాద గ్రంథాలు - పరిచయం
Additional Inputs	అనువాద రంగంలో ఉద్యోగావకాశాలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల, కంటెంట్ తెరగతి
References cited	తెలుగు శుశ్రూషణం - డా॥ బూదరాజు రాధాకృష్ణ
Student Activity Planned after the teaching	వివిధ అనువాద రచనల సమీక్ష
Activity Planned outside the Class room, if any	వివిధ అనువాద రచనల సేకరణ
Any other Activity	ఎసైన్‌మెంట్, విద్యార్థి పాఠ్యాంశం

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	BA, B.Com, BSc గుంపులు – సమిష్టర్ – 3
Paper :	స్పృటనాత్మకత రచన – ఉన్నత తెలుగు
Name of the Topic	యూనిట్ IV – మాధ్యమాలకు రచన – 1
Hours required	12
Learning Objectives	పత్రికా రచన
Previous Knowledge to be reminded	పత్రికల ఆవిర్భావం – పత్రికల పాత్ర
Topic Synopsis	మాధ్యమాలకు రచన – 1 :– (ముద్రణా మాధ్యమం / పింట్ మీడియా) 1) ముద్రణా మాధ్యమం (అచ్చు మాధ్యమం) పరిచయం – పరిధి – విశ్లేషణ 2) వివిధ కాలాల పత్రికలు – పరిశీలన పత్రికా భాష – శైలి – వైవిధ్యం 3) పత్రికా రచన – వార్తా రచన – సంపాదకీయాలు సమీక్షలు – అభిప్రాయం
Examples / Illustrations	వివిధ పత్రికల ఉదాహరణలు
Additional Inputs	పత్రికా రచన – మెళకువలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల, డిజిటల్ తరగతి, వివిధ పత్రికలు
References cited	పుస్తకాలు – గ్రంథాలు – అంతర్జాలం – రాష్ట్రస్థాయి
Student Activity Planned after the teaching	పత్రికల వార్తల విశ్లేషణ, పత్రికల పఠనం
Activity Planned outside the Class room, if any	పత్రికలని సేకరించడం
Any other Activity	మాటర్‌తో పరిచయం, విద్యార్థి సదస్సు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు
Name of the Lecturer :	డా॥ పై. శ్రీలత
Course / Group :	BA, Bcom, BSc సూపులు - సెమిస్టర్ - 3
Paper :	స్వతంత్రోత్తర కాలపు కవిత్వం - ఐచ్ఛిక తెలుగు
Name of the Topic	యూనిట్ V - మోడర్న్ పోయెట్రీ కవిత్వం - 2
Hours required	12
Learning Objectives	యోగాకరింగ్ మెళకువలు, రేడియో ప్రసంగాల పట్ల అవగాహన
Previous Knowledge to be reminded	స్వతంత్రోత్తర కాలం - పూర్వాపరాలు - అవసరాలు
Topic Synopsis	మోడర్న్ పోయెట్రీ కవిత్వం 2 (పునశ్చరణ మోడర్న్ పోయెట్రీ, ఎలక్ట్రానిక్ మీడియా) పునశ్చరణ మోడర్న్ పోయెట్రీ సాంప్రదాయం - శకాలు, విస్తృత ప్రయోగాలు త్రివేణి మోడర్న్ పోయెట్రీ - కవిత్వం, రేడియో ప్రసంగాలు రేడియో నాటికలు, ప్రసార సమాచారం - విశ్లేషణ, బృందగీతాల్ప్రదర్శనం: ఐలయ్యగారి కవిత్వం - వాస్తవికత యోగాకరింగ్ - మెళకువలు
Examples / Illustrations	వివిధ మోడర్న్ పోయెట్రీ కవిత్వం సంబంధించిన ఉదాహరణలు
Additional Inputs	వివిధ మోడర్న్ పోయెట్రీ కవులు ఉద్యోగావకాశాలు
Teaching Aids used	నల్లబల్ల, పాఠ్యపుస్తకం, వివిధ వీడియోలు, డిక్టేటర్ తరగతి
References cited	భుర్రకథలు గ్రంథాలు, ఐలయ్యగారి చేర్యాల కావ్యత్రయం ఉత్తమ యోగాకరింగ్ వీడియోలు,
Student Activity Planned after the teaching	యోగాకరింగ్ - శిక్షణ - మెళకువలు
Activity Planned outside the Class room, if any	వ్యాసరచనలు
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు – స్పెషల్ తెలుగు
Name of the Lecturer :	డాక్టర్ వై. శ్రీలత
Course / Group :	III BA (HET)
Paper :	VII (బి) – ఆధునిక తెలుగు భాషా నిర్మాణం
Name of the Topic	ఆధునిక తెలుగు భాష
Hours required	15
Learning Objectives	ఆధునిక భాషా వేత్తల దృష్టిలో తెలుగు భాషా నిర్మాణం
Previous Knowledge to be reminded	బాల, ప్రౌఢ వ్యాకరణాలు
Topic Synopsis	1) సంధి నిర్మాణం → లగమ, ఆదేశ సంధులు 2) సమాస నిర్మాణం → కర్మధారయ, తత్పురుష, ద్వంద్వ, ద్విగు, బహువ్రీహి సమాసాలు 3) లింగ నిర్మాణం → స్త్రీ, పుం, నపుంసక 4) వచన నిర్మాణం → ఏక, ద్వి, బహు 5) విభక్తి నిర్మాణం → ప్రథమ, ద్వితీయ, తృతీయ, చతుర్థి, పంచమి, షష్ఠి, సప్తమి, సంబోధన
Examples / Illustrations	వాడుక భాషా ప్రయోగాలు
Additional Inputs	ఆధునిక భాష, వర్తమాన భాషోదాహరణలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల, రిఫరెన్సు పుస్తకాలు
References cited	బాల, ప్రౌఢ వ్యాకరణ వ్యవహారికాలు, అచ్చుతో వెలువడిన సిద్ధాన్న గారి పుస్తకాలు, చేకూరి రామారావు గారి రచనలు
Student Activity Planned after the teaching	ఆధునిక భాషా వేత్తలు చెప్పిన సూత్రాలను తెలిసే ప్రస్తుత వ్యవహారికంలో పదాల నిర్మాణం
Activity Planned outside the Class room, if any	ఎస్సైన్మెంట్స్, పదాల నిర్మాణం
Any other Activity	ఎస్సైన్మెంట్స్

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - ద్వితీయ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	VII B ఆధునిక తెలుగు భాషా నిర్మాణం
Name of the Topic	ఆధునిక తెలుగు భాషా నిర్మాణం - క్రియా నిర్మాణం (క్లాస్ 1)
Hours required	15
Learning Objectives	ఆధునిక తెలుగు భాషలో - క్రియలు - వాటి నిర్మాణం - రకాలు
Previous Knowledge to be reminded	బాల వ్యాకరణం, ప్రౌఢ వ్యాకరణం, భాషా భాగములు
Topic Synopsis	1) క్రియ 2) అకరకత - సకరకత క్రియా భేదాలు 3) ప్రేరణార్థక క్రియలు 4) సమాపక, అసమాపక క్రియలు 5) పాక్షపదిక క్రియ 6) తెలుగు భాషలో క్రియా ధాతువు
Examples / Illustrations	వివిధ కావ్యోదాహరణలు, వ్యావహారిక భాషోదాహరణలు
Additional Inputs	వ్యావహారిక భాషోదాహరణలు
Teaching Aids used	వైట్‌బోర్డ్ & మార్కర్, పల్లా బల్లా
References cited	భాషా నిర్మాణాపై విమర్శకుల, భాషావేత్తల గ్రంథాలు తెలుగు వాక్యం - ఎలుగుల్ చేకూరి రమారావు
Student Activity Planned after the teaching	వివిధ రకాల క్రియా వాక్యాలు - సేకరణ
Activity Planned outside the Class room, if any	స్టడీ పాఠ్యాంశం - క్రియా పదాల సేకరణ
Any other Activity	ఎస్సైన్‌మెంట్

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	VII 'B' ఆధునిక తెలుగు భాషా నిర్మాణం (క్లాస్ టీచర్)
Name of the Topic	తెలుగు వాక్య నిర్మాణం
Hours required	15
Learning Objectives	ఆధునిక తెలుగు భాషలో వాక్య భేదాలు
Previous Knowledge to be reminded	పాఠ్యాంశ కావ్య భాష, పొఠ్యం వాక్యకరణం
Topic Synopsis	తెలుగు వాక్య నిర్మాణం 1) వాక్య భేదాలు → రూపాన్ని బట్టి, అర్థాన్ని బట్టి, క్రియా ప్రాధాన్యాన్ని బట్టి → సామాన్య, సంశ్లిష్ట, సంయుక్త వాక్యాలు → క్రియా రహిత, క్రియా సహిత వాక్యాలు → ఉత్తర్దర్శక వాక్యాలు → కర్తరి, కర్మరి ప్రయోగాలు → పత్రికా వార్తలు → ప్రథమ పుటకథ, లోపలి పుటకథ, కల పుటకథ → సాంకేతికరణం
Examples / Illustrations	వ్యావహారిక, పాఠ్య కావ్య దృష్టాంతాలు
Additional Inputs	వర్తమాన భాషా దృష్టాంతాలు
Teaching Aids used	పవర్ పాయింట్ ప్రజెంటేషన్, నల్లబల్ల
References cited	చేకూరి రామారావు గారి గ్రంథాలు భాషా శాస్త్రవేత్తల సమీక్షా గ్రంథాలు
Student Activity Planned after the teaching	వివిధ వాక్య భేదాల గుర్తింపు
Activity Planned outside the Class room, if any	వివిధ రకాల వాక్యాలు - ఉదాహరణల సేకరణ
Any other Activity	వ్యాసరచన

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగుస్వయంభూతెలుగు సాంఘీకశాస్త్రం
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	VII 'B' ఆధునిక తెలుగు భాషా నిర్మాణం (క్లస్టర్)
Name of the Topic	తెలుగు భాష ఆధునికీకరణ
Hours required	15
Learning Objectives	తెలుగు భాష ఆధునికీకరణ ఆవశ్యకత, సామాజిక భాషావైశిష్ట్యం
Previous Knowledge to be reminded	తెలుగు భాష - నాడు - నేడు - భాషలో వచ్చిన మార్పులు
Topic Synopsis	తెలుగుభాష ఆధునికీకరణ 1) తెలుగు భాష ఆధునికీకరణకు చేపట్టాల్సిన చర్యలు సమస్యలు 2) తెలుగు భాష సామాజికీకరణ ఆవశ్యకత సమస్యలు 3) తెలుగు భాష సామాజిక భాషా వైశిష్ట్యం.
Examples / Illustrations	సామాజిక భాష, పరిశీలనా పద్ధతులు
Additional Inputs	ఆధునిక తెలుగు భాషలో వాక్యనిర్మాణం, సామాజిక భాష
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	శబ్దార్థ చంద్రికలాంటి క్లాస్టమోరీ, భాషా చేకూరి రామారావు గారి గ్రంథాలు
Student Activity Planned after the teaching	సామాజిక భాష ఆవశ్యకత - విద్యార్థుల దృష్టికోణం
Activity Planned outside the Class room, if any	(సామాజిక భాష - లక్షణాలు - చిన్నమాటల పనులు భాషను కనిపెంచడంలో విద్యార్థుల పాత్ర)
Any other Activity	ఎన్నికేంటు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - సంస్కృతం తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	అలంకార శాస్త్రం (థియరీ - పేపర్)
Name of the Topic	కావ్యం - కవి
Hours required	15
Learning Objectives	కావ్య నిర్వచనాలు - భారతీయ అలంకారికుల దృక్పథం
Previous Knowledge to be reminded	అలంకార శాస్త్రం
Topic Synopsis	1) కవి - కావ్యం - ప్రాచ్య, పాశ్చాత్య అలంకారికుల నిర్వచనాలు 2) భారతీయ అలంకారికులు - భరతుడు, భామహుడు, దండి, పాశ్చాత్య అలంకారికులు - వామనుడు, మమ్మటుడు, విశ్వనాథుడు, జగన్నాథ పండితరాయలు, పద్మనవర్, 3) కావ్య ప్రయోజనాలు :- అలంకారికుల అభిప్రాయాలు పాశ్చాత్య 4) కావ్య భేదాలు :- పద్య, గద్య, చంపూ కావ్యాలు నాటక సాహిత్యం నిబద్ధ, అనిబద్ధ కావ్యాలు అరిస్టాటిల్ 5) కావ్యహేతువులు :- ప్రతిభ, వ్యుత్పత్తి, అభ్యాసాలు - పైటీ
Examples / Illustrations	వివిధ కావ్యోదాహరణలు, అలంకార శాస్త్ర గ్రంథాలు
Additional Inputs	అలంకారికుల నిర్వచనాలు - జీరాక్స్ రూపంలో
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	కావ్యాలంకార సంగ్రహం, అలంకార శాస్త్ర గ్రంథాలు
Student Activity Planned after the teaching	కావ్య నిర్వచనాలు - ప్రాచ్య, పాశ్చాత్య అలంకారికుల దృక్పథం
Activity Planned outside the Class room, if any	సితేతం - మిస్తేతం - పదాల-సెకరణ
Any other Activity	ఎస్సైనేంటు, అంతర్గత పరీక్ష

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - ప్రాచీన తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	అలంకార శాస్త్రం - ఎలక్టివ్ పేపర్
Name of the Topic	రసం - రస సిద్ధాంతం
Hours required	15
Learning Objectives	నవరసాలు - వివిధ కావ్యోదాహరణలు
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) రసం - వివిధ అలంకారికుల నిర్వచనాలు రస సిద్ధాంతం - భరతుడు - నాట్యశాస్త్రం 2) రసం ఎవరి ముందు ఉంటుంది? - వివిధ వాదాలు 3) రస నిష్పత్తి వాదాలు 4) రస సంఖ్య 5) రస రూపం 6) రసాభాస
Examples / Illustrations	వివిధ కావ్యోదాహరణలు
Additional Inputs	అలంకార శాస్త్ర గ్రంథాలు, అభినవ కావ్యోదాహరణలు, చలన చిత్రాలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	వివిధ చలన చిత్ర సమీక్షలు, నటకులు
Student Activity Planned after the teaching	నవరసాలకు సంబంధించిన చలన చిత్ర సమీక్షల వివరణ
Activity Planned outside the Class room, if any	చలన చిత్రాల్లో నవరసాలు - ఉదాహరణలు సేకరణ
Any other Activity	ఎన్సైక్లోపీడియా, స్టడీ మెటీరియల్

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - సృజనాత్మక తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	అలంకార శాస్త్రం (ఎలక్టివ్ పేపర్)
Name of the Topic	ధ్వని - ధ్వని సిద్ధాంతం
Hours required	15
Learning Objectives	కావ్యంలో ధ్వని ప్రాధాన్యత
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) ధ్వని - వివిధ అలంకారికుల నిర్వచనాలు ధ్వని సిద్ధాంతం - ఆనంద వర్ధనుడు 2) ధ్వని భేదాలు (కావ్యంలో) 1) అభిధ 2) లక్షణ 3) వ్యంజన
Examples / Illustrations	ఉత్తమ ధ్వని కావ్యాలు
Additional Inputs	ప్రభునిత రచనలలో ధ్వని ప్రాధాన్యం
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల - కవితలు
References cited	వివిధ కావ్యాలు, కవిత్వాలు (ధ్వని ప్రధానమైన)
Student Activity Planned after the teaching	పరిశీలనా రచనల విశ్లేషణ
Activity Planned outside the Class room, if any	ధ్వని కావ్యాల సేకరణ
Any other Activity	అసైన్మెంట్, అంతర్గత పరీక్ష

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA HET
Paper :	అలంకార శాస్త్రం - ఎలక్టివ్ - పేపర్
Name of the Topic	కళలు - లలిత కళలు
Hours required	15
Learning Objectives	లలిత కళల యొక్క ప్రాధాన్యం - నిత్య జీవితంలో వాటి అవసరత
Previous Knowledge to be reminded	తెలుగు సాహిత్యంలో వివిధ పద్యాలు, లలిత కళలు
Topic Synopsis	1) కళలు - ట్యూనీ - స్క్రీన్ కాంప్లిమెంటరీ కళలు 2) లలిత కళలన్నీ కలిపిన స్థానం 3) నాటకం 4) నవల 5) కథానిక 6) వ్యాసం
Examples / Illustrations	వివిధ కాంప్లిమెంటరీ ఉదాహరణలు
Additional Inputs	కళలు - ప్రాచ్య, పాశ్చాత్యుల కృషి - భారతీయ కళలు
Teaching Aids used	పాఠ్యపుస్తకం, నిఘంటువు
References cited	ఉదాహరణ పద్యాలకు సంబంధించిన పుస్తకాలు
Student Activity Planned after the teaching	కొన్ని కథానికల విశ్లేషణ - సరదాలేం - దిద్దుబాటు పాలసముద్ర పట్టెలాలు - దాలుబాన
Activity Planned outside the Class room, if any	విద్యార్థులకు నిచ్చిన నవల విశ్లేషణ
Any other Activity	అసైన్‌మెంట్, అంతర్గత పరీక్ష

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA HET - Sem IV
Paper :	ఆధునిక తెలుగు సాహిత్య చరిత్ర)
Name of the Topic	ఆధునిక కవిత్వం - ఆవిర్భావ వికాసాలు - యూనిట్ 1
Hours required	10
Learning Objectives	ఆంగ్ల భాషా పరిభావన వల్ల ఆధునిక తెలుగు సాహిత్యంలోకి ప్రవేశించిన కవితా పద్ధతులు - ఆధునిక తెలుగు సాహిత్యం స్వీకరించిన స్వీకారాలు
Previous Knowledge to be reminded	పాఠ్యపుస్తకం, ఆధునిక తెలుగు సాహిత్యం - పేపర్
Topic Synopsis	1) ఆధునిక కవిత్వలక్షణాలు 2) ఆధునిక కవిత్వంలో ఉద్యమాలు, వాదాలు, ధోరణులు 3) ఆధునిక కవిత్వ ప్రక్రియలు 4) ఆధునిక తెలుగు సాహిత్య దీర్ఘ రూపాలు - వీరేశలింగం పంతులు గిడుగు రామ్మూర్తి పంతులు గురజాడ అప్పారావు
Examples / Illustrations	ఆధునిక కావ్యోదాహరణలు
Additional Inputs	ఆధునిక తెలుగు సాహిత్యాన్ని ప్రభావితం చేసిన కవుల వివరణ
Teaching Aids used	పాఠ్యపుస్తకం, సల్లాబస్, వీడియోలు
References cited	తెలుగు సాహిత్య చరిత్ర - డా॥ వి. నా. రావు తెలుగు సాహిత్య సమీక్ష (రెండవ సంపుటి) - ఆచార్య బి. రామరాజు
Student Activity Planned after the teaching	ఆధునిక కావ్యాలకు లక్షణ సూత్రాలను విద్యార్థులచే చదివించడం
Activity Planned outside the Class room, if any	ఆధునిక తెలుగు సాహిత్యాన్ని ప్రభావితం చేసిన రచనలను విద్యార్థుల చేత పరిశీలింపజేయడం
Any other Activity	ఏమీలేదు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వాతంత్ర్యోద్యమ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA - HET - Sem IV
Paper :	ఆధునిక తెలుగు సాహిత్య చరిత్ర
Name of the Topic	యూనిట్ II - భావ కవిత్వం
Hours required	10
Learning Objectives	ఆధునిక తెలుగు సాహిత్యంలో పరిచయించే సామాజిక మార్పులు
Previous Knowledge to be reminded	ఆధునిక కవిత్వ పుక్రియలు
Topic Synopsis	1) భావ కవిత్వం - నిర్వచనాలు, లక్షణాలు 2) భావ కవితా శాఖలు 3) భావ కవులను మార్గదర్శనం :- రాయప్రోలు సుబ్బారావు 4) భావ కవితా విశ్లేషణలు - దేవులపల్లి కృష్ణశాస్త్రి 5) పరిసర్వ భావకవులు, కృతులు- పరిచయం
Examples / Illustrations	భావకవుల కవిత్వం, సినీగీతాలు
Additional Inputs	వివిధ భావకవుల జీవిత విశేషాలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	తెలుగు కవిత్వ పీఠికలు - సం॥ లవుల పుంటుల
Student Activity Planned after the teaching	నిచ్చిన కవితల గురించి విద్యార్థుల స్పందన
Activity Planned outside the Class room, if any	విద్యార్థులు నిచ్చిన కవితలను అనేకంగా ఎంచుకొని వ్యక్తిగత పాఠాన్ని తయారుచేయడం
Any other Activity	స్టడీ పాఠాలు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA - HET - Sem IV
Paper :	ఆధునిక తెలుగు సాహిత్య చరిత్ర
Name of the Topic	యూనిట్ III - అభ్యుదయ, విప్లవ కవిత్వాలు
Hours required	8
Learning Objectives	ఆధునిక సాంఘిక పరిస్థితులు - సమాజంపై సాహిత్య ప్రభావం
Previous Knowledge to be reminded	ఆధునిక కవిత్వ పరిస్థితులు
Topic Synopsis	1) అభ్యుదయ కవిత్వం :- నిర్వచనం, అంతర్జాతీయ పరిణామాలు నేపథ్యం, మార్క్సిజం ప్రభావం 2) శ్రీశ్రీ మహాప్రస్థానం :- ప్రసిద్ధ అభ్యుదయ కవులు కృతులు - సమీక్ష 3) తెలంగాణా పోరాట కవిత్వం, విప్లవ కవిత్వం
Examples / Illustrations	అభ్యుదయ కవితాఖండికలు
Additional Inputs	తెలంగాణా పోరాట కవిత్వ నేపథ్యం
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	చారిత్రక మహాభిక నేపథ్యంలో తెలుగు సాహిత్య చరిత్ర - ఆచార్య కేసిరాజు సుబ్బలక్ష్మి
Student Activity Planned after the teaching	ప్రసిద్ధ రచనలు - రచయితలు - విద్యార్థులచే సమీక్ష
Activity Planned outside the Class room, if any	ప్రసిద్ధ రచనల వ్యాఖ్యలు
Any other Activity	క్విజ్, వ్యాసరచన

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA – HET – Sem IV
Paper :	ఆధునిక తెలుగు సాహిత్య చరిత్ర
Name of the Topic	యూనిట్ 5 - సమకాలీన ఆధునిక కవిత్వ ధోరణులు
Hours required	8
Learning Objectives	సమకాలీన ఆధునిక ధోరణుల అవగాహన, అస్తిత్వవాదాల పట్ల దృష్టి
Previous Knowledge to be reminded	ఆధునిక తెలుగు సాహిత్యంలో వాదాలు, ధోరణులు, ఉద్యమాలు
Topic Synopsis	1) స్త్రీవాద కవిత్వం - నేపథ్యం, లక్షణాంశాలు - వస్తువైవిధ్యం 2) ప్రసిద్ధ స్త్రీవాద కవయిత్రులు - రచనలు 3) దళిత వాదం - మైనార్టీ వాదం, ప్రాంతీయ వాదం
Examples / Illustrations	స్త్రీవాద, ప్రాంతీయ వాద కవిత్వోదాహరణలు
Additional Inputs	వివిధ వాదాలకు సంబంధించిన వెబ్‌లు, రచయితల పరిచయాలు
Teaching Aids used	పాఠ్యపుస్తకం, స్లిప్పులు, వీడియోలు
References cited	ఆధునిక తెలుగు సాహిత్యంలో విభిన్న ధోరణులు - కె.కె. రంగనాథాచార్యులు
Student Activity Planned after the teaching	తెలంగాణా సాయుధ పోరాట నేపథ్యాన్ని చారిత్రక కోణంలో పరిశీలించుట
Activity Planned outside the Class room, if any	సమకాలీన, అస్తిత్వవాద ఉద్యమాలను పత్రికల్లో పరిశీలించుట
Any other Activity	వ్యాసరచన పోటీలు, స్టడీ పాఠాలు

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వయంభూ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	III BA (HET) - Sem IV
Paper :	తెలుగు సాహిత్య చరిత్ర
Name of the Topic	యూనిట్ I - కళలు - కావ్యరీతులు / కవిత్వరీతులు
Hours required	8
Learning Objectives	సాహిత్యం, కళల పుట్టుక, కళల రకాలు, కవిత్వం మొదలైన పరిచయం
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) కళ - ఉత్పత్తి - విభిన్న వాదాలు 2) దృశ్య, శ్రవ్య కళలు 3) లలిత కళలు - లలిత కళల్లో కవిత్వ స్థానం 4) కావ్యం - కవి 5) కావ్య నిర్వచనాలు - ప్రాచీన, పాశ్చాత్య 6) కావ్యం / కవిత్వం - పాశ్చాత్య, ఆధునిక తెలుగు కవుల అభిప్రాయాలు
Examples / Illustrations	భూతద్దేయం, పాశ్చాత్యాలంకారికుల రచనలు
Additional Inputs	పాశ్చాత్య సంస్కృత అలంకారిక గ్రంథాలు
Teaching Aids used	పాఠ్యపుస్తకం, నీల్ బుల్
References cited	సాహిత్య సిద్ధాంతాలు - ఆచార్య దివాకర్ల వేంకటావధాని సాహిత్య శిల్ప సమీక్ష - ఆచార్య పింగళి లక్ష్మీకాంతం.
Student Activity Planned after the teaching	పాశ్చాత్య సంస్కృత అలంకారిక గ్రంథాల పరిశీలన విద్యార్థుల చే చేయించడం.
Activity Planned outside the Class room, if any	పుస్తక విమర్శా గ్రంథాలను విద్యార్థులచే పరిశీలింపచేయడం,
Any other Activity	విద్యార్థి సదస్సు

K.V. Sudha Sri
29/08/22

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్పెషల్ తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA - HET - Sem IV
Paper :	తెలుగు సాహిత్య చరిత్ర
Name of the Topic	యూనిట్ II - కావ్యనిర్మాతృలక్షణాలు, కావ్యప్రయోజనాలు, కావ్యభేదాలు
Hours required	8
Learning Objectives	కావ్యస్వరూపాన్ని, ప్రాచీన, ఆధునిక కవుల అభిప్రాయాలను అవగాహన చేసుకుంటారు.
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) కావ్యనిర్మాతృలక్షణాలు - ప్రతిభ, వ్యుత్పత్తి, అభ్యాసము సవివరంగా విశ్లేషణ 2) కావ్యప్రయోజనాలు - ప్రాచీన, ఆధునిక దృక్పథాలు 3) కావ్యభేదాలు - 1) పద్య, గద్య, చంపూ కావ్యాలు 2) నిబద్ధ, అనిబద్ధ కావ్యాలు
Examples / Illustrations	ప్రసిద్ధ కావ్యోదాహరణలు
Additional Inputs	వివిధ రకాల కావ్యాల పరిచయం
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	కావ్యాలోకము - సింహావలోకనము మాచిరాజు
Student Activity Planned after the teaching	విద్యార్థులచే ఒక అంశంపై వివరణ చేయించడం
Activity Planned outside the Class room, if any	ఆధునికులు అలంకారిక శాస్త్ర కావ్య లక్షణాలను ప్రాచీన కావ్యాలకు సమన్వయించడం
Any other Activity	వ్యాసరచన

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్నాతకోత్తర తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA HET - Sem IV
Paper :	తెలుగు సాహిత్య విమర్శ
Name of the Topic	యూనిట్ III - రస సిద్ధాంతం
Hours required	8
Learning Objectives	రస సూత్రావిష్కారాన్ని - వివరించుట.
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) రస సూత్రములు - విభావ, అనుభావ, సాత్త్వికత, సంచారీ భావాలు 2) రసోత్పత్తి వాదాలు (రస నిష్ప) - భట్టలోల్లటుడు, భట్టనాయకుడు, శ్రీ శంకుకుడు, అభినవ గుప్తుడు 3) రస సంఖ్య - రస సమీకరణ వాదాలు / రస్తవత్వం.
Examples / Illustrations	వివిధ కావ్యాలు, నాటకీయతల నుండి
Additional Inputs	వివిధ అలంకారిక గ్రంథాల వివరణ
Teaching Aids used	
References cited	రసోల్లాసము - ఆచార్య ఓ. వి. సుబ్బారెడ్డి
Student Activity Planned after the teaching	భారతీయ అలంకారిక శాస్త్ర కావ్యాలను ఎంపిక చేసి కావ్యాలలో సమన్వయించడం
Activity Planned outside the Class room, if any	పాఠ్యాంశ సంబంధిత అలంకారిక గ్రంథాలను పరిశీలించడం
Any other Activity	స్వధీ పాఠ్యాంశ

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్నాతక తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA - HET - Sem IV
Paper :	తెలుగు సాహిత్య వివరణ
Name of the Topic	యూనిట్ IV - ధ్వని
Hours required	10
Learning Objectives	ధ్వని స్వరూపాన్ని గమనించడం ద్వారా కావ్యసౌందర్యాన్ని ఆస్వాదిస్తారు.
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) ధ్వని : ధ్వని స్వరూపం, ధ్వని నిర్వచనం, ధ్వని సిద్ధాంతం, ధ్వని కావ్యలక్షణాలు. 2) ధ్వని భేదాలు 3) అభిధ, లక్షణ, వ్యంజన
Examples / Illustrations	వివిధ ధ్వనికావ్యోదాహరణలు
Additional Inputs	వ్యంగ్య పద్యాన్ని రచనలు చూచిన - ఆధునిక సాహిత్యం మంచి
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల
References cited	భారత ధ్వనిదర్శనము - ఆచార్య కేలూక రఘునాథ శర్మ
Student Activity Planned after the teaching	ఆధునిక కవుల పద్యసంగ్రహాలు
Activity Planned outside the Class room, if any	ఆధునిక కవుల పద్యసంగ్రహాల సేకరణ
Any other Activity	చేతి పత్రిక

released

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	తెలుగు - స్వీయచరిత్ర తెలుగు
Name of the Lecturer :	డా॥ వై. శ్రీలత
Course / Group :	II BA - HET - Sem IV
Paper :	తెలుగు సాహిత్య విమర్శ
Name of the Topic	యూనిట్ IV - సంపుటాయ కవిత్వం - విమర్శా పద్ధతులు
Hours required	10
Learning Objectives	కవిత్వలక్షణాలను విమర్శనాత్మకంగా అధ్యయనం చేస్తారు.
Previous Knowledge to be reminded	అలంకార శాస్త్ర పరిచయం
Topic Synopsis	1) సాహిత్య విమర్శ - వివిధ అంశాలు, పద్ధతులు 2) సాహిత్య విమర్శ - సంపుటాంశ విమర్శా పద్ధతులు 3) తిక్కన తెలుపులు - ఆచార్య బి.వి. సుబ్బారెడ్డి గారి సాహిత్య చరిత్రలో చర్చనీయాంశాలు గ్రంథం నుండి.
Examples / Illustrations	విమర్శా గ్రంథాల ఉదాహరణలు
Additional Inputs	పత్రికా విమర్శా వ్యాసాలు
Teaching Aids used	పాఠ్యపుస్తకం, నల్లబల్ల,
References cited	సాహిత్య చరిత్రలో చర్చనీయాంశాలు - ఆచార్య బి.వి. సుబ్బారెడ్డి
Student Activity Planned after the teaching	పత్రికా విమర్శా వ్యాసాలను విద్యార్థుల చేత చదివించి వివరించి చెప్పడం
Activity Planned outside the Class room, if any	పత్రికా లేదా విమర్శా వ్యాసం - సేకరణ
Any other Activity	వ్యాసరచన, స్టడీ మెటీరియల్

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	ENGLISH
Name of the Lecturer :	L. SUNITHA
Course / Group :	B.Com G.Cm (Sem - 3)
Paper :	A Course in Conversational Skills
Name of the Topic :	Tryst with Destiny
Hours required :	4
Learning Objectives	how the ambition of the greatest men, has been to wipe every tear from every eye.
Previous knowledge to be reminded	Great leaders who Embodies the Spirit in India.
Topic Synopsis	(Continue on the reverse side if needed) Historic movement really knocked the stuffing out of the British to maintain colonial rule. adding to that the absolute passionate and determined Indian Independence, there arose a disagreement between Gandhi, Nehru and Jinnah. The service of India means the service of millions who suffering humanity.
Examples/Illustrations	Few historic movements by great freedom fighters Eg National leaders
Additional inputs	Language speech - How can be an English-language
Teaching Aids used	Text book, Google for Audio
References cited	Internet
Student Activity planned after the teaching	Speech on an hot topic (Current situation) Ex: Covid, Online classes, JVD
Activity planned outside the Class room, if any	Few points that inspired them
Any other activity	A4 Sheet - To write about Jawaharlal Nehru

L Sunitha

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	ENGLISH
Name of the Lecturer :	L. SUNITHA
Course / Group :	B.Com Gen E.M. (Sem-3)
Paper :	A Course in Conversational Skills
Name of the Topic :	Yes, We Can - Barack Obama.
Hours required :	4
Learning Objectives	How were proposals for Job Creation & federal deficit reduction.
Previous knowledge to be reminded	Knowledge about few Non-Indian leaders.
Topic Synopsis	*(Continue on the reverse side if needed)* Speeches typically serve four general purposes : to inform, persuade, instruct or entertain. The theme for president Obama's speech was 'Rescue, Rebuild, Restore - a New foundation for Property'. Among the topics that Obama covered in his speech were proposals for Job creation and federal deficit reductions.
Examples/Illustrations	Administrative techniques to revive the strengths of Public.
Additional inputs	Motivational speeches by different leaders
Teaching Aids used	Text book, Internet
References cited	Audio, Video presentation from Youtube
Student Activity planned after the teaching	Pairing the students to know what Obama said can be possible to be done.
Activity planned outside the Class room, if any	Interview few persons, how they want to grow our India in all aspects
Any other activity	Vision 2024 Vs Long Vission 2054

L. Sunitha

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	ENGLISH
Name of the Lecturer :	L. SUNITHA
Course / Group :	B.Com Gen E.M. (Sem-3)
Paper :	A Course in Conversational Skills
Name of the Topic :	JRD Tata's interview - T.N. Ninan
Hours required :	4
Learning Objectives	Value of discipline. Love people. Dream big / fly high.
Previous knowledge to be reminded	Strategies to fly high.
Topic Synopsis	*(Continue on the reverse side if needed)* Grand old man of Indian industry. Still alert and very involved in his giant group's diverse business, he conveys a certain old-world charm that is rare, especially in the bustling world of go-getting businessman. Jehangir Ratanji Dadabhoy Tata is the (P.T.O)
Examples/Illustrations	Stories - attaing success in the busting world
Additional inputs	Interview skills, proving for Identity
Teaching Aids used	Text book, Internet
References cited	Youtube, Google
Student Activity planned after the teaching	Interview his/her role model
Activity planned outside the Class room, if any	few interesting points to be collected about his favourite business man / article / item.
Any other activity	Excerise related to the lesson

L. Sunitha

Signature of the Lecturer

He turned 82, still alert and very involved in his giant group's diverse business, he conveys a certain old-word charm that is rare.

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	L. Sunitha
Course / Group :	B.Com G.E.M. (Sem-3)
Paper :	A Course in Conversational skills
Name of the Topic :	You've Got to find what you love - Steve Jobs
Hours required :	4
Learning Objectives	How to do great work is to love what you do.
Previous knowledge to be reminded	Which work they love? what they love to do?
Topic Synopsis	*(Continue on the reverse side if needed)* Steve Jobs, Explores the most important things to guide an individual's life. He talks about discovering what you want in your life as a person, following your heart and doing what you love best. The author emphasis on believing in oneself (P.T.O)
Examples/Illustrations	Dignity of work
Additional inputs	Stories of great people who attained success with their love towards work.
Teaching Aids used	Text book, Internet
References cited	You tube, Google
Student Activity planned after the teaching	Interview any person who they feel as role model
Activity planned outside the Class room, if any	Discussion with parents how their work is going to fill a large part of their life.
Any other activity	Debate on few professions.

L Sunitha

Signature of the Lecturer

And that is as true for your work as it is for your lovers. Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work.

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022.

Name of the Department / Subject :	English
Name of the Lecturer :	L. Sunitha
Course / Group :	B.Com Gen E.M. (Sem - 3)
Paper :	A Course in Conversational skills
Name of the Topic :	A leader should know how to manage failure
Hours required :	4
Learning Objectives	How to feel Comfortable though you have got failure
Previous knowledge to be reminded	Their favourite leader/Person and why?
Topic Synopsis	(Continue on the reverse side if needed) * what kind of challenges did Kalam face during his childhood and youth? * If you can change one thing in your last 10 years, what it would be? * what qualities make a leader?* (P.T-O)
Examples/Illustrations	ways to manage failure. Recognise and accept your emotions. Don't make it personal. Don't worry about anyone else think. Take the right amount of responsibility. Use failure as a way to improve.
Additional inputs	
Teaching Aids used	Text book, Google, Video link.
References cited	Youtube.Com Uploaded by Knowledge at Wharton Posted on 04-Apr-2008.
Student Activity planned after the teaching	what according to them are the qualities of a leader.
Activity planned outside the Class room, if any	Interview a person whom do you think he has great leadership qualities.
Any other activity	Real life Incidents from parents where they managed failure.

L. Sunitha

Signature of the Lecturer

[illegible]

ANNUAL CURRICULAR PLAN

October - 2021

of the College : S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA

ne of the Lecturer : L SUNITHA Class : B.Com G Em Year : 2021-22 Paper :

	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
	1st Week I BA BCom	4	Skimming Scanning Resume CV formal letter Informal letter	Different models of Resume/ CV and letters from google.	brief discussion about the skills/ Grammar of Sem 2	01	Yes	-	writing a Resume and a CV	01	Yes	-	
	MA	4	origination of Human language, Difference between Animal & Human Communication										
2	2nd Week I BA BCom	4	Revision of Poetry - ode to west wind Prose - The Night train at Deoli	Q/Ans on the Poetry & Prose lessons (Individually)	Brief revision on the topics	01	Yes	-	Oral drilling of a Poem Audio	01	Yes		
	MA	4	formal and Informal English	Chart showing the difference between formal & Informal English									

Signature of the Le:

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week I BA BCom	4	Rovim: The coramandel fishers Prose : A Doll's house.	Q/Ans on the Poem & Prose (Individually)	Brief revision of the Poem & Prose	01	Yes	—	Oral drilling of Poem	01	Yes	—
	MA	3	International Varieties of Human language Globalisation phase	In Indian English					—	Revision	—	—
4	4th Week MA.	6	M.A. Verification of Assignments Revision for Sem end Exam	Allotment of Assignments	Assignments	01	Yes	—	Seminar on Revised topics	01	Yes	—

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA

November 2021

Name of the Lecturer : L SUNITHA Class : [redacted] B.Com G.Em Year : 2021 - 2022 Paper

	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
	1st Week B.Com G.Em	3	Syllabus paper of Sem-3 Introduction about "yourself" "My self"	Brief Introduction about Syllabus & Myself	Students Was to Introduce themselves to the Class.	01	Yes	-	Speaking skills - favourite place	01	Yes	-	
	MA	4	———	REVISION	———				———				
2	2nd Week B.Com G.Em	4	Notes on Self Introduction 13 ways to Greet 12 ways to Good Bye.	Few Sentences as Examples where we use Greetings Good Bye	Conversation between students by using Greetings Good Bye. Different Situations are taken.	01	Yes	-	Speaking Skills - Greetings on different Situations	01	Yes	-	
	MA	4	Prose and fiction	Introduction to Syllabus									

Signature of the Lecturer

Signature of the Dept. In-c

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week B.Com G.Em	4	Tryst with Destiny Explaination & Notes	Youtube link on the Particular lesson	Students take turns to express their opinions Tryst with Destiny	01	Yes	-	Stories which ended with success with hard work.	01	Yes	—
	MA	4	Introduction to Lab paper	* preparation Tips for attending				Viva-voice Exam *				
4	4th Week	4	Verification of notes on unit-1 and Seminar on unit-1	How to give Seminar on a topic	Seminar on unit-1	01	Yes	-	Seminar on unit-1 to test Speaking Skill	01	Yes	—
	MA	4	Revision of 203 paper Drama	* Brief	Explanation of all the units from the paper							

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

December 2021

me of the College : S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA

me of the Lecturer : Class : Year : Paper

	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
	1st Week Sem 3 B.Com G.Em	2	Exam on unit-1	How to write exam first about writer and later the content	Chance is given to the students to write on their own words	01	Yes	—	Basic Points to be remembered while writing an Exam	01	Yes	—	
	MA	4	Verification of Notes	along	with Syllabus	and	model	paper	of all	the	paper	codes.	
2	2nd Week Sem 3 B.Com G.Em	4	Exam on unit-1 & verification of the Papers	Students came to know their mistakes	Rewrite their Exam by verifying their mistakes	01	Yes	—	Correction of mistakes on their own	01	Yes	—	
	MA	4	Anandmath Drama-II	*Youtube link	for	better	understanding	of	the	story			

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

January 2022

ne of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

ne of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1st Week Sem 3 B.Com G.Eng	4	~~Note~~ unit-2 Yes we can	Summary related to unit-2	oral drilling of the Summary	12 01	Yes	—	Reading Skill - Summary	01	Yes	—	
MA Sem 3	4	Brief Revision of all units from 302 paper						as a part of Revision, verified notes of the students and clarified doubts				
2nd Week Sem 3 B.Com G.Eng	3	Grammar from unit - 1, 2 Revision *Conversation*	few Exercises related to Greetings wishes	Conversation between students on the related topic	10 01	Yes.	—	Conversation Skills	01	Yes	—	
								* Life Incidents where we Greet or wishes *.				
MA Sem 3	3	302 - New literatures in English unit-2	Notes		As a part in English		of are	English literature, New literatures Explained and notes is forwarded				

ture of the Lecturer Signature of the Dept. In-charge Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week Sem 3 B.Com G-En	4	Unit-3 A Leader should know how to manage failure.	Qualities of a good leader.	Projects they take up, if they lead a team.	01	Yes.	—	Qualities of a good leader - Discussion * few lines of their favourite leader *	01	Yes	—
	MA	4	unit-2 of 302	Notes								
4	4th Week Sem 3 B.Com G-En	3	Unit-4 An Interview with JRD Tata	Products launched by Tata Company	Qualities they try to inculcate from the life style of Tata	01	Yes	—	Interview Skills * How to face an interview *	01	Yes	—
	MA	4	Introduction to unit-3 The River Between									

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Prin

ANNUAL CURRICULAR PLAN

of the College : S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA

February 2022.

of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1st Week Sem 3 B.com G-Em MA	3 4	Unit - 5: We have got to find what you love Unit-2 Moogapoyina Pillana grovi	How to do a work in a successful way.	What work they love to do.	01	Yes	—	Real life real incidents to make life successful * The work/ Person they like the most * why *	01	Yes	—	
Week MA Sem 3 B.Com G-Em	13	P.G Classes (303) *Sem 3 unit 4 Bonsai life *Hazar churasin Play *Samskara *Sangathi Sem 3	All about plays / Stories written by great writers/ authors	How the Climax can be, if it is not the one which covered. Exams	01 Started	Yes	—	Discussion on different Stories Students read	01	Yes	—	

Signature of the Lecturer

Signature of the Dept. In-

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week	20	MA Sem 3 305 - unit 2 Theories of language learning unit 3 Acculturation Contrastive analysis Structural approach	Language Learning made easy with the theories	Students came to give Seminar on Theories of language learning	01	Yes	—	Different theories of language learning from Google search	01	Yes Theories of language is explained by the students	—
4	4th Week	13	MA Sem 3 306 - Lab / viva / Record	Information on Topics related to Lab	Verification of Records and preparation for viva.	01	Yes.	—	Record is verified and viva Questions are discussed with the students and clarified their doubts	01	Yes	—

of the Co.

of the Lect

Month & Week

1st Week

2nd We

ANNUAL CURRICULAR PLAN

March 2022

me of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

me of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1st Week	3	Introduction to Sem 4 M.A. (P.G) English	How the Papers Covered in Sem 4 are important	NO	As it is Introduction to the Syllabus of Sem-4 all papers. Syllabus paper is provided by the department to the students							
	Extra class	Sem 1 M.A. (P.G) English	Introduction to syllabus	NO.								
2nd Week	7	Sem 4 (M.A.) Humanistic approaches	Importance of English Language learning	Seminar ~~Key~~ students on importance of language learning	1	Yes	few sample prose and fiction stories discussed among the students and Importance of English language in our daily life.					
	9	Sem 1 (M.A.) unit-1 prose/ fiction	Short Stories	Difference between Prose & Fiction	1	Yes						
	2	BA HET (Sem 4) Introduction to certificate course	Topics in Course.	certificate	2	Yes						

ature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week	8	M.A. Sem 4 Community language Suggestopedia learning	Importance of language learning	Speaking Skill	8	Yes	–	How important is to learn a language.			
		10	MA Sem 1 Rise of English Novel	How to write a novel	Explaination Describing a novel they read	10	Yes	Narrating any novel they read				
		2.	BA HET Synonyms	Synonyms	Few own Synonyms	2	Yes	- Synonyms of few daily usage words				
4	4th Week	7	MA Sem 4 Predetermined syllabus Emergent syllabus	Difference between Syllabus & Circulum	Frame Syllabus for any of Class from 2 to 5	5	Yes	–	Difference between syllabus and Circulum and different type of syllabus.			
		9.	MA Sem 1 Select Essays Francis Bacon essays	Meaning of an Essay	Speak of Francis Bacon and his writings	4	Yes		* Collection from different Schools *			
		2	BA HET Tenses	Tenses Chart	Example sentences on Tenses	2	Yes					

Signature of the Lecturer

ANNUAL CURRICULAR PLAN

e of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

April 2022

e of the Lecturer : Class : Year : Paper :

Month & eek	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
Week	6	M.A. Sem 4 Unit 3 Vocabulary Parts of Speech	How to increase our Vocabulary	Each student has to come with new vocab	6	Yes	—	framing a story or a paragraph or a sentence using new vocabulary they learnt in that week.				
	8	M.A. Sem 1 Dr Francis Bacon Essays	Essays	Students with Essays in literature	8	Yes						
	2	BA HET Parts of speech voices	Chart on Voices	Few Examples on Voices	2	Yes.		Voice chart is being explained by the students				
2nd Week	5	M.A. Sem 4 Notes on unit 3	How to make Notes	oral drilling of Notes	5	Yes	Notes is given / forwarded in whatsapp and Google classroom and verified					
	5	M.A. Sem 1. Notes on unit 2	How to Prepare notes	Doubts if any on notes.	5	Yes	the notes and clarification of doubts					
	2	B.A. HET Voices One word substitutions	How these one word substitutions are used	oral drilling of one word substitutions	2	Yes	* oral drilling of the one word substitutes					

of the Lecturer Signature of the D[illegible]-ch Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week	8	M.A. Sem 4 Pronunciation Grammar	Sounds while we speak	Hearing activity	8	Yes	—	Different audio and video clips for the Proper pronunciation of Daily usage words.			
		10	M.A. Sem 1 unit 1,2 Revision	Verification of notes	Notes Verification	10	Yes	—				
		2	B.A. HET Revision on voices & one word substitutions	Few more Examples by Students	Examples on Voices by Students	2	Yes	—				
4	4th Week	7	M.A. Sem 4 Introduction to unit 4 (402) Listening Skill Speaking Skill	LSRW Skill	Activities related to LSRW Skills	7	Yes		Debate on which skill is important among LSRW Skills.			
		9	M.A. Sem 1 unit 4 Introduction Hamlet	Brief Introduction about the writer	Speaking about their favourite writer	9	Yes		* Key words and their meanings and usage, which belong to the English literature.			
		2	B.A. HET 1mark Questions	few key words in Eng. literature	Searching from Google about these	2	Yes					

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

the College : S.R

the Lecturer :

Month & Week	Hours Available
st Week	6
nd Week	

ANNUAL CURRICULAR PLAN

May 2022

ne of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

ne of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
st Week	6	M.A. Sem 4 402 unit 4 Speaking Reading	LSRW Skill	Speaking Skill	6	Yes	–	Discussion about Characters in the Prose				
	7	M.A. Sem 1 unit 4 Hamlet Prose.	few writings of Hamlet	Chart Preparation on Hamlet writings	7	Yes	–	HAMLET * polonius * Ophelia				
	2	BA. HET one mark questions	Notes on 1 mark Q's	Google search on Literary terms	2	Yes	–	* Horatio * claudius				
2nd Week	6	M.A. Sem 4 writing skills Introduction to unit 5	LSRW Skills	Writing Skill	6	Yes		* about their favourite Novel / book if any *				
	8	M.A. Sem 1 Novel manners	Novel Importance	on their own words	8	Yes						
	2	BA HET Revision	Revision	Revision	2	Yes	* the clarified the doubts.	As a part of Revision verified Notes of Certificate course and				

of the Dept. In charge

of th

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week	8.	M.A. Sem 4 Revision of unit 4	Revision	Revision	8	No					
		10	M.A. Sem 1 Revision of unit 1	Revision	Revision	10	NO					
		2	B.A HET Revision for Sem end Exam	Revision	Revision	2	NO.					
4	4th Week	7	M.A. Sem 4 Seminars / Projects	Revision	Revision	7	NO		Summer break from 13.05.22 to 31.05.22.			
		9	M.A. Sem 1 Seminars / Projects	Revision	Revision	9	NO					
		2	B.A. HET Revision for sem end Exam.	Revision	Revision	2	NO					

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

June 2022

me of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

me of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1st Week MA Sem 1	4	unit-2 of marriage & Single life. of adversity	Difference between a person to be in married state and to be in single life.		1	Yes	–	* Advantages and disadvantages of being married or staying Single *				
MA Sem 4	4	unit-5 Micro teaching Team teaching										
Sem 2 BA Ethp(um) Bifs	4	Poem - The Coromandel fishers	How to motivate any person by his/her words		1	Yes	–	* Motivational stories				
2nd Week MA Sem 1	4	unit-3 Gulliver's Travel unit-4 Pride and Prejudice. unit-5 Jane Eyre.	Notes is Provided	Recollection of Gulliver's Travel what we Studied in the school age.	1	Yes						
Sem 2 Bifs	4	Skimming & Scanning	Importance of Reading Skills	* A chapter from the Text book & Reading a News paper *	1	Yes	–	* Daily activities where Skimming / Scanning types of reading is used *.				

gnature of the Lecturer Signature of the Dept. In-charge Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week Sem 2 Bifs Sem 1 Sem 4	4 MA MA	Note-taking Resume and CV Letter writing 104 - unit 4 Tempest Dr. Frautus. 405 - Unit - 3 Poet, lover, Bird watcher.	Tips to Prepare Resume CV	Templates for formal and Informal	letter writings 1	Yes		To quickly take notes on the given unknown			
4	4th Week Sem 2 Bifs Sem 1	4 MA	Prose - 1 The Night train at Deoli Prose - 2 The Doll's house 405 - unit 4. Ngawadha Midnight children	How important is to maintain friendly relationship in any age	1		Yes	–	* Real life incidents where they sacrified thing / person they love			

Signature of the Lecturer

Signature of the Dept. In-charge

Sign

ANNUAL CURRICULAR PLAN

me of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A), VIJAYAWADA**

July 2022

me of the Lecturer : Class : Year : Paper :

Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
				Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1st Week Sem 2 Bifs	4	Prose - 1 The Night at Deoli Prose - 2 The Doll's house	Notes Provided		REVISION							
Sem 4 MA	4	The End of imagination										
Sem 1 MA	4	Seminar on unit wise Topics.										
2nd Week Sem 2 Bifs	4	Poetry - 1 The Coramandel fishers Poetry - 2 Ode to west wind	How can we motivate others by our words Discussion on Nature's gifs	1	Yes	-		*Real life incidents when / How they got motivated * Discussion how Nature gifts are advantage and disadvantage to human life				
Sem 4 MA	4	405 - Clarification of doubts										
Sem 1 MA	4	Revision of 104 Complete paper 105 unit - 1										

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Principal

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Paper :

Name of the Lecturer :

Class :

Year :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week Sem 2 Bifs	4	Internal Exam Revision of 5 summaries	Question paper					* Discussion about any Astrologer they met in real-life *			
	Sem 1 MA	4	Revision for sem end Exam									
	Sem 4 MA	4	Revision for sem end Exam									
4	4th Week Sem 2 Bifs	4	Revision of Summaries	oral drilling, unseen writing								

ANNUAL CURRICULAR PLAN

Aug 2022

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity				Remarks
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	
1	1st Week & Sem Bifs	4	One word Substitutions letter writing	Different types of letter writing		1	Yes	–	* Real life incidents when they sent a letter or received a letter * Collection of Couriers we get from different Banks *				
2	2nd Week & Sem 2 Bifs	2	Revision for Sem End Exam			—	Revision						
	MA Sem 1	2	Introduction to Syllabus										

Signature of the Lecturer

Signature of the Dept. In-charge

Signature of the Prin

ANNUAL CURRICULAR PLAN

Name of the College : **S.R.R. & C.V.R. Govt. DEGREE COLLEGE (A)**, VIJAYAWADA

Name of the Lecturer : Class : Year : Paper :

Sl. No.	Month & Week	Hours Available	Syllabus Topic	Additional Input / Value Addition Provided / taught	Curricular Activity				Co-Curricular Activity			
					Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date	Activity Conducted	Hours allotted	Whether conducted	If not Alternate Date
3	3rd Week Sem 2 MA	4	unit-2 Sons and lovers: Grimm's law Vernier law Stress shift	Emotional attachments and their importance 1 Chart to Show the Grimm's law			Yes	—	The Relationship they have with their parents			
4	4th Week Sem 2 MA	4	Unit-3 Portrait of the artist as a young man * Lab notes *	Notes	NO.							

Signature of the Lecturer

Signature of the Dept. In-charge

Sig

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021- 2022

Name of the Lecturer P. Sailaja

Department of Physics & Electronics

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics & Electronics / Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	B.Sc MECS
Paper :	V
Name of the Topic	8085 Microprocessor
Hours required	
Learning Objectives	Introduction, Microcomputer
Previous Knowledge to be reminded	Central Processing Unit
Topic Synopsis	Microprocessor is a multipurpose Programmable logic device that reads binary instructions from a storage device called memory accepts binary instructions and provides result as o/p. Microcomputer: Microcomputer uses microprocessor as CPU. It consists of ALU, Register Array and control unit in CPU, memory (RAM & Rom) and o/p & o/p devices. Microprocessor is clock driven semiconductor device consisting of logic
Examples / Illustrations	circuits manufactured by using either LSI or VLSI technique. Registers & flip-flops
Additional Inputs	Applications where microprocessors are used
Teaching Aids used	ICT
References cited	Introduction to microprocessor – AP Mathur
Student Activity Planned after the teaching	Assignment work
Activity Planned outside the Class room, if any	
Any other Activity	

Pin diagram and Description of 8085 microprocessor

8085 is an 8-bit microprocessor as it operates on 8-bits. The size of the address bus in 8085 is 16 bits. Thus it can address 64 KB memory. An 8085 µp is an IC with 40 pins and operate with +5V Power Supply. The signals of this 40pin IC is grouped into 7 categories which are given below.

1. Power supply and Clock signals
2. Data bus
3. Address bus
4. Serial I/O Ports
5. Interrupts and externally generated signals
6. Control and status signals
7. Direct memory access.

Architecture of 8085 : It consists of ALU, Register Array and control and status registers. Timing & Control

ALU : It is used to perform mathematical operations like addition, subtraction, multiplication, division etc and logical operation.

Flag register : It 8-bit register.

Accumulator : Used to perform I/O, Arithmetic and logical operations. Result will be stored in accumulator.

General Purpose register : B, C, D, E, H, L. These are used as Pairs for 16-bit operations BC, D-E and H-L

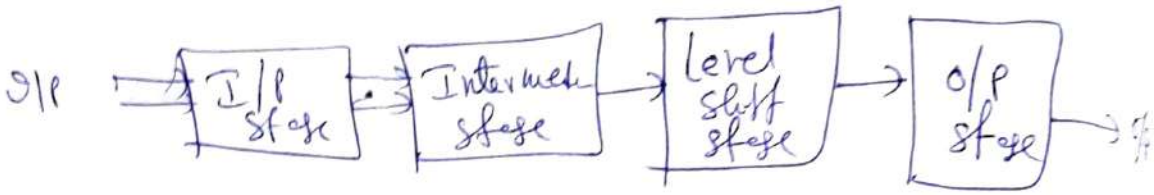
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics & Electronics / Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	III B.Sc MECs
Paper :	V
Name of the Topic	Addressing modes, Timing diagrams, Instruction set
Hours required	
Learning Objectives	Types Addressing modes, classification of Instruction set
Previous Knowledge to be reminded	Registers, bytes, Coare forms, Size of Instruction
Topic Synopsis	Addressing modes of 8085 - Instructions are commands to the microprocessor to copy 8-bit data from a source into a destination. In these data instructions, the source can be a register, an 8-bit numbers or an o/p port. Similarly a destination can be a register or an o/p port. The source and destination are called the addressing modes. Timing diagrams: The job of µp is to execute programs. These programs consists of a number of instructions stored in the memory of the microprocessor
Examples / Illustrations	Classification with examples
Additional Inputs	Instructions and their sizes
Teaching Aids used	White Board, PPT
References cited	Microprocessor - B. RAM Introduction to microprocessor - A.P. Mathur
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

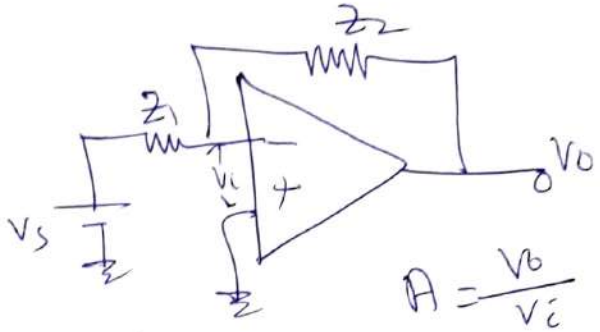
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics & Electronics / Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II B.Sc MECS
Paper :	III
Name of the Topic	OP AMP, Block diagram, Inverting & Non Inv
Hours required	
Learning Objectives	Ideal OP Amp, Basic OP Amp, Block diagram, Inverting & Non In
Previous Knowledge to be reminded	Amplifiers - classification, gain with feedback
Topic Synopsis	An OP Amp is a high gain direct coupled amplifier with high Output resistance and low o/p resistance to which feedback is added to result overall response. An operational amplifier is a versatile available as a single chip of Integrated circuit package. The o/p is used to amplify ac as well as dc signals and designed for computing mathematical operations such as addition, subtraction Integration, Differentiation, Sign changer, Scale changer etc.
Examples / Illustrations	Mathematical formulae
Additional Inputs	Multivibrator, Amplifiers, oscillators
Teaching Aids used	White Board
References cited	Integrated Electronics - Millman & Halkias OP Amps - Gaykwad
Student Activity Planned after the teaching	Assignments, Seminars
Activity Planned outside the Class room, if any	Circuits are verified practically
Any other Activity	

Block diagram: It consists of cascade of three stages.



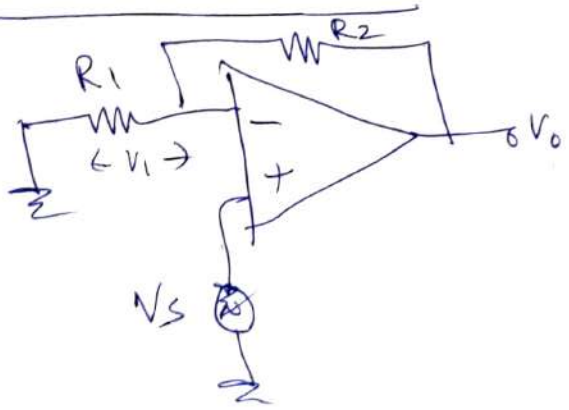
Basic Inverting OP Amp:



$$A = \frac{V_o}{V_i}$$

$$A_f = -\frac{Z_2}{Z_1} = \frac{V_o}{V_s}$$

Non Inverting OP Amp:



$$A = \frac{V_o}{V_i} \Rightarrow V_i = 0, \; A = \infty$$

$$V_1 - V_s = 0$$

$$V_1 = V_s$$

$$A_f = \frac{V_o}{V_s} = 1 + \frac{R_2}{R_1}$$

P. Silan

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	III B.Sc MECS
Paper :	V
Name of the Topic	Programming in 8085
Hours required 10	Addition, subtraction, Multiplication. Division
Learning Objectives	Largest number, Smallest number, Block of data transfer
Previous Knowledge to be reminded	Instruction set
Topic Synopsis	An assembly Language Program is the group of instructions which is written to perform a task. An assembly language instruction consists of an OP code, mnemonic generally followed by one or two operands. An assemble language instruction consists of four fields. Memory address mnemonic opcode description 2000 MVI A, 05 move immediate 05 to ACC 2002 ADI 10H Add immediate 10H to ACC 2004 MOV B, A Copy the content from ACC to B reg 2005 HLT Stop the Program
Examples / Illustrations	Programming example
Additional Inputs	microcontroller
Teaching Aids used	ICT, white Board
References cited	Introduction to microprocessors – A.P Mathur Microprocessors & Microcontroller – B. RAM
Student Activity Planned after the teaching	Assignment work
Activity Planned outside the Class room, if any	
Any other Activity	

Addition of two 8-bit numbers

```
LDA 8050 H
MOV B, A
LDA 8051 H
ADD B
STA 8055 H
HLT
```

Program for multiplying two 8-bit binary numbers.

```
      LHLD 8051
      MVI  A,00
LOOP  ADD  H
      DCR  L
      JNZ  LOOP
      STA  8053 H
      HLT
```

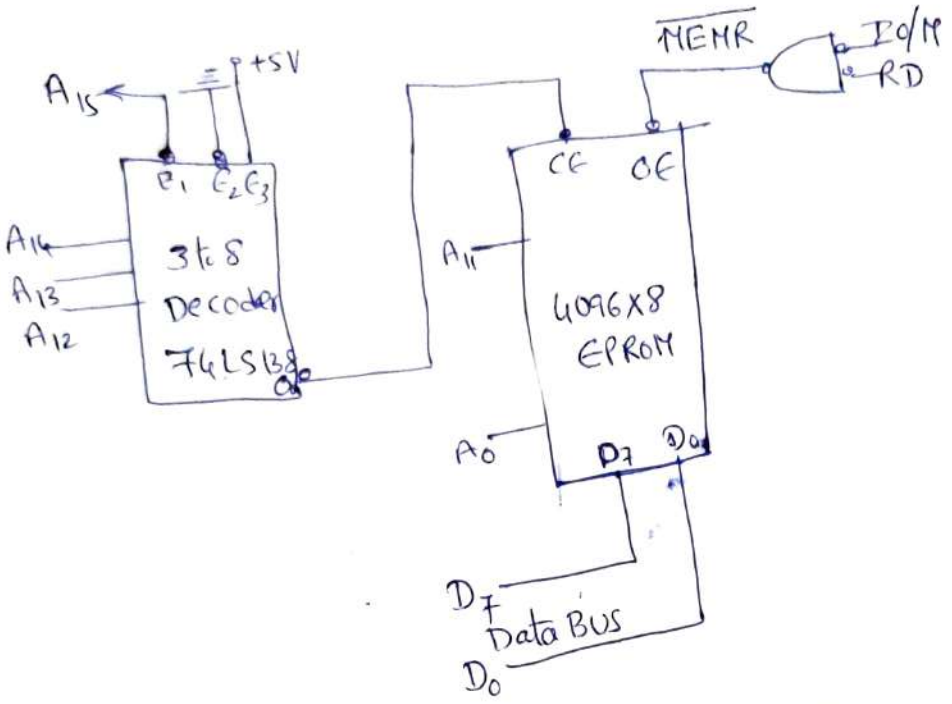
Program to find the largest number in an array of data.

```
      LXI  H, 8060
      MOV  C, M
      MVI  A,00
LOOP  INX  H
      CMP  M
      JNC  NEXT
      MOV  A,M
NEXT  DCR  C
      JNZ  LOOP
      STA  8069 H
      HLT
```

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P Sailaja
Course / Group :	III B.Sc MECs
Paper :	V
Name of the Topic	Memory Interfacing, 8255 PPI
Hours required	12
Learning Objectives	2K X 8, 4K X 8 ROM & RAM
Previous Knowledge to be reminded	Memory - RAM, ROM, EPROM, DRAM, SRAM
Topic Synopsis	While executing an instruction, there is a necessity for the microprocessor to access memory frequently for reading various instruction codes and data stored in the memory. The interfacing circuit aids in accessing the memory. Memory requires some signals to read from and write into register. similarly the microprocessor transmits some signals for reading or writing a data. The Interfacing process involves matching the memory requirements with the microprocessor signals.
Examples / Illustrations	Different memory sizes
Additional Inputs	I/o Interfacing
Teaching Aids used	ICT
References cited	Introduction to microprocessors - AP Mathur
Student Activity Planned after the teaching	Seminars, Assignments
Activity Planned outside the Class room, if any	
Any other Activity	Project work

8085 interfacing circuit to interface EPROM (Using 3X8 decoder)



8085 Interfacing RAM memory Chip (2KX8 RAM)

11 address lines $A_{10}-A_0$ to decode 2048 registers

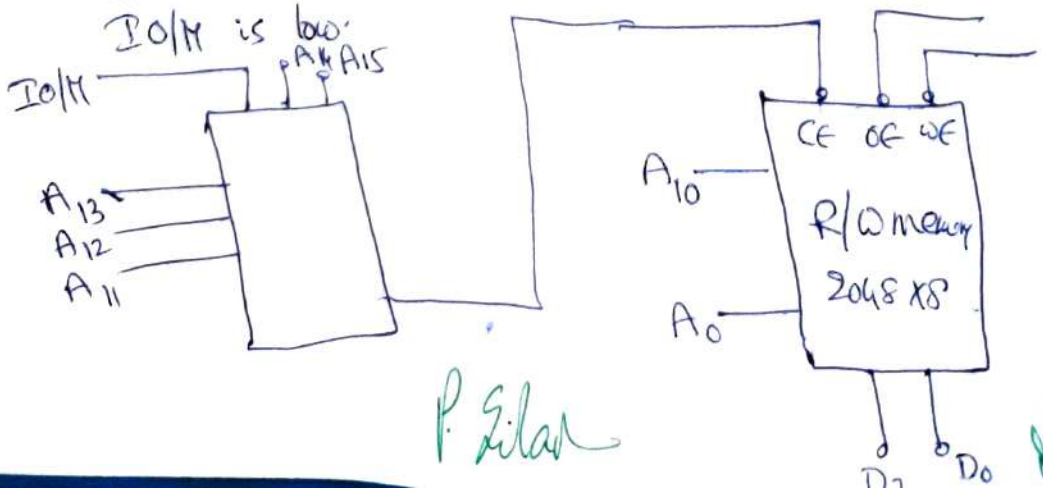
Address lines $A_{15}-A_{11}$ are connected to decoder

RD and WR signals are directly connected to memory Chip

MEMR and MEMW need not to be generated separately

Memory address ranges from 8800H to 8FFFH

$A_{13}-A_{11}$ (001) activate output O1 of decoder which is connected to CE of memory Chip and it is asserted only when IO/M is low.



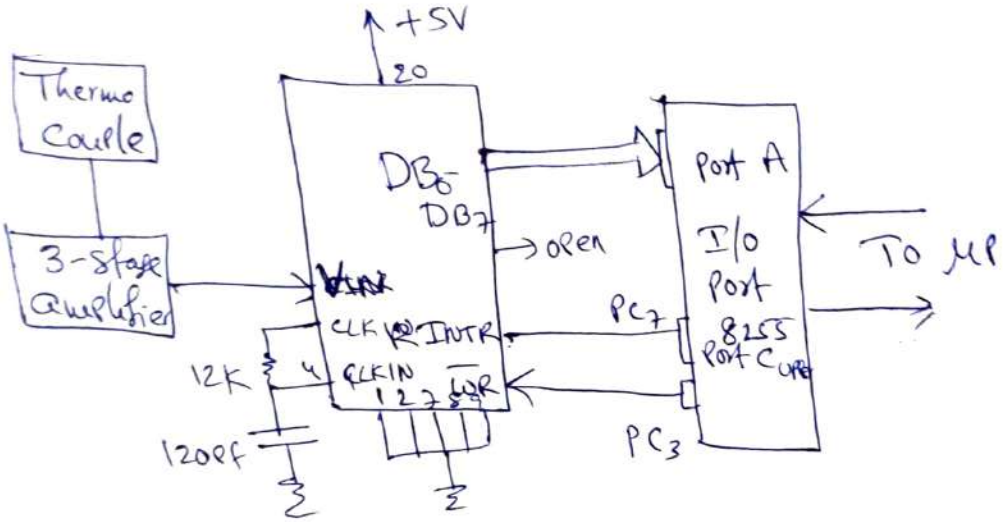
P. Silas

TEACHING PLAN (SYNOPSIS)

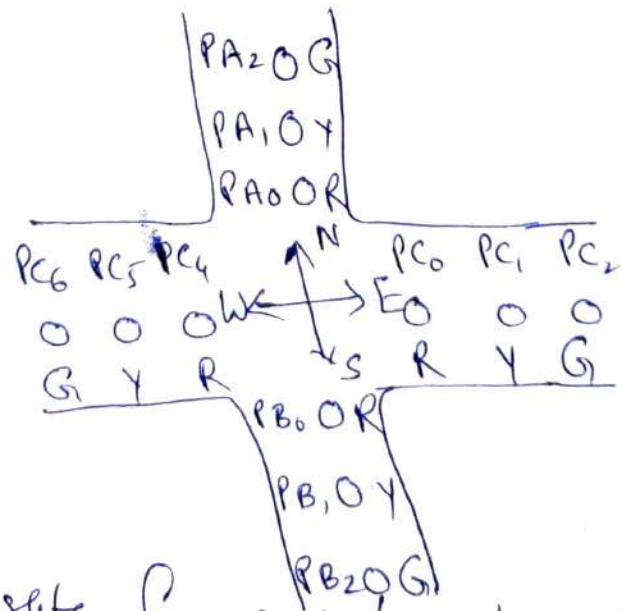
Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	III B.Sc MECs
Paper :	V
Name of the Topic	8255 PPI, Temp. control, traffic light control
Hours required	10 Stepper motor cont 8255 Block diagram
Learning Objectives	8255 Blockdiagram, Pin diagram, Modes
Previous Knowledge to be reminded	8085 microprocessor
Topic Synopsis	The 8255 is a general Purpose Programmable I/O device. It is Programmable because any Port can be defined either as I/P Port or as O/P Port. It Consists of three 8-bit bidirectional Input or output Ports that can be Configured to meet different system I/O Peripherals. It is used for Parallel data transfer. The three Ports are Port A, Port B & Port C. Port C can be divided into Port C Upper and Port C lower. Port A and Port B are 8-bit Ports. Port C Upper and Port C lower are two 4-bit Ports. These 4 Ports can be divided into 2 groups. Group A and Group B
Examples / Illustrations	Group A controls Port A and Port C Upper. Group B controls Port B and Port C lower Control word register for different I/O
Additional Inputs	BSR mode
Teaching Aids used	ICT
References cited	Microprocessor & Microcontroller - B.RAM Introduction to Microprocessor - AP Mathur
Student Activity Planned after the teaching	Mid - II Exam
Activity Planned outside the Class room, if any	Project work
Any other Activity	

The Intel 8279 is a programmable keyboard interface device. Data input and display are the integral part of the microprocessor kits and microprocessor based systems. The 8279 has been designed for interfacing of 8-bit microprocessor. The 8279 has two sections namely keyboard section and display section.

Simple temperature control using Microprocessor:



Simple Traffic control Interface:

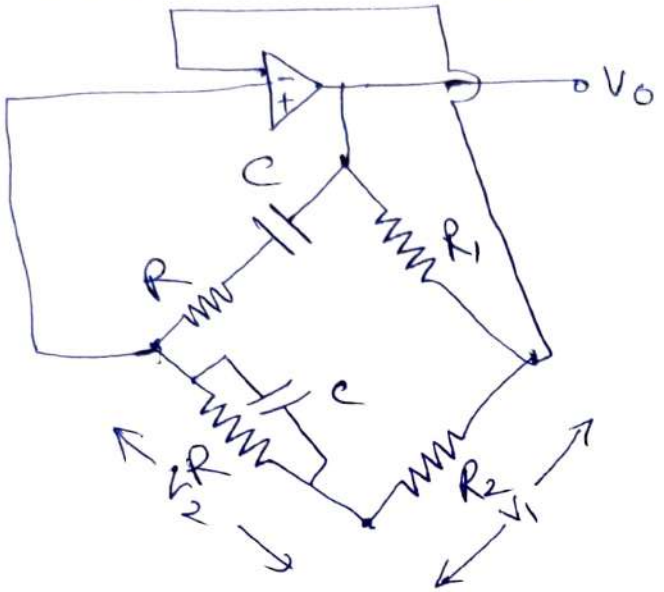


Green lights for right turns have not been shown. One can add some more LED's for this purpose. Connect them to Port B and make additions to the Program.

TEACHING PLAN (SYNOPSIS)

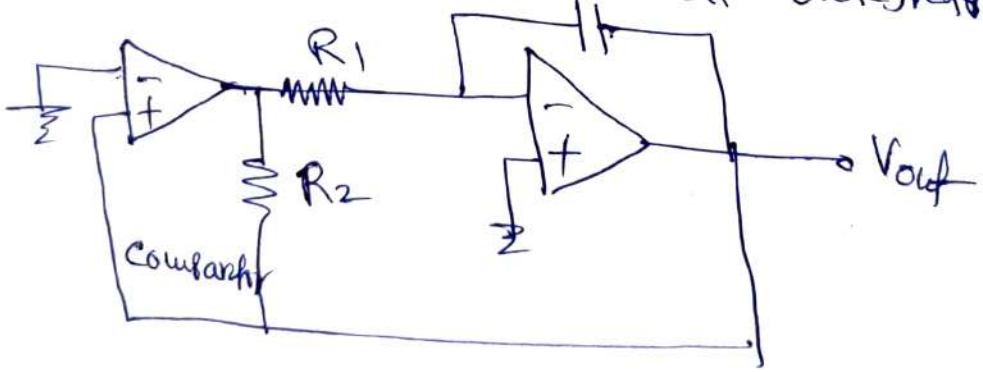
Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II B.Sc MECS
Paper :	III
Name of the Topic	OP Amp Applications
Hours required	10
Learning Objectives	Comparator, voltage resulator, Sine, square, Triangular wave form Generators, Active filters, IC555.
Previous Knowledge to be reminded	Passive filters, AC Bridges, Oscillators
Topic Synopsis	Comparator: Comparator is device used to compare two o/p signals. The o/p of the amplifier is zero when $V_i = V_R$. The o/p voltage is saturated either positively or negatively when the inputs are unequal. voltage resulator: It maintains the constant o/p voltage irrespective of the variations in the o/p or load current variations. Astable multivibrator: The principle of generation of square o/p is to force an op amp to operate in the saturation region.
Examples / Illustrations	Resulators, Rectifiers, filters
Additional Inputs	AC Bridges, Oscillators
Teaching Aids used	Black Board, PPT
References cited	Integrated Electronics - Millman & Halkias OP Amp - Gaykwad
Student Activity Planned after the teaching	Assignment work
Activity Planned outside the Class room, if any	Project
Any other Activity	

Wien Bridge oscillator: An RC oscillator which uses a balanced bridge as the feedback loop is the wien bridge oscillator. The o/p V_o of the amplifier is the o/p voltage of the bridge. The o/p voltage V_i of the bridge is the ip voltage of the amplifier.



Triangular wave oscillator:

The circuit makes use of two OP AMPs. one of them is used as a comparator and other as an integrator.



P. Silan

P. Silan

29/8/2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II & III B.Sc MECs
Paper :	V & VII 8051 microcontrollers
Name of the Topic	Microcontrollers
Hours required	08
Learning Objectives	Architecture, Pin configuration
Previous Knowledge to be reminded	8085 microprocessor
Topic Synopsis	A CPU built in a single chip is called microprocessor. A digital computer having microprocessor as CPU along with memory and I/o devices is called a computer. A single chip microcomputer is called microcontroller. Micro suggest that the device is small and controller tells you that the device might be use of control objects or events. A microcontroller is a single chip computer that carries many of the same items that a desktop computer has, such as microprocessors, human interface devices like monitor and key board.
Examples / Illustrations	Desktops, Laptops etc
Additional Inputs	Different keyboards & displays
Teaching Aids used	PPT
References cited	8051 microcontroller Architecture by Mazidi " Ayala
Student Activity Planned after the teaching	Assignment work
Activity Planned outside the Class room, if any	
Any other Activity	Project

Internal Architecture of 8051

The Architecture includes the following main features.

128 byte of read/write memory (RAM)
4KB Program memory (ROM/EPROM)
four Programmable I/O ports
Two 16-bit timer/counter
A serial I/O port with UART
Five Interrupt lines

Flag Register: It is a 8-bit register

7	6	5	4	3	2	1	0
CY	AC	F0	RS_1	RS_2	OV	–	P

Pin diagram of 8051

It is a 40 pin IC.

Pin 1 to 8 is a Port 1.

9th RST

10th pin is Port 3

Pin 21 to 28 Port 2 Higher order Address bus

Pin 39 to 32 Port 0 $AD_0 - AD_7$

Pin 19 – XTL1

Pin 18 – XTL2

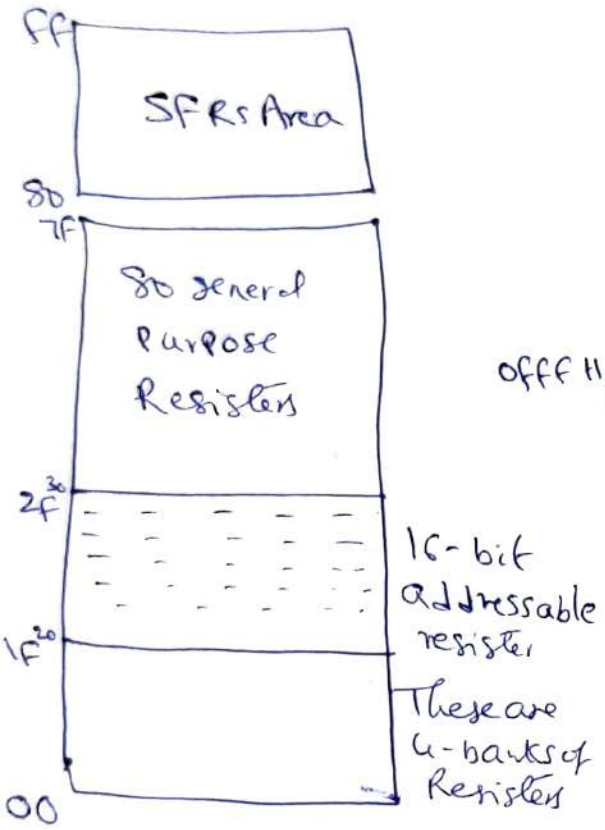
Pin 20 – Vss

Pin 40 — Supply voltage

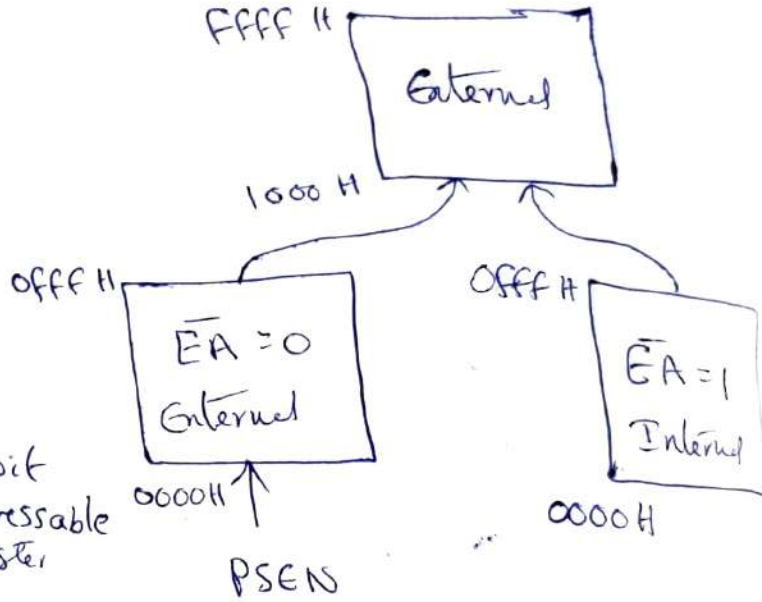
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II & III B.Sc MECs
Paper :	V & VII
Name of the Topic	Memory Organization
Hours required	06
Learning Objectives	Data memory, Program memory
Previous Knowledge to be reminded	Semiconductor memories ROM, RAM
Topic Synopsis	The 8051 has separate address spaces which are divided into four distinct areas. Internal data memory: Upto 256 bytes of Internal data memory are available from 00 to ff. First 128 bytes accessed either directly or indirectly. The upper 128 bytes of data memory can be addressed indirectly only. External data memory: It can be used when the application has a need for large amount of data memory. It can be made by using MOV X Instruction. Program memory: The program memory can be upto 64 KB out of which 4KB of memory provide on chip of the ROM/EPROM versions. Extended upto 64 KB of memory both data and Program memory
Examples / Illustrations	
Additional Inputs	calculation of memory size
Teaching Aids used	PPT
References cited	Microcontroller Architecture - Mazidi
Student Activity Planned after the teaching	Assignments, Student seminars
Activity Planned outside the Class room, if any	
Any other Activity	

Data memory



Program memory



TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Electronics
Name of the Lecturer	P. Saibaja
Course / Group	II & III B.Sc MECS
Paper	I & VII
Name of the Topic	Instruction set and Addressing modes
Hours required	10
Learning Objectives	Classification of Instruction set and Addressing modes
Previous Knowledge to be reminded	Instruction set of 8085
Topic Synopsis	An Instruction is a command given to the Controller to perform a specified task on given data. All Commands are known as Instruction Set. The 8051 MC has 255 Instructions Performing only 53 operations. The first Part of each Instruction is called mnemonic and other Part is called Operand. It is separated by one single Space. Some of the Instructions have no operand, while some of them have one, two or three. If there is more than one operand in an instruction, they are separated by a comma. Ex: RET JZ TEMP
Examples / Illustrations	ADD A, R3 CJNE A, #20, Loop
Additional Inputs	Programming examples
Teaching Aids used	White Board PPT
References cited	Micro controllers - Mazidi - Rajkamal
Student Activity Planned after the teaching	Assignments, Seminars
Activity Planned outside the Class room, if any	Seminars, Assignments
Any other Activity	Project work

Classification of Instructions based on word size

1. 1-byte Instructions
2. 2-byte "
3. 3-byte "

Instruction set classification

The 8051 instruction set is classified as

1.	Arithmetic Instruction	ADD A, R1
2.	Logical Instruction	ANL A, R5
3.	Data transfer Instruction	MOV A, R3
4.	Branch Instruction	RET
5.	Bit oriented Instruction	CLR C

Addressing modes of 8051

The CPU can access data in various ways. The data could be in a Resister or in memory or be provided as an immediate value. These various ways of accessing data are called addressing modes.

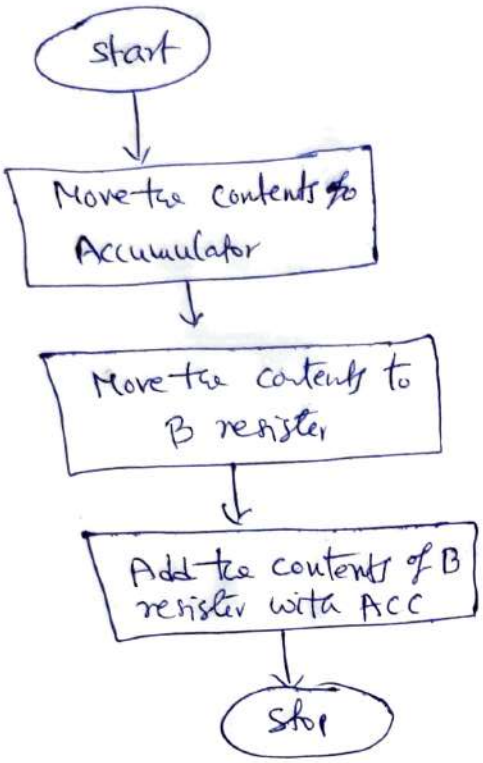
The 8051 provides a total of 8 distinct addressing modes. They are

1. Resister addressing mode
2. Direct addressing mode
3. Resister Indirect addressing mode
4. Immediate addressing mode
5. Indexed Addressing mode
6. Relative addressing mode
7. Absolute Addressing mode
8. Long addressing mode

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II B.Sc & III B.Sc MECs
Paper :	IV & VII
Name of the Topic	Programming Examples
Hours required	08
Learning Objectives	TO Add, subtract, multiplication, division etc
Previous Knowledge to be reminded	Instructions
Topic Synopsis	Program for Addition of two 8-bit numbers MOV A, #30H — Move 30H into ACC MOV B, #40H — Move 40H into B register ADD A,B — Add contents of B with contents of ACC LCALL 0003H — Stop the program Result : 70H Subtraction of two 8-bit numbers CLR C MOV A, #20H
Examples / Illustrations	MOV B, #10H SUBB A, B — Result : 10 H LCALL 0003H
Additional Inputs	Different Programs Practicing
Teaching Aids used	White Board PBT
References cited	Microcontroller — Mazidi Ayala
Student Activity Planned after the teaching	Assignments, Seminar
Activity Planned outside the Class room, if any	Field Projects
Any other Activity	Project Works

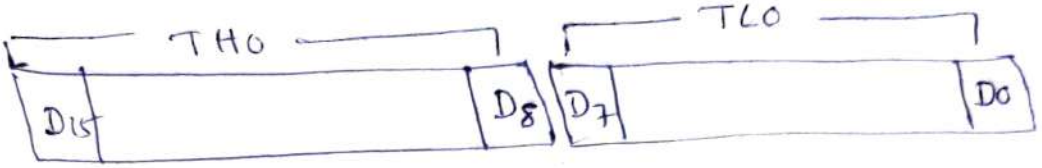
Flowchart


Start
Move the contents to Accumulator
Move the contents to B register
Add the contents of B register with ACC
Stop

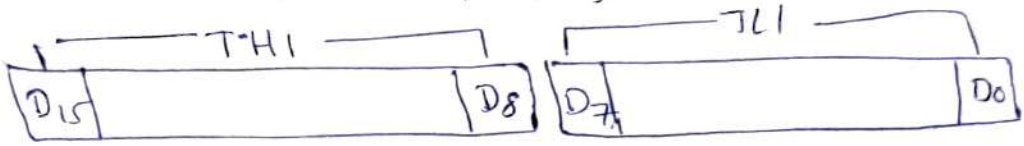
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II B.Sc & III B.Sc MECS
Paper :	IV & VII
Name of the Topic	Timer & counters
Hours required	06
Learning Objectives	Timer 0, Timer 1, mode 0, mode 1, mode 2 Programming
Previous Knowledge to be reminded	Instruction
Topic Synopsis	The 8051 has two Timers/Counters. They can be used either as timer to generate a time delay or as counter to count events happening outside the microcontroller. The 8051 has two timers, timer 0 and Timer 1. They can be used as timers or as event counters both timer 0 and timer 1 are 16 bit wide. Since the 8051 has an 8-bit architecture, each 16-bit timer is accessed as two separate registers of low byte and high byte. Timer 0 registers : TL0 and TH0 Timer 1 registers : TL1 and TH1
Examples / Illustrations	These registers can be accessed like any other registers such as A, B, R0, R1, R2 ... etc
Additional Inputs	Crystal oscillator
Teaching Aids used	White Board, PPT
References cited	Microcontrollers – Mazidi – Raj Kumar Ayala
Student Activity Planned after the teaching	Assignment, Mid exams, Seminars
Activity Planned outside the Class room, if any	Project work
Any other Activity	

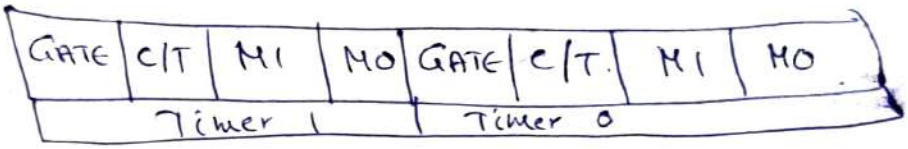
Timer 0 Registers



Time 1 Registers



TMOD



Mode 0 : Both M1 & M0 are 0

It is a 13-bit timer mode

8-bit timer/counter. THx and TLx as 5-bit Prescaler

Mode 1 : M1 is 0 and M0 is 1

It is a 16 bit timer mode

16 bit timer/counter THx and TLx are cascaded

Mode 2: M1 is 1 and M0 is 0

It is a 8-bit auto reload

8-bit auto reload timer/counter.

THx holds the value that is to be reloaded into TLx each time it overflows.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	P. Sailaja Electronics
Name of the Lecturer	P Sailaja
Course / Group	II B Sc & III B Sc MECs
Paper	V & VII
Name of the Topic	Soft ware and Hard ware development tools
Hours required	04
Learning Objectives	Assembler, Linker, debugger, CPU etc
Previous Knowledge to be reminded	Microprocessor
Topic Synopsis	Editor, Assembler, Linker, Objective to Hex converter There are so many editors like MS-DOS, edit, NotePad, WordPad, edit + etc Note that the editor must be able to Produce an Ascii file After writing the program we have to Save asm. Assembler The assembler Converts the instruction into Machine Code The assembler will produce an object file and a list file. Linker: Assembler requires a third step called linking. The link Program takes one or more object files and Produces an absolute object file with the extension abs
Examples / Illustrations	OBJ to Hex: The abs file is fedito a Program called OH which creates a file with extension hex'. This Program is Common with all 8051 assemblers.
Additional Inputs	Hexa decimal nos
Teaching Aids used	PPT, White Board
References cited	Microcontrollers – Mazidi – Rafiquzzaman, Ayala
Student Activity Planned after the teaching	Mid exams, Assignments, Seminar
Activity Planned outside the Class room, if any	
Any other Activity	Project work

CPU: The CPU is made up of semiconductor material i.e arranged to form millions of transistors. The transistors are together to form AND, OR, NOT to perform logical operations.

A CPU is a collection of combinational and sequential ckts. These are the heart and brain for computers.

Memory: The sequence of instructions have to store in a place called memory. Generally the binary data is stored in the form of electrical signals in memory cells. Each cell can store only one binary value.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II & III B.Sc MECS
Paper :	V & VII
Name of the Topic	Interfacing
Hours required	06
Learning Objectives	LCD interfacing, 8255, Stepper motor, Serial communication
Previous Knowledge to be reminded	PPI 8255
Topic Synopsis	The 8255 chip is programmed in any of the 4 modes by sending a byte to the control register of the 8255. we must first find the port addresses assigned to each of ports A, B, C and control register. This is called mapping the I/O port. The stepper motor is a brushless DC motor that divides the full rotation angle of 360° into a number of equal steps. The motor is rotated by applying a certain sequence of control signals. The speed of rotation can be changed by changing the rate at which the control signals are applied. LCD display is a very basic module and is very commonly used in various devices and circuits. These modules are preferred over seven segments and other multisegment LEDs
Examples / Illustrations	Numerical and Alphanumerical displays
Additional Inputs	LED display
Teaching Aids used	PPT, White Board
References cited	Microcontrollers - Mazidi Ayala, OER
Student Activity Planned after the teaching	Assignments, Seminars, Quiz
Activity Planned outside the Class room, if any	
Any other Activity	Project Work.

The reasons being: LCDs are economical, easily Programmable have no limitation of displaying special & even custom Characters, animations And Soon.

A 16X2 LCD means it can display 16 character per line and there are 2 such lines.

Serial Communication: The 8051 is a 8-bit microcontroller and it transfers 8-bit data simultaneously. This is the Parallel I/O mode. An 8-bit data Path is expensive as it requires 8 transmission lines between Sender and receiver. for this reason Serial Communication is used for transferring data between two systems at distances of hundreds of feets to millions of miles apart.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Electronics
Name of the Lecturer :	P. Sailaja
Course / Group :	II & III B.Sc MECS
Paper :	V & VII
Name of the Topic	PIC microcontroller
Hours required	06
Learning Objectives	Architecture, Pin diagram, memory organisation
Previous Knowledge to be reminded	8051 µC
Topic Synopsis	PIC is a family of microcontrollers made by microchip technology derived from the PIC 1650. PIC microcontrollers are based on Harvard architecture. At present PIC microcontrollers are widely used for Industrial Purpose due to its high performance ability at low power consumption. The 8-bit PIC microcontroller is divided into following four categories on the basis of internal architecture. Baseline PIC, Mid range PIC, Enhanced mid range PIC, PIC 18. Of has a 20 Pin IC. Memory variations: The PIC microcontrollers are available with different memory options which are mask ROM, EPROM and Flash memory.
Examples / Illustrations	8051 Architecture
Additional Inputs	Data memory, Program memory
Teaching Aids used	PPT, Black Board
References cited	Microcontrollers - Mazidi Ayala, Raj Kamal, GR
Student Activity Planned after the teaching	Assignments, Seminars, Quiz
Activity Planned outside the Class room, if any	
Any other Activity	Project work

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

Year : 2021-2022

Name of the Lecturer G. Swapna

Department of Botany

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	III BSc TM
Paper :	Cell Biology, Genetics and Plant Breeding
Name of the Topic	Structure of DNA & TYPES OF DNA
Hours required	3 Hrs
Learning Objectives	Learning the structure, TYPES & Functionalities of DNA
Previous Knowledge to be remained	Intermediate
Topic Synopsis	DNA is one of the Nucleic acid which is known as Deoxy Ribose Nucleic acid. DNA structure was explained by Watson & Crick. DNA made up of two polynucleotide strands Antiparallely & spirally arranged. DNA is made up of 4 types of N_2 bases Adenine, Guanine, Thiamine & Cytosine, Sugar & Phosphorus Chargaff Rule explains the Ratio of Nucleotides
Examples / Illustrations	DNA structure in Pro & Eukaryotic cells
Additional Inputs	Youtube videos & Pdf files Regarding DNA.
Teaching Aids used	DNA models & charts
References cited	-
Student Activity Planned after the teaching	Assignment & seminar
Activity Planed outside the Class room, if any	Observation of DNA structure & Functionality, videos
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sowjya
Course / Group :	III B2C EM
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Cell wall, Plasmamembrane
Hours required	5 Hrs
Learning Objectives	Understanding the Structure & Functionality of the plasma membrane.
Previous Knowledge to be remained	Intamedbate
Topic Synopsis	Cell wall is the outermost envelope of plant cell. Cell wall absent in Animal cells Cell wall is distinguished into primary, middle and inner wall layers made up of cellulose, Hemicellulose, Lignin & Pectins Plasma membrane: Plasma membrane is the thin living membrane made up of lipids & Proteins. Plasmamembrane is present inside the cell wall. Its structure explained by Fluid mosaic, Robertson, Bi & Stir landlar, micellar models etc
Examples / Illustrations	Prokaryotic & Eukaryotic cells
Additional Inputs	Youtube videos on structure of cell wall & Plasmamembrane
Teaching Aids used	Charts & Models
References cited	-
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	-
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	III BSC EM
Paper :	Cell biology, Genetics & Plant Breeding
Name of the Topic	RNA Structure, Functions & TYPES
Hours required	02
Learning Objectives	Understanding the structure, TYPES & Functionalities of RNA
Previous Knowledge to be remained	Intermediate.
Topic Synopsis	RNA → Ribose Nucleic acid. RNA TYPES of are of 3 TYPES. (1) m RNA (2) r RNA (3) t RNA. RNA is made up of Single Polynucleotide Chain. m RNA carries the messages from Nucleus to Ribosomes. r RNA Present in ~~RNA~~ Ribosomes t RNA structure was discovered by Holley It Possess Anticodon Site with 3 arms.
Examples / Illustrations	RNA Structures
Additional Inputs	Videos Showing m RNA Animations
Teaching Aids used	Charts & Models & Google Images
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	No!
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sowjya
Course / Group :	II BSc TM
Paper :	Cell Biology, Genetics and Plant Breeding
Name of the Topic	5) Chromosomes
Hours required	03
Learning Objectives	Learning about Structure & types of Chromosomes.
Previous Knowledge to be remained	Intermediate
Topic Synopsis	Chromosomes made up of Chromatin material. Chromosome Consists of two Chromatids Rise two Chromatids are connected by a centromere. Chromosome ends known as Telomeres Chromosome contains two arms. Based on shape they are Acrocentric, Telocentric, sub meta centric, Metacentric types. Based on Number of centromeres they are Monocentric, Di & Poly centric etc
Examples / Illustrations	Google Images of Chromosomes of Various Plants spp
Additional Inputs	Videos / Animations of Chromosome
Teaching Aids used	Chart & model & slides & Specimens
References cited	Allium, Tollium etc
Student Activity Planned after the teaching	Nil
Activity Planed outside the Class room, if any	Chart preparation
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	III BSc
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Mendel's Laws
Hours required	03
Learning Objectives	Learning Mendel's laws concepts
Previous Knowledge to be remained	Intermediate.
Topic Synopsis	Gregor John mendel formulated the Mendel's principles of 3 types. He experimented on pisum sativum. Formulated 3 laws 1. Law of Dominance 2. Law of Segregation 3. Law of Independent assortment. He performed Monohybrid and Dihybrid Crosses. Ratio of Monohybrid - Phenotype - 3:1 Genotype: 1:2:1 Ratio of Dihybrid - Phenotype - 9:3:3:1
Examples / Illustrations	Pisum sativum
Additional Inputs	Videos Animations & Google Images on Mendel's laws
Teaching Aids used	Charts & PPT
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Genetics Problems
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	III B.Sc
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Linkage & Crossing over (Linkage)
Hours required	03
Learning Objectives	Concept of Linkage & types & significance
Previous Knowledge to be remained	Nil
Topic Synopsis	Genes which are closely present on the chromosome are called Linked genes. The phenomenon happening between the Linked Genes is known as Linkage. When Linkage happens Ratios of Mendel's Dihybrid Cross Changes it can't be 9:3:3:1 Linkage may be Complete (or) Incomplete Linkage.
Examples / Illustrations	Drosophila melanogaster
Additional Inputs	Google Images & Pdf & PPT on Linkage
Teaching Aids used	Charts
References cited	—
Student Activity Planned after the teaching	Assignment given
Activity Planed outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	III B2C
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Crossing over
Hours required	03
Learning Objectives	Concept & Mechanism of Crossing over.
Previous Knowledge to be remained	—
Topic Synopsis	Crossing over is a mechanism by which two Chromatid segments exchange DNA. "X" shaped Chiasmata formed. Recombinants & New variants will be formed due to Crossing over. Crossing over can be explained by exchange segment hypothesis, Breakage reay etc. Morgan & Muller were the scientists worked on this
Examples / Illustrations	Drosophila
Additional Inputs	Videos & PPTs, Animations on Crossing over
Teaching Aids used	Al Chart, Specimens
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	-
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	B.Sc BZC
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Mutation Breeding
Hours required	02
Learning Objectives	Concept of Mutation Breeding
Previous Knowledge to be remained	—
Topic Synopsis	Mutation breeding known as variation Breeding process of exposing seeds to chemicals/ Radiation. Plants are known as Mutagenic Plants. Chemicals causing Mutation are dimethyl sulfate, ethyl methanosulphonate etc Radiations like UV, gamma & x-Rays can cause Mutations. Restriction endonucleases also Play an important Role in Mutation Breeding
Examples / Illustrations	Rice, Groundnut, mung bean etc.
Additional Inputs	PPT & Videos of Processes of Mutation Breeding
Teaching Aids used	PPT & Google Images
References cited	Nil
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Seminar
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sarapa
Course / Group :	B.SC B2C III Yr.
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Hybridisation (Concept)
Hours required	2 Hrs
Learning Objectives	Concept of Hybridisation
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Production of Hybrid by Crossing two individuals of unlike Genetic Constitution is known as Hybridisation. It Produces new Combination of Genes. First Hybrid Plant Produced by Thomas Fear child Intra varietal, Inter varietal, Interspecific are the types of hybridisation..
Examples / Illustrations	Cotton, Maize, Mango etc
Additional Inputs	PPT & Pdf, Videos Related to Hybridisation
Teaching Aids used	PPT & Pdf.
References cited	—
Student Activity Planned after the teaching	Project Works / Seminars
Activity Planed outside the Class room, if any	Project works
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G Swapna
Course / Group :	III B.Sc B2C
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Lab / Process of Hybridisation
Hours required	02
Learning Objectives	Process of Hybridisation steps use & objectives
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Procedure Involves (1) selection of Parents (2) selfing of Parents / Artificial self Pollination (3) Emasculation (4) Bagging (5) Tagging (6) Crossing (7) Harvesting & storing of F, seeds (8) Raising of F, Generation. Pedigree method, Bulk method, Single seed descent method, Back Cross / multiple Cross methods are examples
Examples / Illustrations	Rice, Wheat, Maize, sugarcane
Additional Inputs	Youtube videos on Hybridisation
Teaching Aids used	ppt, videos & Pdf
References cited	—
Student Activity Planned after the teaching	Project works & Assignment
Activity Planed outside the Class room, if any	Project works
Any other Activity	Nil

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	III B.Sc BZC
Paper :	Cell Biology, Genetics & Plant Breeding
Name of the Topic	Selection methods
Hours required	05
Learning Objectives	Learning about methods of selection & advantages
Previous Knowledge to be remained	Nil
Topic Synopsis	Selection is of two types (1) Mass selection (2) Pure line selection + Johansen (3) Clonal selection In Pure line plants are selected for desirability It is not necessary they should have a similar phenotype In mass selection selected plants have to be similar in phenotype since the seeds are mixed.
Examples / Illustrations	Phaseolus vulgaris
Additional Inputs	Videos showing Processing of selection methods
Teaching Aids used	PPT & PDF & Youtube
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Field visit
Any other Activity	—

PRSoll 29/8/2022 Gpapa

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Branches of Horticulture
Hours required	02
Learning Objectives	Learning concept of Fundamentals of horticulture and Science
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	1. Vegetable Kingdom 2. Floriculture 3. Pomology 4. olericulture 5. Medicinal / aromatic plants 6. Spices / plantation crops.
Examples / Illustrations	Tomato, brinjal, Apple, Rose, Jasmine, Banana Ashwagandha, Sarpagandha, coriender, Cumin.
Additional Inputs	Youtube videos on Branches of horticulture
Teaching Aids used	ppt & Google images.
References cited	—
Student Activity Planned after the teaching	Assignments given
Activity Planed outside the Class room, if any	Project works.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Integrated nutrient management
Hours required	02
Learning Objectives	Learning concept of Fundamentals of Horticulture integrated nutrient management
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Components of integrated nutrient management. 1. Fertilizers 2. Manures 3. Bio fertilizers 4. Compost. 5. Green manures.
Examples / Illustrations	General
Additional Inputs	PPt & videos.
Teaching Aids used	Pdf
References cited	—
Student Activity Planned after the teaching	Project works & Assignment
Activity Planed outside the Class room, if any	Project works
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I B.Sc BHc
Paper :	Fundamentals of Horticulture and soil science.
Name of the Topic	Export Scenario and scope for Horticulture
Hours required	03
Learning Objectives	Learning Concept of Export scenario and scope
Previous Knowledge to be remained	Intermediate basic Knowledge.
Topic Synopsis	For providing raw maintanence to small scale industries like silkworm, lack, honey, match, paper, canning and dehydration etc. horticulture has wide scope.
Examples / Illustrations	Fruits, Vegetables, flowers etc.
Additional Inputs	Youtube Videos & Google images.
Teaching Aids used	PPt's
References cited	—
Student Activity Planned after the teaching	Assignments.
Activity Planed outside the Class room, if any	Projects works.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapa
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and soil science
Name of the Topic	Classification of horticulture crops based on
Hours required	02
Learning Objectives	Learning concepts of classification of horticultur
Previous Knowledge to be remained	Intermediate basic Knowledge.
Topic Synopsis	1. Alluvial soils 2. Tarai soils 3. Arid soils 4. Black soils 5. Red soils 6. Laterite soils 7. Mashy soils.
Examples / Illustrations	Ber, Date, Aanla, Kair, Phalsa.
Additional Inputs	Pdf's & Google images.
Teaching Aids used	PPt's
References cited	-
Student Activity Planned after the teaching	Assignments
Activity Planed outside the Class room, if any	Project works.
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Gopi
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Horticulture zones of Andhra pradesh
Hours required	03
Learning Objectives	Learning concepts of Horticulture zone of AP
Previous Knowledge to be remained	Intermediate basic Knowledge.
Topic Synopsis	1. Tropical zone 2. sub- tropical zone 3. Arid tropical zone 4. Heavy rainfall areas 5. Low rain fall areas
Examples / Illustrations	Zones rich in Custard apple, guava, Pine apple, Straw berry grown
Additional Inputs	Google images
Teaching Aids used	PPt's & Pdf's
References cited	—
Student Activity Planned after the teaching	Assignments & Project works
Activity Planed outside the Class room, if any	Project works.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Horticulture
Name of the Lecturer :	G. Swapna
Course / Group :	I BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Taxonomy of soil.
Hours required	01
Learning Objectives	Learning concepts of soil taxonomy
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	1. Soil texture 2. Soil structure 3. Organic matter 4. Depth of soil 5. Macro pores.
Examples / Illustrations	Red soil, clay soil, loan soil.
Additional Inputs	PPt & videos of soil taxonomy
Teaching Aids used	charts & models
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	I Bsc BHC
Paper :	Fundamentals of Horticulture and soil science
Name of the Topic	Orchard System
Hours required	01
Learning Objectives	Learning Concepts of orchard Systems.
Previous Knowledge to be remained	Intermediate basic Knowledge.
Topic Synopsis	1. Square System 2. Rectangular System 3. Hexagonal System 4. Quincunx System 5. Contour System
Examples / Illustrations	Guava, Mango, Sapota.
Additional Inputs	Youtube vedios on orchard System.
Teaching Aids used	charts & models.
References cited	-
Student Activity Planned after the teaching	Assignments
Activity Planed outside the Class room, if any	Project works.
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and Soil Science.
Name of the Topic	Methods of Pruning.
Hours required	02
Learning Objectives	learning concepts of Pruning methods
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	1. Objectives of Pruning 2. Principles of Pruning 3. Heading back 4. Thinning 5. Ringing or Girdling 6. Notching 5. Nicking.
Examples / Illustrations	Guava
Additional Inputs	Pdf & Google images
Teaching Aids used	PPt
References cited	—
Student Activity Planned after the teaching	Assignments & Project works
Activity Planed outside the Class room, if any	—
Any other Activity	——

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sujatha
Course / Group :	I BSc BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Methods of Training
Hours required	01
Learning Objectives	Learning concepts of Training methods
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	1. central leader system 2. open centre system 3. Modified leader system 4. Bush System
Examples / Illustrations	Apple.
Additional Inputs	Google images & Youtube videos.
Teaching Aids used	Pdf & PPt
References cited	—
Student Activity Planned after the teaching	Assignments
Activity Planed outside the Class room, if any	Practice & hands on training methods
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	I B.Sc BHC
Paper :	Fundamentals of Horticulture and Soil Science
Name of the Topic	Integrated Nutrient Management.
Hours required	02
Learning Objectives	learning concepts of Integrated nutrient management
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Component's of INM:- 1. Fertilizers 2. Manure 3. compost 4. Green manure 5. Crop Residue 6. Bio Fertilizers.
Examples / Illustrations	General
Additional Inputs	Youtube videos
Teaching Aids used	PPt, videos & Pdf
References cited	—
Student Activity Planned after the teaching	Project works & Assignments
Activity Planed outside the Class room, if any	Project works.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	BOTANY
Name of the Lecturer :	G. Sapa
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Aspects in plant tissue culture.
Hours required	02
Learning Objectives	Learning concepts on Plant tissue aspects culture.
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	In vitro culture there are five important aspects. 1. Culture medium 2. Aspetic conditions 3. Transfer of explant 4. Incubation of the culture 5. Aeration
Examples / Illustrations	General
Additional Inputs	Advanced aspects.
Teaching Aids used	Youtube, Pdf, Google images.
References cited	Nil
Student Activity Planned after the teaching	—
Activity Planed outside the Class room, if any	Nil
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Sexual Propagation
Hours required	01
Learning Objectives	Learning Concepts of Sexual propagation.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Raising plants by means of seeds is called Sexual propagation. 1.) Advantages & disadvantages 2.) Development of seeds 3. ~~control~~ Different Kinds of seeds.
Examples / Illustrations	Beans, Carrot, Acacia, Campsis, Pinus.
Additional Inputs	Youtube videos on Sexual propagation
Teaching Aids used	PPt, Videos & Pdf
References cited	—
Student Activity Planned after the teaching	Project works
Activity Planed outside the Class room, if any	Project works
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Swapna
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Totipotency in plant tissue culture.
Hours required	01
Learning Objectives	Learning concept on Totipotency
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	The ability of plant cell to divide, grow & Produce a complete plant under controlled condition 1. Preparation of nutrient culture medium 2. Sterilization of the culture medium 3. Preparation of explant 4. Inoculation of explants. 5. Incubation for growth.
Examples / Illustrations	General.
Additional Inputs	Significance of Totipotency
Teaching Aids used	Pdf, Google images.
References cited	Nil
Student Activity Planned after the teaching	—
Activity Planed outside the Class room, if any	—
Any other Activity	Nil

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sudha
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Seed testing and certification
Hours required	02
Learning Objectives	Learning about certification and seed testing
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Seed certification is a very important step for the production of foundation & certified seeds. 1. Seed testing methody 2. Phases and stages of seed certificat .ion.
Examples / Illustrations	French bean, cluster bean, bittergourd
Additional Inputs	Google images
Teaching Aids used	charts & models, Youtube videos.
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Testing various seeds with systematic procedure.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sujatha
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Composition of different culture medium.
Hours required	03
Learning Objectives	Learning concepts of Composition of culture medium.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Excised plant tissue & Organs can not Synthesize their own food material. a.) Macro nutrients b.) Micro nutrients c.) Carbon source d.) Vitamins e.) Amino acids 2. Preparation of nutrient medium
Examples / Illustrations	MS media, white media.
Additional Inputs	Preparation of media, functions.
Teaching Aids used	Pdf, Google images, Youtube.
References cited	—
Student Activity Planned after the teaching	Assignment, seminar.
Activity Planed outside the Class room, if any	Analysis of various nutrient media.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I Bsc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Seed Storage
Hours required	03.
Learning Objectives	Understanding the Storage of seeds.
Previous Knowledge to be remained	Intermediate.
Topic Synopsis	Seeds are required to be conserved through proper storage for a short & longer period. 1.) Factors affecting seed viability 2.) Safe storage of seed.
Examples / Illustrations	Beetroot, cabbage, celery, Lettuce, Palak.
Additional Inputs	Google images on storage of seeds.
Teaching Aids used	Pdf
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Project work
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sowjanya
Course / Group :	III B.Sc BZC
Paper :	Plant tissue cultur. and its biotechnological applications
Name of the Topic	Somatic hybridisation.
Hours required	03
Learning Objectives	Learning concepts on somatic hybridization
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	The technique involving the fusion of isol-ated protoplasts from genetically distinct individuals 1. Protoplast isolation 2. Protoplast fusion 3. Identification of somatic hybrid 4. Post fusion events.
Examples / Illustrations	Tomato.
Additional Inputs	Applications of somatic hybridization.
Teaching Aids used	Pdf, Google images, Youtube.
References cited	—
Student Activity Planned after the teaching	Assignment / Projectwork.
Activity Planed outside the Class room, if any	—
Any other Activity	NIL

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreja
Course / Group :	I BSc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Nursery Establishment
Hours required	03
Learning Objectives	Learning concepts of Nursery Establishment
Previous Knowledge to be remained	Intemediate basic knowledge
Topic Synopsis	A nursery is a place, where seedling, saplings trees, shrubs & other planting material are grown 1. Importance of nursery 2. Factors affecting nursery 3. Parts of a nursery
Examples / Illustrations	Kadiyam nurseries.
Additional Inputs	Virtual toor to nurseries.
Teaching Aids used	Garden / nursery tool kit.
References cited	(Gurunanak colony, Madhuranagar). in Vijayawada. Kadiyam nurseries and local nurseries
Student Activity Planned after the teaching	visiting local nurseries.
Activity Planed outside the Class room, if any	Nursery visit.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapa
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Methods of Sterilizations.
Hours required	01
Learning Objectives	Learning concepts on Sterilization methods.
Previous Knowledge to be remained	Intermediate basic knowledge on sterilization
Topic Synopsis	Sterilization process is necessary to destroy the micro organism during tissue culture. 1. Physical methods. a. Nutrient medium b. Inoculation chamber 2. chemical methods a. Sterilization of nutrient medium b. Sterilization of plant material
Examples / Illustrations	Glassware, Media, Explant.
Additional Inputs	Physical methods, chemical methods.
Teaching Aids used	Glassware, formalin, autoclave, centrifuge, oven.
References cited	—
Student Activity Planned after the teaching	Practice on sterilization methods.
Activity Planed outside the Class room, if any	Assignment
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Tools and Accessories required in nursery
Hours required	02
Learning Objectives	Learning concepts on tools & accessories required
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	1. Important tools are secateurs, forks, pruning shears, knives, saws. 2. Accessories are tying & Wrapping material grafting wax, Polythene tapes, supports, baskets, pots, pesticides etc.
Examples / Illustrations	Hoe, forks, knives, saws, etc,.
Additional Inputs	Working principles and mechanism of tools.
Teaching Aids used	Youtube, google images.
References cited	—
Student Activity Planned after the teaching	field work.
Activity Planed outside the Class room, if any	field activity.
Any other Activity	field work.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Types of cultures
Hours required	03
Learning Objectives	Learning concepts on culture types.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Explained about the types of cultures in detail step by step 1. Root culture 2. Leaf culture 3. Shoot tip culture 4. Embryo culture 5. Ovary culture 6. Ovule culture
Examples / Illustrations	Datura, Brassica.
Additional Inputs	Culture process.
Teaching Aids used	Youtube, Pdf.
References cited	—
Student Activity Planned after the teaching	Assignment / Seminar
Activity Planed outside the Class room, if any	Observation of types of cultures in virtual labs.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Routine nursery Practices.
Hours required	02
Learning Objectives	learning concepts on nursery practices.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	In nursery, there are certain operations that should be followed judiciously for the production of quality planting material. 1. clipping. 2. Defoliation 3. pinching, transplanting 4. pricking, disbudding 5. De shooting.
Examples / Illustrations	Local nurseries in Vijayawada.
Additional Inputs	Knowledge on all nursery practices.
Teaching Aids used	Youtube, Pdf.
References cited	Local nurseries.
Student Activity Planned after the teaching	visiting & field work in nurseries.
Activity Planed outside the Class room, if any	field work on nursery Practices.
Any other Activity	Nursery works.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Differentiation and Dedifferentiation of cell
Hours required	02
Learning Objectives	Learning concepts on cell differentiation.
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	1. Cell differentiation 2. Cell division and morphogenesis 3. Cell Enlargment 4. De-differentiation
Examples / Illustrations	General
Additional Inputs	Process of differentiation & dedifferentiation of cell
Teaching Aids used	Pdfs, Google images.
References cited	—
Student Activity Planned after the teaching	Observation of plant differentiation.
Activity Planed outside the Class room, if any	Nil
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I Bsc BHC
Paper :	Vegetative propagation techniques and nursery management.
Name of the Topic	Types of cuttings.
Hours required	03
Learning Objectives	Learning concepts on cutting types.
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Cuttings are prepared from vegetative portion of plants such as stem, leaf, root 1. Stem cutting 2. Root cutting 3. Leaf cutting 4. Bud cutting 5. Herbaceous cutting.
Examples / Illustrations	Hibiscus, Rose.
Additional Inputs	Process of preparation of cuttings
Teaching Aids used	Pdf, Youtube, google images.
References cited	Hibiscus, Rose.
Student Activity Planned after the teaching	Field work / activity on cuttings.
Activity Planed outside the Class room, if any	Field activity on cuttings.
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Methods of Grafting.
Hours required	03
Learning Objectives	learning concepts on Grafting methods.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Grafting is an art and science in which two living parts of different plants are joined together and grow into a composite plant. 1. Tongue grafting 2. cleft grafting 3. Bridge grafting 4. Whip grafting 5. Side grafting.
Examples / Illustrations	Mango, hibiscus, rose.
Additional Inputs	Hands on practice
Teaching Aids used	Google images, Pdf, videos.
References cited	Mango, hibiscus, rose.
Student Activity Planned after the teaching	Practices/hands on grafting.
Activity Planed outside the Class room, if any	Practices on grafting.
Any other Activity	Practices on various methods on grafting.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	III. Bsc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Somatic embryogenesis.
Hours required	02
Learning Objectives	Learning concepts on somatic embryogenesis.
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	During sexual reproduction, fertilization results in the formation of an unicellular zygote. 1. Direct embryogenesis 2. Indirect embryogenesis 3. Artificial Seedy.
Examples / Illustrations	Carrot,
Additional Inputs	Process stage wise.
Teaching Aids used	Pdf, Google images, Youtube
References cited	Nil
Student Activity Planned after the teaching	Assignment / Seminar, Project works.
Activity Planed outside the Class room, if any	Project works.
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapna
Course / Group :	III BSc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Secondary metabolites.
Hours required	03
Learning Objectives	Learning concepts on secondary metabolites
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	These are the chemical substances which are produced by some plants for defence mechanism. 1. Atropa belladone - Atropine Hyo-scyamine 2. Dioscorea deltoidea - Diosgenia 3. Ephedra foliate - Ephedrine 4. Matrica comonailla - Essential oils 5. Ravwolfia serpentina - Rescerpine.
Examples / Illustrations	Alkaloids, antibiotics, Phenols, terpenoids.
Additional Inputs	Structure and functionality of secondary metabolites
Teaching Aids used	Pdf, Google images.
References cited	—
Student Activity Planned after the teaching	Assignment, Seminar
Activity Planed outside the Class room, if any	Nil
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	I Bsc BHC
Paper :	Vegetative propagation techniques and nursery management
Name of the Topic	Methods of budding.
Hours required	02
Learning Objectives	Learning concepts on budding methods.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	The shape of cut given on root stock 1. T-budding 2. Inverted 'T' budding 3. chip budding 4. Patch budding 5. flute budding 6. Micro budding.
Examples / Illustrations	Rose, chrysanthemum.
Additional Inputs	Mechanism physidogically in budding.
Teaching Aids used	Pdf, google images, youtube.
References cited	Rose, chrysanthemum.
Student Activity Planned after the teaching	Observation of process of budding.
Activity Planed outside the Class room, if any	Observation of process of budding.
Any other Activity	Nil

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapa
Course / Group :	III Bsc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Restriction Endonucleases (R.E)
Hours required	01
Learning Objectives	Learning concepts on Restriction Endonucleases
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	The nuclease enzyme that cuts the DNA at a unique sequence, in a non-terminal region. 1. Type-I (R.E-I) 2. Type-II (R.E-II) 3. Type-III (R.E-III) 4. Type-IV (Endonucleases)
Examples / Illustrations	BamH-I, ECO R-I, HIND-III.
Additional Inputs	Net material on the functionality of restriction Endonucleases.
Teaching Aids used	Google images, youtube, Pdf.
References cited	—
Student Activity Planned after the teaching	Assignment
Activity Planed outside the Class room, if any	Nil
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapla
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management.
Name of the Topic	Propagation methods of Vegetable Crops.
Hours required	03
Learning Objectives	Learning concepts on propagation methods.
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Methods of Propagation:- 1. Seed propagation 2. Vegetative propagation of vegetables.
Examples / Illustrations	Cutting, layering, grafting.
Additional Inputs	Hands on training.
Teaching Aids used	Pdf, google images.
References cited	General propagation methods.
Student Activity Planned after the teaching	Practicing plant propagation methods.
Activity Planed outside the Class room, if any	Practicing plant propagation methods.
Any other Activity	Practicing plant propagation methods.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sreeja
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications
Name of the Topic	Cloning Vectors.
Hours required	01
Learning Objectives	Learning concepts on cloning vectors
Previous Knowledge to be remained	Intermediate basic knowledge
Topic Synopsis	Cloning vehicles are DNA molecules and used to transfor a DNA fragment from a test tube into a living cell. 1. Plasmids 2. Bacteriophages 3. Cosmids
Examples / Illustrations	p^{BR322}; p^{BR324}; p^{C194}; p^{SA0501}; $p^{BB161-1}$ of cloning vectors
Additional Inputs	Pdf, Youtube videos on the working mechanism
Teaching Aids used	Youtube, Pdf and google images.
References cited	—
Student Activity Planned after the teaching	Assignment / Seminars
Activity Planed outside the Class room, if any	Not applicable
Any other Activity	Nil

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	G. Sapa
Course / Group :	I B.Sc BHC
Paper :	Vegetative propagation techniques and nursery management.
Name of the Topic	Seed germination
Hours required	02
Learning Objectives	Learning Concepts on germination of seeds
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	Seed germination is the process of reactivation of the metabolic activities of the seed embryo. 1. stage and types of dormancy 2. factors & treatment. Stages of germination. 1. Activation stage. 3. seedling growth 2. Translocation stage. Stage.
Examples / Illustrations	Tomato.
Additional Inputs	Hands on experience. Youtube Video.
Teaching Aids used	Tomato seeds, Nursery trays, soil,
References cited	Tomato seeds.
Student Activity Planned after the teaching	Germinating the seeds, hands on experience.
Activity Planed outside the Class room, if any	Hands on experience
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Botany
Name of the Lecturer :	P. Sujata
Course / Group :	III B.Sc BZC
Paper :	Plant tissue culture and its biotechnological applications.
Name of the Topic	Methods of Gene transfer.
Hours required	03
Learning Objectives	Learning the concept of Gene transfer
Previous Knowledge to be remained	Intermediate basic knowledge.
Topic Synopsis	1. Electroporation 2. Micro projectile bombardment (Biolistics). 3. Gus Beta Glucuronidase 4. Green fluorescent protein (GFP) 5. Luciferase.
Examples / Illustrations	$pBr\ 322$, plasmids.
Additional Inputs	Pdf, Youtube virtual lab videos on Gene transfer
Teaching Aids used	Youtube videos, Pdf
References cited	—
Student Activity Planned after the teaching	Assignment / Seminar
Activity Planed outside the Class room, if any	—
Any other Activity	Nil

PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA-520 004

TEACHING PLAN (SYNOPSIS)

January-2021

Name of the Department / Subject :	Urdu / Mediam . Urdu Secand Language.
Name of the Lecturer :	Afroz Begum
Course / Group :	BA. (EHP) Urdu / m
Paper : II	(1) Semester
Name of the Topic	مثنوی . رباعی .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal the previous lession.
Topic Synopsis	1 مثنوی 2 رباعی . 3 مرثیہ
Examples / Illustrations	—
Additional Inputs	Refrence Book News paper . munsib .
Teaching Aids used	white Board . markar Pen . OHP .
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence Books .
Any other Activity	Seminar . Debats . Quiz Question & Answers .

Scanned By Camera Scanner

رباعی

1. رباعی کی تعریف آغاز و ارتقاء۔
2. رباعی گو شعراء کے بارے میں چند اہم خیالات۔
3. رباعی شاعر امجد حیدر آبادی کے حالات زندگی
4. رباعی کی تعریف اپنے انداز و خیال میں۔
5. رباعی گو شاعر احمد کی رباعی کی شاعری۔
6. رباعی کا خلاصہ۔

مرثیہ۔

1. مرثیہ کی تعریف۔
2. مرثیہ گو شعراء کے حالات زندگی۔
3. مرثیہ کا خلاصہ۔

K.L.C. Dec

TEACHING PLAN (SYNOPSIS) February - 21

Name of the Department / Subject	URDU
Name of the Lecturer	Afroz Begum.
Course / Group	BA (EHP) U/M
Paper	IV مثنوی ، انشائیہ ، رباعی
Name of the Topic	مثنوی ، انشائیہ ، رباعی - غزل
Hours required	46
Learning Objectives	
Previous Knowledge to be reminded	Recal the previous lesson.
Topic Synopsis	مثنوی ، رباعی ، انشائیہ ، غزل .
Examples / Illustrations	
Additional Inputs	Refrence books. News paper. munsif.
Teaching Aids used	Black board. chock. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence books.
Any other Activity	Seminar. Quiz. Debats Question and Answer.

Scanned By Camera Scanner

رباعی:

رباعی کی تعریف

رباعی گو شعراء کے حالات زندگی۔

امجد حیدر آبادی کے حالات زندگی۔

رباعی کی تعریف

امجد حیدر آبادی کی رباعی۔

مثنوی

مثنوی کے ادوار

مثنوی پہولبن کے خلاصہ۔ اپنے انداز میں

مثنوی کے اجزائے ترکیبی

مرثیہ

مرثیہ کا خلاصہ

میر ببر علی کے مرثیے۔

TEACHING PLAN (SYNOPSIS) march. 21

Name of the Department / Subject :	URDU
Name of the Lecturer :	Afroj Begum.
Course / Group :	BA (EHP) U/M
Paper :	I II
Name of the Topic	منظم غزل.
Hours required	72
Learning Objectives	
Previous Knowledge to be reminded	Recal The previus session.
Topic Synopsis	نظم غزل. غالب میر تقی میر. فیض احمد فیض
Examples / Illustrations	
Additional Inputs	Refrence books. News paper. munsif.
Teaching Aids used	Blackboard. chack. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence books.
Any other Activity	Quiz. Debates. Quense and Answer.

Scanned By Camera Scanner

غزل

غالب کی غزل کے اشعار کی تشریح۔
میر تقی کی غزل۔
میر تقی میر کے حالات زندگی۔
غالب کے حالات زندگی۔
فیض احمد فیض کی غزل کے اشعار کی تشریح۔
فیض احمد فیض کے حالات زندگی۔

نظم

علامہ اقبال کی نظم چاند اور تارے۔
علامہ اقبال کے حالات زندگی۔
نظم چاند اور تارے کا خلاصہ۔

Anoyer

K. C. Das

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) April - 21

Name of the Department / Subject	URDU
Name of the Lecturer	Afroz Begum
Course / Group	BA (EHP) U/m
Paper	II
Name of the Topic	نثر ۱۔ غزل ۔ داستان
Hours required	72
Learning Objectives	
Previous Knowledge to be reminded	Read the previous lesson.
Topic Synopsis	۱۔ داستان ۲۔ غزل ۳۔ نثر
Examples / Illustrations	—
Additional Inputs	Refrence books. Neews paper. Internet.
Teaching Aids used	black board. chalk books. OHp.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library. refrence books.
Any other Activity	Quiz. Debates. Question and Answers.

Afroz

Scanned By Camera Scanner

2

افسانہ:

1. افسانہ کی تعریف اپنے الفاظ میں۔
2. افسانہ کی تعریف اپنے الفاظ میں۔
3. افسانہ کے اجزائے ترکیبی
4. افسانہ کی کردار اور مرکزی کردار۔
5. افسانہ نگاروں کے حالات زندگی۔
6. افسانہ کے ادوار

داستان:

داستان شروع قصہ کا۔
داستان کی تعریف
داستان نویسی۔
داستان نگاروں کے بارے میں۔
داستان کے اجزائے ترکیبی۔

ناول۔

ناول کے اجزائے ترکیبی
ناول۔ محمد مجتبیٰ حسین کی ناول نویسی۔ تنقید نصوح

TEACHING PLAN (SYNOPSIS) April – 21

Name of the Department / Subject :	Urdu.
Name of the Lecturer :	Afroz Begum.
Course / Group :	BA (EHP) U/M
Paper :	I
Name of the Topic	غزل - نظم . داستان . ناول .
Hours required	72 —
Learning Objectives	—
Previous Knowledge to be reminded	Recal the previous books Lession
Topic Synopsis	غزل . نظم . داستان ناول .
Examples / Illustrations	—
Additional Inputs	Refrence Books . Newspaper . munsif
Teaching Aids used	Black board . chock . Refrence books . OHP .
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library refrence books -
Any other Activity	Quiz . Dabets . Quistion Answers

Afroz

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) Jun. 2022

Name of the Department / Subject :	URDU
Name of the Lecturer :	Afroz Begum.
Course / Group :	BA (EHP) U/m
Paper :	II I
Name of the Topic	داستان . ناول . ڈرامہ .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal the previous lession.
Topic Synopsis	I داستان II 2 . ناول . III 3- ڈرامہ .
Examples / Illustrations	
Additional Inputs	Refrence books · News paper · munsif.
Teaching Aids used	Black board - chock. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library - refrence books.
Any other Activity	Quiz. Debes . Quesion and Answeris

Scanned By Camera Scanner

2

ڈرامہ:

1. ڈرامہ کی تاریخ و ارتقاء
2. کریم روحانی کے حالاتِ زندگی۔
3. کریم روحانی کا ڈرامہ گدڑی کے لعل کا خلاصہ۔
4. ڈرامہ کے اجزاء

III افسانہ

1. افسانہ اور ناول میں فرق۔
2. افسانہ کے کتنے ادوار ہیں۔
3. افسانہ کے اجزاء۔
4. افسانہ نگاری کی کا آغاز و ارتقاء۔

IV ناول۔

1. ناول مرزا ظاہر دار بیگ۔
2. نظیر اکبر آبادی کے حالاتِ زندگی۔
3. نقد و تنقیح میں مرزا ظاہر دار بیگ کا خلاصہ۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) Feb 2022.

Name of the Department / Subject :	Urdu. BA U/M
Name of the Lecturer :	Afroz Begum.
Course / Group :	BA (EHP) U/M
Paper :	I II
Name of the Topic	نظم . غزل . نظم . غزل . ڈرامہ - افسانہ
Hours required	60
Learning Objectives	—
Previous Knowledge to be reminded	Recal the previous sessions
Topic Synopsis	I نظم II غزل III ڈرامہ IV افسانہ
Examples / Illustrations	
Additional Inputs	Refrence Books - Newspaper munsif.
Teaching Aids used	Black board. chock. OHP. Books.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library. refrence books.
Any other Activity	Quiz. Debates Quision & Answers

Scanned By Camera Scanner

I غزل

1. میر تقی میر کی غزل۔
2. میر تقی میر کے حالات زندگی۔
3. غزل کے اشعار کی تشریح۔

II نظم: اقبال کی نظم

2. غزل اور نظم میں فرق
3. علامہ شبلی نعمانی کی نظم محدل خاوری۔
4. منشی احمد فیضی کی نظم لوح قلم۔

III غزل: 1. جگر مراد آبادی کی غزل۔
2. غالب کی غزل۔
3. غالب کے حالات زندگی۔
4. ۔۔۔

IV ۔۔۔: ۔۔۔ گوئٹے کی ملکہ کا خلاصہ۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) March - 2022

Name of the Department / Subject :	Urdu.
Name of the Lecturer :	Afroz Begum.
Course / Group :	BA (EHP) U/M
Paper :	I
Name of the Topic	نظم اور غزل.
Hours required	72
Learning Objectives	
Previous Knowledge to be reminded	Recal The previous session.
Topic Synopsis	I غزل II نظم
Examples / Illustrations	—
Additional Inputs	Refrence Books. News paper munsif.
Teaching Aids used	Black board. Chock. books. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library. refrence books.
Any other Activity	Quiz. Debales. Quiestion. and Answers.

Afrozbegum

Scanned By Camera Scanner

I غزل :-

1. میر تقی میر کی غزل۔
2. غالب کی غزل۔
3. داغ دہلوی کی غزل۔
4. علامہ اقبال کی غزل۔

II نظم :-

1. اقبال کی نظم چاند اور تارے۔
2. نظیر اکبر آبادی کی نظم نصیحت اخلاق
3. فیض احمد فیض کی نظم لہو کا قلم۔
4. علامہ شبلی نعمانی کی نظم عدل فاروقی۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) April : 2022

Name of the Department / Subject	Urdu.
Name of the Lecturer	Afroz Begum.
Course / Group	BA (GHP) U/M.
Paper	I
Name of the Topic	نظم . غزل .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal The previous session.
Topic Synopsis	1. غزل ، میر کی غزل 2. غالب کی غزل 3. نظم ، حالی کی غزل۔
Examples / Illustrations	—
Additional Inputs	Refrence books. Neaes papers munsif.
Teaching Aids used	Black boord. chock. Refrem books. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library. refrence Bodis —
Any other Activity	Quiz. Debats. Quision. Answer.

Scanned By Camera Scanner

غزل:

I. میر کی حالات زندگی پر نوٹ لکھیے

(2) میر کی غزل گوئی پر ایک نوٹ لکھیے

(3) میر کی غزل کی تشریح کیجیے۔

(4) غزل کے اشعار کی تشریح۔

(5) ردیف، قافیہ، مقطع۔

تخلص

مطلع

مقطع۔

(6) غزل کی تعریف کیجیے۔

II. غالب کی غزل۔

(1) غالب کے حالات زندگی۔

(2) غالب کی غزل گوئی پر نوٹ۔

(3) غالب کی غزل کے اشعار کی تشریح۔

(4) غالب کی استاد گری اور شاگردگی۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) May, 2022

Name of the Department / Subject	URDU for Urdu Second language.
Name of the Lecturer	Afroz Begum.
Course / Group	BA (EHP) Urdu Mediam.
Paper	IV
Name of the Topic	غزل . نظم
Hours required	72
Learning Objectives	
Previous Knowledge to be reminded	Recal The Porevious leesian.
Topic Synopsis	I غالب کی نظم II میر کی غزل . III حالی کی نظم IV نظیر اکبر آلہ آبادی کی نظم
Examples / Illustrations	
Additional Inputs	Refrence books . News paper. munsif.
Teaching Aids used	white Board. chock. pen OHP. markar.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library refrence books.
Any other Activity	Saminors. Debates. Quiz. Questions answ

Afroz Beg

Scanned By Camera Scanner

غزل

1. غالب کی غزل گوئی پر آپ کے خیالات۔
2. غالب کی مشہور غزلیں۔
3. غالب کی سوانح حیات۔
4. غالب کے تخلص اور خطابات

نظم

1. اقبال کی نظم چاند اور تارے
2. اقبال کے حالات زندگی۔
3. علامہ اقبال کی نظم گوئی پر روشنی ڈالیے۔
4. علامہ اقبال کی نظم کا خلاصہ۔
5. چاند اور تارے کا خلاصہ۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) June, 2022

Name of the Department / Subject	Urdu/M Urdu second language
Name of the Lecturer	Afroz Begum.
Course / Group	BA. (EHP) Urdu/M
Paper	II
Name of the Topic	غزل۔ نظم قصیدہ ۔ رباعی۔
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal the previous lession
Topic Synopsis	I نظم II غزل۔ III قصیدہ ۔ IV رباعی
Examples / Illustrations	—
Additional Inputs	Refrence books. News paper. munsif.
Teaching Aids used	Board. Markar. pen OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence Books.
Any other Activity	Seminor Debate. Quiz. Questions and Ans.

Afroz

Scanned By Camera Scanner

غزل اور نظم

(1) اقبال کی نظم

(2) غالب کی نظم

(3) میر کی نظم

(4) غالب کی غزل

(5) حالی کی غزل

(6) میر نصیر میر کی غزل۔

(7) یادگار غالب۔

(8) مسدس حالی

(9) مدوجزر اسلام۔

(10) حالی کی مسدس حیات۔

Anoyaa

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) July 2022

Name of the Department / Subject	Urdu/m Urdu Second Language.
Name of the Lecturer	Afroz Begum.
Course / Group	BA (EHP) U/m
Paper	II
Name of the Topic	داستان . ناول . قصیدہ . رباعی .
Hours required	92
Learning Objectives	—
Previous Knowledge to be reminded	Reacal the previous lession.
Topic Synopsis	I داستان II افسانہ III ناول . IV قصیدہ . V رباعی .
Examples / Illustrations	—
Additional Inputs	Refrence books. News paper . munsif.
Teaching Aids used	Boaid check. Books. OHP .
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library. refrence books.
Any other Activity	Seminors. Debites Quize. Question & Ans.

Afroz

Scanned By Camera Scanner

I قصیدہ

II رباعی۔

III مرثیہ

I قصیدہ :

① غالب کی قصیدہ گوئی پر نوٹ لکھئے۔

② قصیدہ کا آغاز و ارتقا۔

③ قصیدہ گو شعراء کا انتخاب

④ قصیدہ کے اجزائے ترکیبی۔

⑤ قصیدہ کے قسمیں۔

① تشبیب

② گریز۔

③ مدح

④ دعا۔

II رباعی

① رباعی گو شعراء۔

② رباعی کے آغاز و ارتقاء۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) August 2022

Name of the Department / Subject	Urdu / M Urdu Second language.
Name of the Lecturer	Afroz Begum.
Course / Group	BA (EHP) U/M
Paper	II
Name of the Topic	رباعی . مرثیہ .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal The previous lession.
Topic Synopsis	III قصیدہ . IV رباعی V مرثیہ
Examples / Illustrations	—
Additional Inputs	Refrence Books. Neaes paper. Munsif.
Teaching Aids used	Boaard. chock. Books. pen. OHP.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Books.
Any other Activity	Seminar. Debats. Quize. Question & Ans.

Number

Scanned By Camera Scanner

IV رباعی

① رباعی کا آغاز و ارتقاء۔
② رباعی گو شعراء۔
③ امجد حیدر آبادی کے حالات زندگی۔
④ ساغر جیدی کے حالات زندگی۔
⑤ امجد حیدر آبادی کی رباعی کا خلاصہ
⑥ ساغر جیدی کی رباعیات۔
⑦ ساغر جیدی کی رباعی کا خلاصہ
⑧ رباعی کے اوزان اور رباعی کی تعریف

V مرثیہ۔

① مرثیہ کی تعریف۔
② مرثیہ گو شعراء
③ میر انیس کی مرثیہ گوئی۔
④ مرزا دبیر کی مرثیہ گوئی۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) September 1, 2022

Name of the Department / Subject :	BA (EHP) Urdu mediam I II
Name of the Lecturer :	Afroz Begum .
Course / Group :	BA (EHP) U/M
Paper :	muntaqib-e-Adab منتخب ادب
Name of the Topic	شاعری ، نظم اور غزل .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal the pervous lession .
Topic Synopsis	میر تقی میر کے حالات زندگی . میر کی غزل . میر کے متعلق میر کی غزل گوئی . علامہ اقبال کے حالات زندگی .
Examples / Illustrations	—
Additional Inputs	Refrence books . News paper munsife
Teaching Aids used	Black board chock . OHP .
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence books .
Any other Activity	Semiior Debates . Questions Answers .

Afroz Begum

Scanned By Camera Scanner

2 غزل

1 نظم

III غزل کی تعریف۔

IV میر تقی میر کی غزل۔

V میر کے حالات زندگی۔

VI میر کی غزل گوئی

VII حفیظ احمد حفیظ کے حالات زندگی۔

II 2 میر امن کے حالات زندگی۔

II میر امن کی داستان نویسی۔

III باغ و بہار کا خلاصہ۔ اپنے خیالات میں۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) October 2022

Name of the Department / Subject	Urdu Second Language Urdu Dep.
Name of the Lecturer	Afroz Begum.
Course / Group	I & II Year
Paper	I Semester Urdu & III Sem
Name of the Topic	غزل - نظم . رباعی . قصیدہ .
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	lession. Recal the previous lessions
Topic Synopsis	1 غزل - میر کی 2 غزل ، غالب کی 3 غزل - فیض کی 4 . قصیدہ - 5 . رباعی .
Examples / Illustrations	—
Additional Inputs	Refrence books . News paper . munsif Aaj tak
Teaching Aids used	Black board . chock . Map . Books .
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library Refrence books .
Any other Activity	Seminor . Debates . Questions and Answers .

Afroz Begum

Scanned By Camera Scanner

I. غزل: میر تقی میر

1. میر تقی میر کے حالاتِ زندگی۔
2. میر کی غزل گوئی۔
3. علامہ اقبال کے حالاتِ زندگی۔
4. علامہ اقبال کی غزل نظم

II. علامہ اقبال کی نظم چاند اور تارے

1. علامہ اقبال کی نظم چاند اور تارے کا خلاصہ۔
2. قاضی احمد قیس کے حالاتِ زندگی۔

III. رباعی

1. امجد حیدر آبادی کے حالاتِ زندگی۔
2. امجد حیدر آبادی کے رباعی۔
3. قصیدہ گوئی

TEACHING PLAN (SYNOPSIS) November 2022

Name of the Department / Subject	Urdu Second language.
Name of the Lecturer	Afroj Begum.
Course / Group	BA(EMP) U/M E/m. B.com. B.Sc.
Paper	I and III
Name of the Topic	نظم. غزل. داستان. ناول.
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal the poreavious lessions.
Topic Synopsis	I غالب کی غزل. II شبلی نعمانی کی نظم III مومن خاں مومن کی غزل. I داستان. II ناول. III رضانہ
Examples / Illustrations	R. —
Additional Inputs	Refrence books. News paper. munsif Aajlak.
Teaching Aids used	Black board. Chock. OHP. Books.
References cited	—
Student Activity Planned after the teaching	I —
Activity Planned outside the Class room, if any	Library refrence books.
Any other Activity	Seminors. Debates. Quetions & Answers.

Afrozbeg — 35

Scanned By Camera Scanner

X غالب کی غزل۔

1. غالب کے حالات زندگی۔
2. غالب کے غزل گوئی پر نظر
3. غالب کے اہم کتابیں
4. مرزا اسد اللہ خاں غالب کی غزلیں۔

XI علامہ شبلی نعمانی۔

1. علامہ شبلی نعمانی کے حالات زندگی۔
2. علامہ شبلی نعمانی کی شاعری
3. علامہ فاروقی اکا خاکہ

XII مومن خاں مومن کی غزل۔

1. مومن خاں مومن کے حالات زندگی۔
2. مومن خاں مومن کی غزل گوئی کے بارے میں۔
3. علامہ شبلی نعمانی کے حالات زندگی کے بارے میں لکھئے۔

Scanned By Camera Scanner

TEACHING PLAN (SYNOPSIS) Desember-2022

Name of the Department / Subject	Urdu Second language
Name of the Lecturer	Afroz Begum.
Course / Group	I and II BA (EHP) U/M. E/M. BSc B.com.
Paper	I & II Sem
Name of the Topic	داستان۔ ناول۔ افسانہ۔
Hours required	72
Learning Objectives	—
Previous Knowledge to be reminded	Recal The pourious lessions.
Topic Synopsis	I علامہ سہیل عظمانی II ابوالکلام کی نثر III مرثیہ نگاری IV مضمون نگاری۔
Examples / Illustrations	—
Additional Inputs	Refrence books. News paper. mansib.
Teaching Aids used	Black board. chock. OHP. Books.
References cited	—
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	Library refrencebooks.
Any other Activity	Seminor Questions & Answers. Quize

Afroz

Scanned By Camera Scanner

2 علامہ شبلی نعمانی ۔

1. علامہ شبلی نعمانی کے حالات زندگی ۔
2۔ علامہ شبلی کی نظم عدل فاروقی ۔
3. نظم "عدل فاروقی" کا خلاصہ ۔

11 ب ۔ عبدالصمد کی نظم

1. عبدالصمد کے حالات زندگی ۔
2. عبدالصمد کی نظم عدل لوح قلم ۔
3. نظم لوح قلم کا خلاصہ ۔

11 ج ۔ مرثیہ نگاری

1. مرثیہ نگاری کے بارے میں تفصیل سے لکھئے ۔
2. مرثیہ نگار، میر ببر علی۔ اور میر انیس

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Special English.
Name of the Lecturer :	Mrs. K. L. C. Devi.
Course / Group :	III BA - EPJ - Semester V
Paper :	An outline of 20th century Literature.
Name of the Topic	Setting, Point of view Shooting an Elephant
Hours required	2 + 2 + 4.
Learning Objectives	TO Learn the topics, to critically appreciate them.
Previous Knowledge to be remained	1) Aristotle's Nature of Plot (Setting & Point of View) 2) Anti Colonial Fight and related incidents
Topic Synopsis	I Point of view : Point of view is a reflection of the opinion of an individual from real life or fiction. In Literature "Point of view" is the mode of Narration that an author employs; to let the readers "hear or see" what takes place in a story, poem, essay etc... It's the position of the narrator, in relation to the story being told & observed.
Examples / Illustrations	1) Indian Freedom struggle (Shooting an Elephant) 2) Plot, Character in a Tragedy (Setting, Point of View)
Additional Inputs	Aristotle's definition of Tragedy.
Teaching Aids used	ICT.
References cited	1) Tribal Rebellion : Anti Colonial Movement in Jungle mahal from 1767 to 1832 by Anup Kumar Mandal 2) Aristotle's "The Poetics"
Student Activity Planned after the teaching	TO narrate simply any Anti-colonial movement in India during freedom struggle
Activity Planed outside the Class room, if any	1) TO list out anti colonial fights in foreign lands. 2) Studying Aristotle's definition of Tragedy
Any other Activity	1) TO study Aristotle's "The Poetics" 2) TO study about Anti Colonial Movements 3) TO paraphrase the text.

II Setting: Setting is important in every novel & drama or poem. The setting can be natural, social, Psychological space etc. The setting can be a natural one. The setting is the place and time at which a play, novel or film is represented as happening. It is also the context and environment.

III Shooting an Elephant: George Orwell.

"The extract" by George Orwell "Shooting an Elephant" is his own personal experience. Orwell was assigned to kill the elephant which grew rampant and killed a villager. Orwell was working as a Police officer in Burma. He was dictated by the British Police officers to kill the elephant.

By that time the elephant was relieved of its "mast" and it was normal. The villagers promted him to kill the elephant. To be driven by the shouts of the villagers, not to be ashamed of in front of them and being led by the Police Department's orders, finally George Orwell fired at the elephant. But he was unable to witness the painful and the agonizing death of Elephant. He concludes that the Elephant and he himself were the "victims" of the Colonial dominant rule.

Name of the Department / Subject :	English / Special English.
Name of the Lecturer :	Mrs. K. L. C. Devi.
Course / Group :	III B A - EPJ - Semester V.
Paper :	An Outline of Twentieth century Literature
Name of the Topic	Pygmalion - George Bernard Shaw
Hours required	5 hours.
Learning Objectives	To appreciate the literary values - dramatic techniques
Previous Knowledge to be remained	To discuss the world famous dramas of William Shakespeare.
Topic Synopsis	In "Pygmalion" the Professor, Henry Higgins of Phonetics takes on a flower girl named Eliza Doolittle. He intends to turn Eliza into a lady by teaching her elocution. He succeeds but never truly believes that she's a lady and as a result Eliza runs away escaping his tyranny. This is a problem play that examines a social issue
Examples / Illustrations	Social issues, Feminine Sensitivity Psychological Issues of women.
Additional Inputs	Dramatists like William shakespear - Marlowe and contemporaries and their wor
Teaching Aids used	Smart board for Google informatio
References cited	Plays by George Bernard shaw George Bernard Shaw's Works (Play) "Pygmalion".
Student Activity Planned after the teaching	Writing : Give an account of the theme of Pygmalion.
Activity Planed outside the Class room, if any	To think and note some sensitive issues of women.
Any other Activity 1) 2)	Women's issues and their solution Women Empowerment.

* 1) Pygmalion 3) Heartbreak House 5) Man and Superman
4) Saint Joan 4) Candida.

Name of the Department / Subject :	English / Special English.
Name of the Lecturer :	Mrs. K.L.C. DEVI
Course / Group :	III B A - EPJ VI Semester.
Paper :	An Outline of Twentieth Century
Name of the Topic	Free verse, Psychological Novel, Stream of consciousness novel
Hours required	2
Learning Objectives	To learn the salient features of Free verse Psychological Novel Stream of consciousness Novel
Previous Knowledge to be remained	The review of the related Poems.
Topic Synopsis	Free verse :- Free verse is an open form of the verse or Poetry. It doesn't use the consistent meter, patterns, rhyme or any other musical pattern. Many poems composed in Free verse thus tend to follow the rhythm of natural speech. In this way the poet can give his own shape to a poem she/he desires. Free verse appeals in its own way.
Examples / Illustrations	• The Rise and growth of Psychology and other Science • Impact of Psychology. • Freedom of mind
Additional Inputs	Stream of Consciousness Novel : Anita Desai "Cry the Peacock". & Dostoyevsky's "Crime and Punishment"
Teaching Aids used	ICT.
References cited	• Free verse : An Essay on Prosody - Charles O. Hartman • Literature and Psychology in the context of the Interaction of Science (paper) Badegul Can Emir Karadeniz Technical University Turkey
Student Activity Planed after the teaching	Paraphrasing with example.
Activity Planed outside the Class room, if any	Note making.
Any other Activity	Studying the references for thoroughness of the topics

II Stream of Consciousness Novel. In Literature Stream of Consciousness is a method of Narration that describes in words the flow of thoughts in the minds of the characters. Another appropriate term for this device is "Interior Monologue". It differs from "Dramatic Monologue" or "Soliloquy". The "Stream of consciousness" is generally associated with the Novelists of 20th century. EX: "Cry the Peacock" – Anita Desai "The Portrait of the Artist as an young man" – James Joyce

II Psychological Novel: Psychological Novel is the work of Fiction in which the thoughts, feelings and motivations of the characters are of equal and greater importance and interest. In literature psychological fiction is a narrative genre. One of the greatest writers of the genre was, Fyodor Dostoyevsky. His "Crime and Punishment" is an example.

William Shakespeare's Hamlet is perhaps the prime example of it in dramatic form.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K.L.C.DEVI
Course / Group :	III B.A - EPJ - V Semester
Paper :	An outline of 20th century Literature
Name of the Topic	Setting, Absurd Drama Romance Kitchen Sink Drama, Bildungsroman
Hours required	each 2 hours
Learning Objectives	To learn about the types and genres of 20th century's Literature
Previous Knowledge to be remained	Victorian Age's writings.
Topic Synopsis	I Absurd Drama: The "Theatre of the Absurd" is a post World war II design-ation for particular plays of "Absurd Drama" by a number of primarily European playwrights in the late 1950s. The Absurd Drama focuses on ideas of existentialism and expresses what happens when human existence lacks meaning or purpose EX: i) The Lesson (1951) - Eugene Lonesco (French playwright) ii) Rhinoceros (1959) " " Romanian playwright
Examples / Illustrations	1) Existentialism – Absurd Drama 2) "Kitchen Sink School" term is coined by David Sylvester 3) Mark Twain's – Huck Fin
Additional Inputs	1) War Novels 2) Stream of consciousness Novels.
Teaching Aids used	ICT.
References cited	1. "Your Complete Guide to Literary Devices" 2. "Figures of Speech" by Arthur Quinn
Student Activity Planned after the teaching	To make notes of the topics by referring so as to prepare for short answers
Activity Planed outside the Class room, if any	To study the topics in detailed with the examples discussed in the class.
Any other Activity	

II Kitchen Sink Drama: Kitchen SINK Drama is a term coined to describe a British cultural movement. It developed in the late 1950s and early 1960s in Theatre, arts, NOVels, Films and Television Plays. The protagonist could be described as "Angry young man". who is disillusioned with Modern Society. It uses a style of Social Realism
EX: 1. "Look back in Anger" (1956) by John Osborne
2. "A Taste of Honey" (1958) - by Shelagh Delaney

III Bildungs Roman:— Bildungsroman is a literary genre that focuses on the psychological and moral growth of a protagonist from youth to adulthood, in which character's change is extremely important. A Bildungsroman relates the growing up of a sensitive person who goes in search of answers to life's questions.
EX: 1) The Adventures of Huckleberry Fin (1884 — Mark Twain
2) Gone with the Wind;— Margaret Mitchell (1936)

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Special English
Name of the Lecturer :	Mrs. K.L.C. DEVI
Course / Group :	III BA - EPJ V Semester
Paper :	An outline of Twentieth Century.
Name of the Topic	Church Going : Philip Larkin
Hours required	4 Hours.
Learning Objectives	TO appreciate the style of the poem.
Previous Knowledge to be remained	The trends of 20th century's poetry.
Topic Synopsis	The Poem "Church Going" is written by Philip Larkin. The speaker "sneaks" into a church after making sure it's empty. He asks himself what will happen to the churches where there are no more believers left in the world. He assures himself that church is a serious place and supports the believers. The theme is that the modern man is skeptical about everything
Examples / Illustrations	Tintern Abbey — William Wordsworth
Additional Inputs	The poetic styles, themes, modern experimental poetry
Teaching Aids used	ICT Based.
References cited	"Collected Poems" - Philip Larkin.
Student Activity Planned after the teaching	Writing : The questions raised by the poet and the answers he arrives at.
Activity Planed outside the Class room, if any	1. Summarizing 2. Aptness of the poem in 20th century
Any other Activity	1) State some themes of Variety and Modernity for poetry 2) Bring out the newness of the theme of "Church Going"

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English. / Literature
Name of the Lecturer :	Mrs. K.L.C. DEVI
Course / Group :	III B.A - EPJ - Special English.
Paper :	An Outline of Twentieth century Literature
Name of the Topic	Whitsun Weddings : Philip Larkin
Hours required	3
Learning Objectives	TO make the students appreciate the poem
Previous Knowledge to be remained	Poetry / poem of the Romantic Age. "The solitary Reaper" by William wordsworth
Topic Synopsis	Philip Larkin is one of the leading post-war British poets. "The poem "Whitsun weddings" describes the speaker's Journey into London on Whitsunday. He observes the marriage groups boarding the train. The Whitsun day is a specially granted Sunday by the British Government sanctioning the marriage Tax exemption to the middle class people. The poet's keen observations on marriage are thought provoking
Examples / Illustrations	"The Whitsun weddings" (1964) a collection of 32 poems by Philip Larkin.
Additional Inputs	Larkin's Best poems are : "The Whitsun Weddings" "Days" "Mr. Bleaney" etc...
Teaching Aids used	ICT.
References cited	"The poetry of Philip Larkin : A critical study" by K. Ramamoulty.
Student Activity Planned after the teaching	The sequence of the poet Philip Larkin's observations about the system of "Marriage"
Activity Planed outside the Class room, if any	Pick out the phrases from the poem, that sound new and distant for the theme of the poem
Any other Activity	Find out the Festivals celebrated in Summer in Europe with the significance

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K.L.C. DEVI.
Course / Group :	III BA - EPJ - V Semester
Paper :	An Outline of 20th century Literature
Name of the Topic	chapter 5 of "A Room of One's own" Virginia woolf
Hours required	4 hours.
Learning Objectives	To study and understand the feministic literature - "A Room of One's own"
Previous Knowledge to be remained	Victorian Age's Women Authors.
Topic Synopsis	Virginia woolf finds a recent debut novel by carmichael in the rack Woolf considers the unexpected stylistic shifts of carmichael. By the 19th century women grew more complex in Novels she believes that the idea of friendship is groundbreaking in literature. Woolf feels that the women writers of the New Age have broader Education
Examples / Illustrations	1. Feminism. 2. Feministic Literature
Additional Inputs	1. Women Empowerment 2. Women Education.
Teaching Aids used	ICT
References cited	"A Room of One's own" - Virginia woolf "Virginia woolf" : Hermione Lee.
Student Activity Planned after the teaching	To compile the ideas of Virginia woolf in the 5th chapter of "A Room of One's own"
Activity Planed outside the Class room, if any	Paraphrasing the feminine supporting view points of virginia woolf
Any other Activity	Review the feminine authors of Victorian Age Ex: Jane Austen.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K. L. C. DEVI.
Course / Group :	III BA - EPJ - V Semester
Paper :	An Outline of 20th century Literature
Name of the Topic	chapter 5 of "A Room of One's own" Virginia woolf
Hours required	4 hours.
Learning Objectives	TO study and understand the feministic literature - "A Room of One's own"
Previous Knowledge to be remained	Victorian Ages Women Authors.
Topic Synopsis	Virginia woolf finds a recent debut novel by carmichael in the rack woolf considers the unexpected stylistic shifts of carmichael. By the 19th century women grew more complex in Novels she believes that the idea of friendship is groundbreaking in literature. woolf feels that the women writers of the New Age have broader Education
Examples / Illustrations	1. Feminism. 2. Feministic Literature
Additional Inputs	1. Women Empowerment 2. Women Education.
Teaching Aids used	ICT
References cited	"A Room of One's own" - Virginia woolf "Virginia woolf" : Hermione Lee.
Student Activity Planned after the teaching	TO compile the ideas of Virginia woolf in the 5th chapter of "A Room of One's own"
Activity Planed outside the Class room, if any	Paraphrasing the feminine supporting view points of virginia woolf
Any other Activity	Review the feminine authors of Victorian Age EX: Jane Austen.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Special English.
Name of the Lecturer :	Mrs. K.L.C DEVI.
Course / Group :	III B.A - EPJ - V Semester
Paper :	An outline of 20th Century Literature - V
Name of the Topic	Twentieth century NOVEL
Hours required	5 hours.
Learning Objectives	TO learn the trends, literary back-ground influences of 20th century's Novel.
Previous Knowledge to be remained	TO review and have a talk about novels.
Topic Synopsis	At the turn of 19th century and at the beginning of 20th century English Novel has become very popular and influ-ential. The novel has eclipsed the Poetry and Drama. The modern man under the influence of science fast growing mental capabilities requires discussion, logic, clarifica-tion and analysis. This has contribu-ted to the Rise of Novel in 20th century
Examples / Illustrations	Modern, 20th century, new trend novelists James Joyce, Joseph Conrad Virginia Woolf and others
Additional Inputs	Realism, Pessimism, Frustration of the modern world serve as the themes.
Teaching Aids used	ICT.
References cited	"Ulysses" by James Joyce "A Portrait of the artist as a young Man" - James Joyce,
Student Activity Planned after the teaching	write short notes on "variety and complexity" "Art and Techniques" "Realism and Pessimism"
Activity Planed outside the Class room, if any	Explain in simple words - what do you mean by - Decay of character and Plot.
Any other Activity	what are the sub genres of Novels?

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K. L. C. DEVI.
Course / Group :	III B. A - EPJ - V Semester
Paper :	An outline of 20th century Literature.
Name of the Topic	Twentieth century Poetry and Drama
Hours required	5 hours.
Learning Objectives	To let the students understand the trends of 20th century Literature's genres.
Previous Knowledge to be remained	How Victorian Age has influenced the beginning of modernity, newness in Literature?
Topic Synopsis	Drama :- Sigmund Freud and Carl Jung inspired an interest in Myth and dreams as playwrights became familiar with his studies of psychoanalysis. Realism, Social realism, Symbolism Surrealism, Expressionism are the predominant dramatic elements of 20th century. George Bernard Shaw became one of the first English playwrites who portrayed empowered women characters by Edward Quinn
Examples / Illustrations	Variety, complexity, Exploration, Realism, Psychological Influences .....
Additional Inputs	"The waste Land" by T. S. Eliot Nobel Prize winning poem.
Teaching Aids used	ICT | References : History in Literature: A Reader's guide to 20th century History and the Literature it Inspired
References cited	write in brief, the striking features of 20th century's Poetry and Drama.
Student Activity Planned after the teaching	What is the impact of Psychology on Literature in 20th century ?
Activity Planed outside the Class room, if any	How do you justify that the modern poets are poet of outstanding excellence ?
Any other Activity	What are the features of modern poetry that make the 20th century's Literature more humanistic and realistic ?

20 th century Poetry: The year 1890 may be taken as the turning point in Poetry in 20 th century. The output of Poetry is abundant. There is much eccentricity and whimsicality The modern poets are also of great poetic excellence.

The revolt and realism are best exemplified in the poetry of T.S. Eliot W.B. Yeats is the greatest mystic poet of the 20 th century. The modern poets are humanistic. The modern poets depict the grim realities of life. The poets like D.H. Lawrence, Gibson, David Masefield are the examples of this kind of modernistic writings and the contributions.

III Semester **TEACHING PLAN (SYNOPSIS)** 2021-22

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K.L.C DEVI.
Course / Group :	II B.A - EPJ IV Semester
Paper :	Restoration and Augustan Periods. 17th & 18th centuries
Name of the Topic	Restoration Period.
Hours required	2 to 3 hours.
Learning Objectives	To let the students understand the salient features of "Restoration Period".
Previous Knowledge to be remained	Renaissance Period. Elizabethan Age.
Topic Synopsis	Restoration Age starts from 1660 in the History of English Literature. The Literature and its status has been restored during this Age. The Restoration Age is an Age of Poetry. Political events shaped into Poetry. This Age also sees "Pilgrim's Progress", LOCKE's "Treatises of Government" "the founding of the Royal Society. The Age reflects special Trends in Literature
Examples / Illustrations	The pioneer critic - John Dryden. This period also has witnessed "The Paradise Lost" by John Milton
Additional Inputs	The Restoration period has seen the starting of two genres: Fiction and Journalism
Teaching Aids used	ICT.
References cited	① The Broadview Anthology of Restoration and early 18th century J. Douglas canfield ② Restoration comedy: David Womersley
Student Activity Planned after the teaching	Salient features of Restoration Period
Activity Planed outside the Class room, if any	what are the land marking characteristics of "Restoration Period"?
Any other Activity	HOW do the genres of Novel and Journalistic Literature begin during the Restoration Period ?

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K.L.C. DEVI
Course / Group :	II B.A EPJ – III Semester
Paper :	Restoration and Augustan Period
Name of the Topic	Augustan Period.
Hours required	3 hours.
Learning Objectives	To let the students understand the characteristics of Augustan Age
Previous Knowledge to be remained	Age of Renaissance Age of Restoration.
Topic Synopsis	Augustan Age is the Age of the first half of the 18th century. Augustan Age is also called "The Age of Alexander Pope". The Augustan Age sees the development of Novel. This age is also called the "Age of Prose and Reason". The Augustan Period was marked by the bold Political writings. These political writings were great by Satires. Alexander Pope's "The Rape of the LOCK" was a famous satire.
Examples / Illustrations	"The Rape of the LOCK" – Alexander Pope "Gulliver's Travels" – Jonathan Swift
Additional Inputs	"The Age of Prose and Reason" Political satire
Teaching Aids used	ICT.
References cited	The Battle of the Books : History and Literature in the Augustan Age by Joseph M. Levine
Student Activity Planned after the teaching	The salient features of the Augustan Age.
Activity Planed outside the Class room, if any	Give a brief account of how the novel has started during the Augustan Age.
Any other Activity	Justify the Augustan Age as the Age of Prose and Reason.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Special English.
Name of the Lecturer :	Mrs. K.L.C. DEVI.
Course / Group :	II B.A EPJ – III Semester
Paper :	Restoration and Augustan Periods : 17th & 18th centuries
Name of the Topic	Satire, MOCK EPIC, Heroic couplet
Hours required	each topic 2 hours.
Learning Objectives	TO learn and study Satire, MOCK EPIC Heroic couplet
Previous Knowledge to be remained	Sub genres of Poems – ode, Ballad, Epic, Lyric etc...
Topic Synopsis	I Satire :- Satire is a literary style which has become popular in the 18th century. Satire makes use of humour, irony, exaggeration, ridicule to point out the vices and misdoings of people or any system. Alexander Pope's "The Rape of the LOCK" (1712) by Alexander Pope is a world famous satire. Another example is Jonathan Swift's "Gulliver's Travels"
Examples / Illustrations	Examples of the forms, poetic styles in Poetry
Additional Inputs	Satires : Their functions.
Teaching Aids used	ICT
References cited	1) The Battle of the Books – Jonathan Swift 2) The Anatomy of Satire. An Exhibition of Satirical Writing – Colwyn Williamy
Student Activity Planned after the teaching	1. Note making. 2. TO list out the genres of Poems.
Activity Planed outside the Class room, if any	TO write on any one of Ballad, Ode, Lyric with examples.
Any other Activity	1. Write about the types of Satires. 2. Make the listed out points 5 to 6 of the topics.

II MOCK Epic:— MOCK Epic or MOCK Heroic is typically a satire & Parody.

Alexander Pope's "The Rape of the Lock" is a MOCK Epic. The theme of the MOCK Epic is an imitation with comical effects and underlying criticism in it. Epic deals with a grand theme. MOCK-Epic mocks at the theme, satirically showing the follies of people. By doing so a MOCK-Epic employs and makes use of all literary devices.

III Heroic Couplet :— Heroic couplet is a couplet of rhyming iambic pentametres often forming a distinct rhetorical as well as metrical unit. It is commonly used in Epic and narrative poetry. The Heroic couplet is identified with the works of John Dryden and Alexander Pope.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs K L C DEVI
Course / Group :	II BA - E P J - III Semester - Restoration and Augustan Periods, 18th century
Paper :	Restoration and Augustan Periods
Name of the Topic	Epic Style, Heroic Tragedy, Sentimental comedy
Hours required	1 to 2 hours for each Topic
Learning Objectives	TO let the students understand the literary terms with examples.
Previous Knowledge to be remained	Epic, Tragedy, satire, comedy, MOCK Epic etc...
Topic Synopsis	EPIC STYLE:- Epic deals with the heroic deeds of a person of an unusual courage and unparalleled bravery. TO depict this courage and bravery Epic uses grand style. The Epic starts with an invocation to Muse. Example: The grand theme of "The Paradise Lost" by John Milton is "to Justify the ways of God to men". Epic employs many literary divices and figures of speech. Examples: Similes, metaphors, Imagery etc.
Examples / Illustrations ① ②	"Paradise Lost" by John Milton (Epic) Epic was to Poetry and the Heroic tragedy was meant to the drama "The Indian Emperor" (1665)
Additional Inputs ③ ↳ classical	The best known Sentimental comedy is Sir Richard Steele's "The Conscious Lovers" (1722) Epic, Tragedy, comedy.
Teaching Aids used	ICT.
References cited	A Glossary of Literary Terms by M H Abrams Geoffrey Galt Harpham
Student Activity Planned after the teaching	TO paraphrase Epic style, Heroic Tragedy, Sentimental comedy with examples.
Activity Planed outside the Class room, if any	TO prepare the themes of literary forms in simple words.
Any other Activity	Epic features, Salient features of a Tragedy and comedy

Heroic Tragedy :- "Heroic Tragedy" is a name given to the form of Tragedy in the beginning of the Restoration Age (1660 to 1700). It was drama in Epic mode - grand, rhetorical and declamatory at its best. John Dryden and Howard produced "The Indian Queen" (1964). This play was successful. Heroic Tragedy was influenced by French Classical Tragedy and its dramatic unities of Time, Place and Action. It aimed at Epic thus heroic, grandeur, usually by means of exotic settings and lavish scenery.

Sentimental comedy :- Sentimental comedy is an 18th century's dramatic genre. The genre sprang up as a reaction to the immoral tone of English Restoration plays. In Sentimental comedies middle class protagonists triumphantly over-come a series of moral trials. Sentimental comedy aimed at producing tears rather than laughter.

Examples :- ① Love's Last Shift (1696) by colley Cibber

② The constant couple (1699) by the Irish write r George Farquhar.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K L C DEVI
Course / Group :	II B A EPJ - III Semester
Paper :	Restoration and Augustan Periods 17th and 18 centuries
Name of the Topic	Periodical Essay, Gentle comedy / Comedy of manners
Hours required	1 - to 2 hours per each topic
Learning Objectives	to let the students understand the genres and their origin, development with examples
Previous Knowledge to be remained	The forms of Drama, Development, different sub-genres.
Topic Synopsis	Periodical Essay :- The Periodical Essay was a new literary form that emerged during the early part of the 18th century. Periodical essays appeared in affordable publications. For the most part, the readers of the Periodical Essays were the educated, Intellectual people. "The Spectator" (1711-1712) was the most successful and influential single Essay Periodicals of the 18th century. The roots of the periodical essays can be traced back to the late 17th century.
Examples / Illustrations	1. Periodical Essay : "The Tatler" - a literary and society Journal, began in 1709 2. The Growth of Novel into many sub genres.
Additional Inputs	The Rise of Middle class during Victorian century led to the Rise of Novel.
Teaching Aids used	ICT
References cited (Epistolary novel)	1. Comedy of manners by David L. Hirst 2 - Don Quixote - Miguel de Cervantes (Picaresque) 3. "The colour Purple" (1983) by Alice Walker
Student Activity Planned after the teaching	Paraphrasing Periodical Essay, Gentle comedy / Comedy of manners, Picaresque novel, Epistolary Novel
Activity Planed outside the Class room, if any	Give examples of the genres mentioned with a simple analysis of the themes.
Any other Activity	How does the Drama or Tragedy or Comedy branch out ? A short notes.

Gentle comedy: Gentle comedy is the genre of English drama developed during 17th and 18th centuries. Gentle comedy deals with the themes with happy ending. Gentle comedy and comedy of Manners belong to the same genre. The comedy of manners is about the elegant artistocracy with their vices, intrigues and outward glamour of polished behaviour.

Example: "The Importance of Being Earnest" (1895)

The socially diverse audience included both Aristocrats and substantial middle class people.

Picaresque Novel:- A picaresque Novel is a genre of Prose Fiction that depicts the adventures of a roguish but "appealing hero" of a low social class who lives by his wits in a corrupt society. Picaresque novel typically adopt a realistic style with the elements of comedy and satire. The examples are Cervantes "Don Quixote"

(2) Charles Dickens' "Pickwick papers".

Epistolary Novel:- The Epistolary Novel is a Novel with series of documents. The usual form is letters, diary entries, Newspaper clippings and some other documents. The impression of authenticity is created with the help of documents.

Examples: "The moonstone" by Wilkie Collins (1868)

"If I were a Boy" (1936) by Haki Stermilli

The Epistolary Novel adds greater realism to story

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	English / Literature
Name of the Lecturer :	Mrs. K.L.C. DEVI
Course / Group :	II BA EPJ – III Semester
Paper :	Restoration and Augustan Periods.
Name of the Topic	"The Rape of the LOCK" Alexander Pope
Hours required	6 hours.
Learning Objectives	To learn the students appreciate the poem "The Rape of the Lock" by Alexander Pope
Previous Knowledge to be remained	Epic conventions, Epic – Subjects other forms of poetry
Topic Synopsis	Alexander Pope picks out the follies, misguided interests, fashions of England in 18th century. It's the war between the aristocratic lady Belinda and the Baron. The Baron snips of the lock of Belinda. The sylphs endeavour furiously to intervene, but no use. Belinda's screams fill the air. This poem "The Rape of the LOCK" is about a scandalous incident between Arabella Fermor and Lord Petre.
Examples / Illustrations	"The Rape of the LOCK" by Alexander Pope follows Epic Conventions.
Additional Inputs	MOCK EPIC, MOCK Heroic, Epic Style, Grand theme, Grand Style
Teaching Aids used	ICT.
References cited	"The Rape of the LOCK" – Alexander Pope "The Dunciad" – Alexander Pope
Student Activity Planned after the teaching	HOW does Alexander Pope invoke the Muse in the beginning of the poem?
Activity Planed outside the Class room, if any	HOW's the grand theme developed by Alexander Pope in the poem.
Any other Activity	Justify- "Alexander Pope introduces the conventional epic subjects of Love and War".

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

YEAR 2021-22

Name of the Lecturer Syed Vazihe Tahaseen

Department of Biochemistry

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry
Name of the Lecturer :	Syed vazila Tahaseen.
Course / Group :	B.Sc MBC & I
Paper :	Molecular biology & DNA Technology.
Name of the Topic	Experiments to prove DNA as genetic material.
Hours required	2.
Learning Objectives	To know the details of experiments that proved DNA & RNA (invisible) as genetic material.
Previous Knowledge to be reminded	Structure of DNA & RNA, Transformation, Virus structure
Topic Synopsis	Transformation experiment / Griffith experiment: In 1928. Griffith encountered the phenomenon of genetic transformation. Avery, Mcleod & McCarty experiment: — The material that was transformed in Griffith experiment was identified as DNA by Avery, Mcleod & McCarty. Hershey & chase / blender experiment: — By using T2 phage & DNA is the only phosphorous containing substance labelled with p32 and protein coat labelled with
Examples / Illustrations	three experiments were discribed as illustratay
Additional Inputs	RNA as genetic Material experiment.
Teaching Aids used	White board. and PPT.
References cited	Cell biology —
Student Activity Planned after the teaching	To draw the figures related to each experiment.
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazira Tabasseem
Course / Group :	B Sc, HBC
Paper :	Molecular biology & rDNA technology
Name of the Topic	DNA Replication
Hours required	3 hours
Learning Objectives	To learn how the DNA is replicated & genetic information is passed into the next generation
Previous Knowledge to be reminded	The double helix nature, enzymes role.
Topic Synopsis	The DNA replication mechanism ① Replication is bidirectional ② Replication is semi conservative ③ Replication is carried out in semi discontinuous way. The Replication fork starts the process of replication at the origin of replication point and moves in both directions; the semi conservative mode of replication was proved by Messelson & Stahl experiment. The semi discontinuous replication can be proved by the Okazaki fragments on the lagging strand.
Examples / Illustrations	Prokaryotic & Eukaryotic replication mechanism Comparision.
Additional Inputs	Enzymes involved in replication in detail.
Teaching Aids used	white board, PPT, video lecture.
References cited	.
Student Activity Planned after the teaching	To draw the figures related to initiation, elongation & termination.
Activity Planned outside the Class room, if any	Assignment.
Any other Activity	1st internal exam question.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihe Tabaseem .
Course / Group :	BSc , MBC
Paper :	Molecular biology & rDNA technology .
Name of the Topic	Mechanism of DNA replication .
Hours required	3 hrs .
Learning Objectives	To know the steps involved in replication .
Previous Knowledge to be reminded	Role of enzyme , Sequences in DNA , Direction in DNA strand .
Topic Synopsis	Initiation :- Replication begins at specific sequence called ori-c , DNA A, B & C three accessory protein Compriss a initial complex which identifies the Ori C. This facilitates melting of three 13bp AT rich sequence that allow to open binding of DNA B The unwounded strands are kept opened in presence of SSBs . Elongation requires primer formation , polymerization , proof reading and ligation of discontinuous strands . Termination :- The two replication forks of the circular E.Coli meet at a terminus region Contain multiple copies of 20bps sequ Called Ter sequen
Examples / Illustrations	Enzyme involved , DNA binding protein
Additional Inputs	The cell cycle . phase .
Teaching Aids used	PPT and video .
References cited	
Student Activity Planned after the teaching	To write the mechanism in detail with figures in note .
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry
Name of the Lecturer :	Syed Vazihathaseen
Course / Group :	Biochemistry / HBC
Paper :	Molecular biology & rDNA technology.
Name of the Topic	Organization of genetic material
Hours required	2h
Learning Objectives	To understand how the DNA is organized in chromosa
Previous Knowledge to be reminded	DNA structure, Nuclear protein
Topic Synopsis	In the eukaryotic cell, the DNA is associated with various protein to form chromatin. Which then organized into compact structure called Chromosome. The DNA double helix is wrapped around the core protein namely histone which are basic in nature (H_2A, H_2B, H3 & H4). The nucleosom are formed by winding of DNA on histone octame The nucleosome are seperated by spacer DNA to which H1 is attached. This forms the 10nm fib This is further coiled to produce 30nm fiber Then 30nm fiber further forms loops, which conde to form the chromo
Examples / Illustrations	The chromosome structure.
Additional Inputs	Histone nature.
Teaching Aids used	PPT and figures from google
References cited	
Student Activity Planned after the teaching	To draw the organization steps
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochem.
Name of the Lecturer :	Syed Vazida Tahaseen.
Course / Group :	B.Sc, MBC.
Paper :	Molecular Biology & rDNA technology
Name of the Topic	Concept of gene, nature & structure of gene
Hours required	2h.
Learning Objectives	To learn what is gene, structural unit, functional unit
Previous Knowledge to be reminded	DNA structure, chromosomes.
Topic Synopsis	The gene is the basic physical & functional unit of heridity. Genes are made up of DNA. Many genes donot code for proteins. In humans gene vary in size from a few hundred DNA bases to more than 2 Million bases. Genes can aquire mutations in their sequence leading to different varients known as alleles, The. The non coding regions of DNA are called exons. All genes are associated with regulatory sequences, promotor, Operator regions
Examples / Illustrations	Mendel laws as example.
Additional Inputs	Chromosome structure, r-DNA technology.
Teaching Aids used	Black board.
References cited	Cell biology by Roberdies
Student Activity Planned after the teaching	To prepare notes.
Activity Planned outside the Class room, if any	—
Any other Activity	To understand how genes are incorporated in vectors in rDNA technology.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen.
Course / Group :	MBC
Paper :	Molecular Biology & rDNA technology
Name of the Topic	Transcription - RNA synthesis, RNA polymerase
Hours required	4h.
Learning Objectives	To learn how the DNA gets synthesized using DNA strand with the help of enzyme
Previous Knowledge to be reminded	DNA structure, RNA structure
Topic Synopsis	Transcription is the process of copying a segment of DNA into RNA. The segments of DNA transcribed into RNA that can encode proteins are said to produce mRNAs. It involves steps ① RNA polymerase binds together with transcription factors to promotor DNA, and generates the transcription bubble, adds nucleotides at the start nucleotide and polymerization continued The stop of transcription is carried out in 2 ways ① Rho dependent and Rho independent manner.
Examples / Illustrations	Types of RNAs., mRNA structure. DNA replication, enzymes in replication
Additional Inputs	Eukaryotic RNA polymerases
Teaching Aids used	Video (Animation)
References cited	Baltimore books a text book for Molecular Biology.
Student Activity Planned after the teaching	To draw the structure of RNA polymerase.
Activity Planned outside the Class room, if any	Slip test.
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemisty / Biochemisty
Name of the Lecturer :	Syed Vazihа Tahaseen.
Course / Group :	~~MB~~ B.Sc, MBC
Paper :	Molecular Biology & rDNA technology
Name of the Topic	Regulation of prokaryotic gene expression at transcriptional level
Hours required	3h.
Learning Objectives	To understand the regulation mechanism
Previous Knowledge to be reminded	DNA structure, protein structure.
Topic Synopsis	The transcriptional regulation is the means by which a cell regulates the conversion of DNA to RNA, thus by altering gene activity. Regulation can be understood by taking the example of lac operon. The lac operon of E.coli contains genes involved in lactose metabolism. The lac repressor acts as a lactose sensor blocks transcription CAP acts as a glucose sensor. It activates transcription of operon RNA polymerase binds CAP site Promoter O P Z Y A Blocks RNA polymerase
Examples / Illustrations	LAC operon, Trp operon.
Additional Inputs	Trp operon.
Teaching Aids used	Video (Animation), PPT.
References cited	Text book of Molecular biology. 5rd edition David P. Clark / Nanette
Student Activity Planned after the teaching	To draw the lac operon structure with the regulation
Activity Planned outside the Class room, if any	To write Assignment
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry.
Name of the Lecturer :	Syed Vaziha Tahaseen.
Course / Group :	B.Sc / MBC
Paper :	Molecular Biology & r-DNA technology.
Name of the Topic	Genetic code, characteristics, protein synthesis
Hours required	6h.
Learning Objectives	To understand the characteristics of gene.
Previous Knowledge to be reminded	To understand the steps in protein synthesis. types of RNAs
Topic Synopsis	The genetic code is a set of 3 letter combinations of nucleotides called codons. Each of which corresponds to a specific aminoacid stop signal. The concept of codons was described first by Crick. Marshall Nirenberg performed experiments that began deciphering the genetic code. They showed that RNA sequences UUU specifically code for aminoacid phenylalanine. There are 64 codons available among them 61 represent aminoacids, the remaining 3 are called Nonsense codons
Examples / Illustrations	Nirenberg & Khorana's experiments.
Additional Inputs	Experiments to decipher the genetic code.
Teaching Aids used	PPT, Video lecture.
References cited	Molecular biology book by Himanshu Arora
Student Activity Planned after the teaching	To draw the genetic code table.
Activity Planned outside the Class room, if any	To write notes on protein synthesis steps.
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazika Khaseem.
Course / Group :	B.Sc, MBC
Paper :	Molecular Biology & r-DNA technology.
Name of the Topic	Post translational Modification, Inhibitors of protein synthesis.
Hours required	3h.
Learning Objectives	To understand how proteins are modified after the process of translation, Inhibitors.
Previous Knowledge to be reminded	protein structure.
Topic Synopsis	Post translational Modification increase the functional diversity of proteome by the covalent addition of functional groups by ① phosphorylation ② Glycosylation ③ Ubiquitation ④ S-nitrosylation Substance that stop @, slows the growth of bacteria cells by disturbing the process of new protein by targeting bacterial ribosome Tetracycline & glycylcycline Oxazolidinones Amphenicols & pleuromutilins Azithromycin Erythromycin Chloramphenicol. Neomycin. Gentamicin. Mechanism:- ① Impaired influx @, Increased efflux ② Ribosomal ③ Enzymatic inactivation.
Examples / Illustrations	Glycosylation, folding of protein
Additional Inputs	protein final structure.
Teaching Aids used	PPT.
References cited	BALTIMORE, Text book of Molecular Biology.
Student Activity Planned after the teaching	To write notes
Activity Planned outside the Class room, if any	//
Any other Activity	—

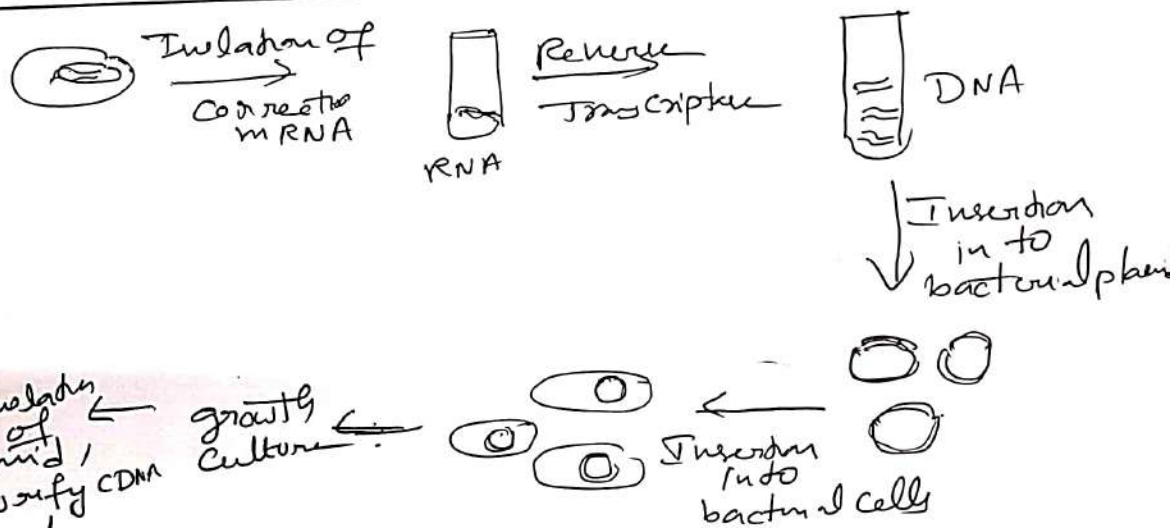
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen.
Course / Group :	B.Sc, MBC
Paper :	Molecular Biology & r-DNA technology
Name of the Topic	Cloning strategies, Enzymes in rDNA technology
Hours required	4h.
Learning Objectives	To understand the steps in cloning. ~~Tools of genetic engineering~~
Previous Knowledge to be reminded	plasmids, DNA structure, Enzymes basics.
Topic Synopsis	A set of techniques adopted for gene cloning for a particular purpose ① Isolation of gene of interest ② Amplification by PCR ③ selection of vector ④ insertion into the vector ⑤ Vector insertion into the cell ⑥ culturing ⑦, screening of transformed cells. ① Enzymes:- Exonucleases, Endonucleases (Restriction endonucleases) ligases, Alkaline phosphatase etc
Examples / Illustrations	Types of enzymes - Restriction endonucleases / ligases. etc.
Additional Inputs	Nomenclature of Restriction endonucleases
Teaching Aids used	PPT.
References cited	A Text book of Biotechnology - RC Dubey.
Student Activity Planned after the teaching	To list the enzymes & write their significance
Activity Planned outside the Class room, if any	To write a sliptest.
Any other Activity	—

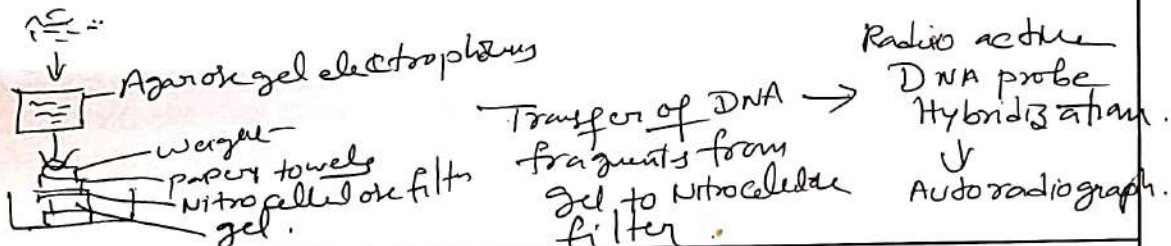
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihā Tahaseen.
Course / Group :	B.Sc, MBC
Paper :	Molecular Biology & r-DNA technology
Name of the Topic	cloning vectors: types
Hours required	4h.
Learning Objectives	To learn the structure & construction of cloning vectors and to understand their significance in genetic engineering
Previous Knowledge to be reminded	Enzymes in rDNA technology, plasmids, λ phage
Topic Synopsis	cloning vectors characteristics (1) Ability to promote Autonomous replication. (2) Contain genetic information & Stable Marker gene (3) Restriction sites (4), Replicate inside the host cell into number of copies examples: (1) plasmid vectors (2) Bacteriophage vectors (3) Cosmids (4) ~~phage~~ BAC vectors. (5) YAC vectors (6) HAC (Human Artificial chromosome)
Examples / Illustrations	PBR 322, PUC-19, λphage etc.
Additional Inputs	λ phage life cycle
Teaching Aids used	- PPT and Blackboard.
References cited	A Text book of Biotechnology Molecular Biology by R C Dubey
Student Activity Planned after the teaching	To draw the structures of vectors.
Activity Planned outside the Class room, if any	To write Assignment.
Any other Activity	To prepare Models.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen
Course / Group :	B-Sc, MBC
Paper :	Molecular Biology & rDNA technology.
Name of the Topic	Construction of C-DNA, genomic libraries
Hours required	3 h.
Learning Objectives	To understand the synthesis of C-DNA libraries & their significance in rDNA technology.
Previous Knowledge to be reminded	C-DNA, enzyme reverse transcriptase.
Topic Synopsis	
Examples / Illustrations	C-DNA Library.
Additional Inputs	Enzyme reverse transcriptase.
Teaching Aids used	PPT & Google Images.
References cited	RC Dubey.
Student Activity Planned after the teaching	Construction of the Libraries Notes, & Group discussion.
Activity Planned outside the Class room, if any	To search in google regarding their uses in rDNA technology
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazira Tahaseen
Course / Group :	B.Sc, MBC
Paper :	Molecular Biology & r-DNA technology
Name of the Topic	DNA sequencing, PCR, Blotting techniques
Hours required	6 h.
Learning Objectives	To understand the principle and applications of techniques.
Previous Knowledge to be reminded	DNA structure, primer, Significance of DNA copies in large amount
Topic Synopsis	The 3 steps in PCR are (1) Denaturation of the template into single strands (2) Annealing of the primers to the each signal strands for new strand synthesis. (3) Extension of the new DNA strand from the primers Blotting techniques (1) Southern (2) Northern (3) western blotting 
Examples / Illustrations	Sanger's dideoxy method. DNA polymerase
Additional Inputs	More applications
Teaching Aids used	Technique Demonstration by animation videos & Lab visit to Observe the PCR.
References cited	RC Dubey
Student Activity Planned after the teaching	To write Assignments on the above techniques principle & applications
Activity Planned outside the Class room, if any	Lab visit.
Any other Activity	To observe the PCR Machine in any diagnostic lab.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazika Tahaseen
Course / Group :	B.Sc, MSC
Paper :	Molecular Biology & rDNA technology
Name of the Topic	Applicatons of gene cloning.
Hours required	4h.
Learning Objectives	To understand the cloning techniques applicatons in industry
Previous Knowledge to be reminded	Fermentation, cloning.
Topic Synopsis	Applicatons of gene cloning ① Medical applicatons ② In the synthesis of vitamins, hormones Antibiotics, Different genes for the treatment of diseases like cystic fibrosis etc. Agricultural applicatons — Bt cotton. Gene therapy: — The process of defective gene removal and insertion of new healthy gene. Genomic library. creations etc.
Examples / Illustrations	Bt cotton, Insulin, Growth hormone, Golden rice etc.
Additional Inputs	More applicatons & Ethics.
Teaching Aids used	PPT.
References cited	RC Dubey & web resources
Student Activity Planned after the teaching	To list the applicatons.
Activity Planned outside the Class room, if any	To collect the ethical issues on rDNA technology products
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihā Tahaseen.
Course / Group :	B.Sc, MBC, MBF
Paper :	Enzymology, Bioenergetics & Intermediary metabolism
Name of the Topic	Nomenclature & classification of enzyme, Introduction to enzyme.
Hours required	5h.
Learning Objectives	To understand the structure, Components of enzyme. their classification.
Previous Knowledge to be reminded	Protein structure.
Topic Synopsis	Enzyme are biocatalyst. Enzyme increase the rate of reaction by decreasing the activation energy. Enzyme binds with the substrate and readily to a transition state where all the changes take place (bond breaking, bond formation). Enzyme As per EC given 4 digits number. (1) Oxidoreductase - carry oxidation reduction reaction (2) Transferase - Transfer the group. (3) Hydrolase (4) Hydrat lyase (6) Ligase (5) Isomerase
Examples / Illustrations	Oxidation & reduction. Group transfer., hydrolysis, Ligation Isomers.
Additional Inputs	Activation energy.
Teaching Aids used	· PPT & Black board.
References cited	Lehninger - principly of Biochemistry.
Student Activity Planned after the teaching	To write Assignment on classification & Nomenclature.
Activity Planned outside the Class room, if any	—
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen.
Course / Group :	B.Sc, MBC, MBF
Paper :	Enzymology, Bioenergetics & Intermediary metabolism
Name of the Topic	Enzyme substrate interaction, MM equation, factors affecting enzyme activity
Hours required	5h.
Learning Objectives	To learn how the catalytic activity of enzyme is measured & to study the factors that affect the enzyme activity.
Previous Knowledge to be reminded	protein structure - Denaturation & renaturation
Topic Synopsis	Enzyme interact with substrate to form E-S Complex. ① by Lock & Key Model. ② By induced-fit Model. MM equation: — At steady state enzyme binds to the substrate to form product, the rate of formation of products = The rate of dissociation of E & S. $V = \frac{V_{max}[S]}{K_m + [S]}$. K_m is the substrate concentration at which enzyme velocity is half of it's maximum velocity
Examples / Illustrations	Inhibitors as drugs.
Additional Inputs	Co enzymes (Vitamins as co enzymes)
Teaching Aids used	PPT.
References cited	Lehninger Nelson & Cox.
Student Activity Planned after the teaching	To write notes on MM equation
Activity Planned outside the Class room, if any	To observe drugs (Vitamins & Enzyme inhibitors)
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihaa Tahaseen.
Course / Group :	B.Sc, MBC, MBT
Paper :	Enzymology, Bioenergetics & Intermediary metabolism
Name of the Topic	Metabolism of Carbohydrates
Hours required	12 h.
Learning Objectives	To understand how the Carbohydrates are Metabolised
Previous Knowledge to be reminded	structure of Carbohydrates.
Topic Synopsis	Carbohydrates are metabolized in different ways ① glucose the ultimate digested product of carbohydrate undergo glycolysis Glucose → G6P → f6P → f1-6 bisphophate — DHAP → G3P → 1,3 bisphosphoglycerate → 3ph → 2ph glycerate → PEP → pyruvate. pyruvate Aero → TCA cycle Anaero fermentation to ethanol (bacteria) / Lactate (Muscle) Gluconeogeny – Synthesis of glucose from other than Carbohydrates ② HMP Shunt :- Synthesis of pentose sugars
Examples / Illustrations	Disease associated with abnormal Metabolism.
Additional Inputs	Diabetes. Insulin, Glucagon, Epinephrin role.
Teaching Aids used	pathway flow charts from Google images.
References cited	Lehninger Nelson & Cox.
Student Activity Planned after the teaching	To draw the pathways & practice.
Activity Planned outside the Class room, if any	To prepare flow charts on the pathway.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

ame of the Department / Subject :	Biochemistry / Biochemistry
ame of the Lecturer :	Syed Vazila Tahaseen.
ourse / Group :	B.Sc / MBC, MBI=
aper :	Enzymology, Bioenergetics & Intermediary Metabolism
ame of the Topic	Lipid metabolism.
ours required	12h.
earning Objectives	To understand how the lipids are synthesized & degraded.
revious Knowledge be reminded	Lipid structure & Location
Topic Synopsis	Lipids undergo (1) β oxidation — degradation of fatty acids in to acetyl CoA (2) Ketone bodies synthesis — Acetone, Acetoacetate, β hydroxy butyrate are called Ketone bodies (3) Synthesis of fatty acids — Smooth endoplasmic reticulum. (4) Cholesterol Synthesis :- From acetyl CoA to Squalene → lanosterol → cholesterol.
Examples / Illustrations	Cholesterol abnormalities metabolism.
Additional Inputs	HDL / LDL & VLDL clinical significance.
Teaching Aids used	Flowcharts, metabolic pathways from google resources
References cited	Lehninger Nelson & Cox, Voet & Voet
Student Activity Planned after the teaching	To draw the metabolic pathway.
Activity Planned outside the Class room, if any	To observe the clinical reports related to triglycerides, cholesterol levels
Any other Activity	

TEACHING PLAN (SYNOPSIS)

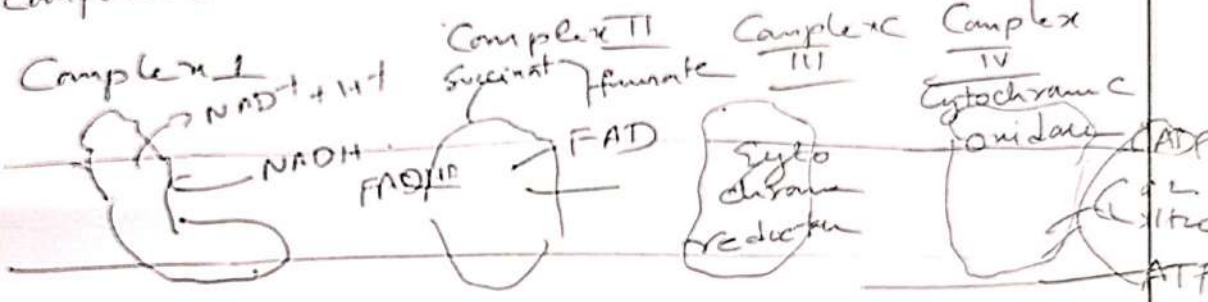
Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihar Tahaseen.
Course / Group :	B.Sc, MBC, MBF
Paper :	Enzymology, Bioenergetics & Intermediary metabolism
Name of the Topic	Metabolism of amino acids
Hours required	6h.
Learning Objectives	To learn the pathways of amino acid metabolism
Previous Knowledge to be reminded	Structure of amino acids
Topic Synopsis	Amino acid metabolism include. ① Transamination ② Deamination ← Oxidative — demanadin. ③ Decarboxylation. Role of B6 in transamination. Urea cycle :— Synthesis of urea from ammonia. Ammonia → Carbamoyl phosphate. Carbamoyl phosphate → Ornithine. Citrulline. Aspartate. Argino succinate. Arginine. Fumarate.
Examples / Illustrations	The amino acid Metabolism inborn errors to understand how deficiency of an enzyme will cause the deficiency disorder.
Additional Inputs	Role of vitamin B6 in detail.
Teaching Aids used	PPT, Metabolic pathway flow charts
References cited	Lehninger Nelson & Cox
Student Activity Planned after the teaching	To draw the pathways.
Activity Planned outside the Class room, if any	
Any other Activity	

29/8/2022

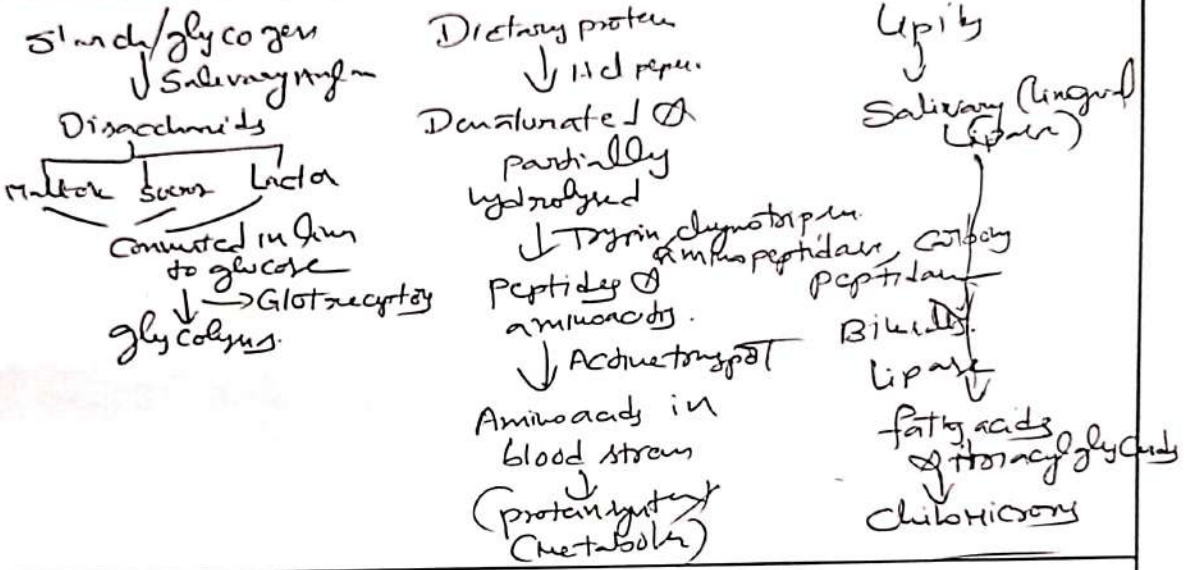
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen.
Course / Group :	B.Sc / III B.C
Paper :	Enzymology, Bioenergetics & Intermediary metabolism
Name of the Topic	Synthesis & Catabolism of purines & pyrimidines
Hours required	6h.
Learning Objectives	To understand how the purines & pyramidines are synthesized & degraded
Previous Knowledge to be reminded	The structures of purines & pyrimidines
Topic Synopsis	De novo pathways for purine synthesis. ① PRPP synthetase — It is the rate limiting step in the synthesis of both purines & pyrimidines ② Glutamine PRPP :- catalyses the first committed step in purine synthesis. ③ IMP branch to AMP. ④ IMP branch to GMP Salvage pathways :- Recycling of products of nucleic acid breakdown. primarily occurs in extrahepatic tissues APRT & HGPRT enzymes play major role
Examples / Illustrations	Inborn errors in purine & pyrimidine metabolism
Additional Inputs	~~to study~~ Regulation of the pathways
Teaching Aids used	PPT and blackboard.
References cited	Lehninger Nelson & Cox,
Student Activity Planned after the teaching	To draw the pathways & practice the pathways
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Khaseem.
Course / Group :	B.Sc, MBC
Paper :	Enzymology, Bioenergetics & Intermediary metabolism.
Name of the Topic	Bioenergetics and Biological oxidation.
Hours required	5h.
Learning Objectives	To learn the structure of mitochondria & organization of etc components.
Previous Knowledge to be reminded	The structure of heme, membrane, oxidation, reduction
Topic Synopsis	Biological oxidation take place in mitochondria. It involves ① synthesis of ATP from ADP. The components are — 
Examples / Illustrations	Photosynthesis & Biological oxidation are studied comparisingly.
Additional Inputs	PPT, LMS lecture.
Teaching Aids used	LMS PPT
References cited	Lehninger Nelson & COX
Student Activity Planned after the teaching	To draw the structure of components of etc and etc chain.
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen.
Course / Group :	B.Sc, MBC
Paper :	Enzymology, Bioenergetics & Intermediary metabolism.
Name of the Topic	Digestion & absorption of CHOs, lipids & proteins
Hours required	4h.
Learning Objectives	To learn how the digestion and absorption of food substances are taking place
Previous Knowledge to be reminded	basic structure of CHOs, lipids & proteins
Topic Synopsis	
Examples / Illustrations	Eg: Lactose intolerance, their digestion related problems.
Additional Inputs	Chylomicrons structure.
Teaching Aids used	PPT
References cited	Human physiology by Chatterjee.
Student Activity Planned after the teaching	To write assignment on the digestion & absorption topic
Activity Planned outside the Class room, if any	—
Any other Activity	To make charts.

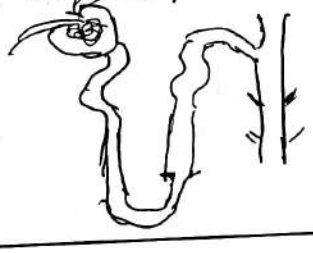
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry
Name of the Lecturer :	Syed Vazilha Tahaseen
Course / Group :	B.Sc, MBC, MBF
Paper :	Human physiology, Endocrinology & Nutritional, clinical Biochemistry
Name of the Topic	Liver functions & Liver function tests
Hours required	5h.
Learning Objectives	To understand the functioning of liver and to also know the tests carried out to detect the functioning of the liver.
Previous Knowledge to be reminded	Basics on liver, Enzyme tests
Topic Synopsis	Detoxification protein synthesis production of biochemicals necessary for digestion glycogen storage Decomposition of RBC plasma protein synthesis. Major role in fat metabolism Urea synthesis. Gluconeogenesis, Glycogenolysis & glycogenesis Fats emulsification.
Examples / Illustrations	Jaundice test & types.
Additional Inputs	Detail understanding of functions & tests.
Teaching Aids used	PPT and blackboard.
References cited	Human physiology by Chatterjee
Student Activity Planned after the teaching	To observe the lab reports done for liver function tests
Activity Planned outside the Class room, if any	To write Assignment & gives seminars on the above topic
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen
Course / Group :	B.Sc, MBC
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Nerve system, Mechanism of nerve impulse transmission
Hours required	4h.
Learning Objectives	To understand the neuron structure, Resting potential action potential etc.
Previous Knowledge to be reminded	Basic structure of Neuron.
Topic Synopsis	Neurons are of 4 different types ① unipolar, ② Bipolar ③ pseudounipolar ④ multipolar Resting membrane potential: The potential gradient exists ie/n intra & extracellularly It is defined as a sudden fast transient propogatory change of the resting membrane Action potential: — Threshold potential opens voltage gated sodium channels cause a large influx of Na ions. This is called depolarisation.
Examples / Illustrations	Resting membrane potential and its conversion to action potential.
Additional Inputs	~~Paper~~ :- —
Teaching Aids used	PPT & PDF Notes.
References cited	Human physiology by Chatterjee & web resources
Student Activity Planned after the teaching	To write Assignment.
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihan Tahaseen.
Course / Group :	B.Sc, MBC, MBI=
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Kidney structure & functions
Hours required	4h.
Learning Objectives	To know the basic structure of kidney & structural units Nephrons & the formation of conc
Previous Knowledge to be reminded	Basic structure of kidney & Nephron.
Topic Synopsis	Nephrons are the basic structural units of kidney. Consists of GBM, Renal tubules. - Glomerular filtration The GBH consists of basement membrane, podocytes and endothelial cells. The filtration of blood is carried out through the 3 layers. The proteins, cells are not get filtered due to the barrier GFR 125 ② Tubular reabsorption ③ Tubular secretion. 
Examples / Illustrations	Kidney disease
Additional Inputs	Glomerular structure in detail upto podocytes
Teaching Aids used	PPT & Blackboard.
References cited	Human physiology by Chatterjee.
Student Activity Planned after the teaching	To draw the structure of Nephron & to define the significance of each part.
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Nazia Tabassum.
Course / Group :	B.Sc / MBC, MBF
Paper :	Human physiology, Nutritional & Clinical Biochemistry
Name of the Topic	Classification of Hormones, Mechanism of hormone action.
Hours required	4 h.
Learning Objectives	To classify the hormones based on their structure & function.
Previous Knowledge to be reminded	Basic knowledge on endocrine system.
Topic Synopsis	Hormones are used to communicate between organs and tissues. In vertebrates hormones are responsible for regulating a variety of physiological process Hormones are different types — protein / peptide — Amino acid Derivatives — steroids — Eicosanoids and gases For peptide hormones and many eicosanoid hormones the receptors are embeded in the plasma membrane, binding of hormone activate the 2nd messenger (Cyclic AMP), steroid hormone receptors are located inside the cell. They belong to nuclear receptor family. To bind their receptors hormone must cross the cell membrane.
Examples / Illustrations	Pituitary hormones and their role in regulating few other hormones.
Additional Inputs	—
Teaching Aids used	Black board & PPT
References cited	Human physiology by Chatterjee & other web resources
Student Activity Planned after the teaching	To write the mechanism of hormone action, as slip test.
Activity Planned outside the Class room, if any	—
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathasem
Course / Group :	B. Sc, MBC, MBF
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Thyroid, parathyroid, adrenalin, Reproductive hormone
Hours required	8 h.
Learning Objectives	To understand the chemical structure & physiological role of the above hormone.
Previous Knowledge to be reminded	basic knowledge on endocrine system.
Topic Synopsis	Thyroid hormone is the hormone that control your body metabolism, the process in which your body transforms the food into energy. The 2 main hormone are ① T4 (Thyroxine), Triiodothyronine (T3). PTH is a hormone that is released by parathyroid glands, make and release to control the levels of Ca^{2+} in your blood, Adrenaline also known as epinephrine involved in regulating visceral functions. Normally produced by adrenal glands. It plays important role in body's Fight@1 Flight response.
Examples / Illustrations	Disorders of hormone Hypo & Hypersecretions
Additional Inputs	—
Teaching Aids used	Blackboard and Notes in PDF.
References cited	Human physiology by chatterjee & web resources
Student Activity Planned after the teaching	To write the chemical structure and Biochemical role as assignment.
Activity Planned outside the Class room, if any	To observe the patient reports related to hormonal disorders
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen
Course / Group :	B.Sc, MBC, MBF
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Balanced diet, calorific value of food, RDA
Hours required	6 h.
Learning Objectives	To know the significance of balanced diet, To understand the importance of RDA.
Previous Knowledge to be reminded	Calories and some calorific value.
Topic Synopsis	A diet consisting of a variety of different types of food & providing adequate amount of the nutrients necessary for good health. It improves overall health. It provides all the body's essential nutrition. The calorific value of food indicates the total amount of energy the human body could generate during the metabolism of that food. Expressed in Kilojoules / 100 grams (or) 100ml. A calorie is the amount of heat required to raise temperature of 1 g of water by 1°C.
Examples / Illustrations	Calorific value of foods, RDA table by NIN.
Additional Inputs	Malnutrition, Obesity, underweight.
Teaching Aids used	RDA table from web resources.
References cited	Nutrition book by Srilakshmi & M. Swaminathan.
Student Activity Planned after the teaching	To draw the RDA table.
Activity Planned outside the Class room, if any	To make understand the significance of RDA table.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen.
Course / Group :	B.Sc, MBC, MBI
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	BV of protein, Mal nutrition
Hours required	3h.
Learning Objectives	To understand the protein source & their biological value Malnutrition disorder.
Previous Knowledge to be reminded	protein nature, Balanced diet.
Topic Synopsis	Biological value as a measure of the proportion of absorbed protein from a food which becomes incorporated into protein of the organism's body. It capturing how readily the digested ~~food~~ protein can be used in protein synthesis. Malnutrition — It occurs when an organism get too few & too many nutrients resulting in health problem. It includes undernutrition and overnutrition. It is Kwashiorkor and Marasmus Overweight — Obesity
Examples / Illustrations	Examples for high BV Containing food.
Additional Inputs	Malnutrition supplementation.
Teaching Aids used	PPT.
References cited	Swaminadhan, A text book of Nutrition.
Student Activity Planned after the teaching	To draw diet plan to treat the Malnourished child.
Activity Planned outside the Class room, if any	To observe the BMI and recognize the children with underweight
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazira Tahaseen.
Course / Group :	B.Sc, MBC, MBF
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Vitamins, Sources, structure & Biochemical role
Hours required	4h.
Learning Objectives	To learn the sources and biochemical role of Vitamins.
Previous Knowledge to be reminded	Vitamins Classification.
Topic Synopsis	Watersoluble vitamins: — ① vit-c :- Synthesis of collagen, Connecting substance. ② Making haemoglobin by helping absorption of Fe ③ Healing of wounds and fractures ④ Increasing resistance ⑤ proper growth ⑥ As an antioxidant. B Complex:- Thiamine, Riboflavin, Niacin, pyridoxin pantothenic acid, Biotin, Folic acid / Cyanocobalamine Thiamine functions as coenzyme, Maintain healthy nervous Riboflavin: Coenzyme for CHO metabolism Niacin — NAD, NADP Pyridoxin — Amino acid metabolism. Cyanocobalamine — Act coenzyme for enzymes involved in intra molec group transfer reactn
Examples / Illustrations	Sources of vitamins
Additional Inputs	① Deficiency disorders
Teaching Aids used	ppt and notes in PDF
References cited	Web resources
Student Activity Planned after the teaching	To draw the vitamins flowchart. With sources & Major Biochemical role
Activity Planned outside the Class room, if any	To prepare charts and give awareness on the requirements of vitamins in diet
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazira Tabasum
Course / Group :	B.Sc, MBC, MBF
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Bulk & Trace elements - Ca, Mg, Fe, I, Cu, Mo, Zn
Hours required	3h
Learning Objectives	To learn the trace element biochemical role and sources
Previous Knowledge to be reminded	The 'Fe' significance, 'I' role in production of thyroxin,
Topic Synopsis	Bulk elements :- Bulk element is a mineral substance which in contrast to a trace element is present in a percentage by weight more than 50mg/kg. Na^+, K^+, Ca^{2+}, Mg^{2+}. In human body Ca^{2+} is present in bones, teeth required for muscle contraction, clotting, enzyme catalysis etc. Mg^{2+} is required for bones and masticatory system, enzyme catalysis & ion transport etc. Fe^{2+} exists in Haem, cyto-chrome etc required for blood formation, Energy metabolism Immune function, cell division
Examples / Illustrations	The sources of minerals, the nutritional requirement.
Additional Inputs	Deficiency disorders
Teaching Aids used	PPT & PDF Notes.
References cited	Web resources
Student Activity Planned after the teaching	To draw flow charts on Minerals their role in body, biochemical significance
Activity Planned outside the Class room, if any	To prepare play charts & give awareness to school children
Any other Activity	-

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemisty / Biochemisty
Name of the Lecturer :	Syed Vazila Tahaseen.
Course / Group :	BSc, MBC, MBE
Paper :	Humanphysiology, Nutritional & clinical Biochemistry
Name of the Topic	Composition of Blood, Coagulation of Blood
Hours required	4h.
Learning Objectives	To learn the Blood components and to understand the Mechanism of blood clotting
Previous Knowledge to be reminded	Basics about blood composition, Cells
Topic Synopsis	Blood plasma Formed elements platelets Acids Nutrients proteins Albumins Fibrinogen Globulin. Nitrogenous waste electrolytes Gases Leucocytes Granulocytes Neutrophils Basophils Eosinophils Erythrocytes Agranulocytes Lymphocytes Monocytes.
Examples / Illustrations	The cells structure diagrams
Additional Inputs	Coagulation factors in detail.
Teaching Aids used	PPT and Black board.
References cited	Humanphysiology by chatterjee.
Student Activity Planned after the teaching	To draw the intrinsic & extrinsic pathways
Activity Planned outside the Class room, if any	To understand the Blood picture that is carried out in the lab medical lab.
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen
Course / Group :	B.Sc, HBC, MBT
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Transportation of gases in blood, Anaemia
Hours required	4 h.
Learning Objectives	To learn the O_2 & CO_2 transportation. & types of understand the reasons for Anemia
Previous Knowledge to be reminded	Haemoglobin structure.
Topic Synopsis	Blood is the medium through which oxygen and CO_2 are transported. $Hb + 4O_2 \rightleftharpoons HbO_8$ / Hb has 4 polypeptide chains of globin and 4 heme groups. Each of the heme group has one Fe atom to which O_2 binds A decrease in partial pressure of CO_2 increases affinity of Hb towards O_2 : At tissues where O_2 partial pressure is less and partial pressure of CO_2 is more Oxyhemoglobin dissociates releasing oxygen and promoting binding of CO_2
Examples / Illustrations	Gases pressure (partial), Anaemia types
Additional Inputs	—
Teaching Aids used	Black board & PPT
References cited	Human physiology & LMS notes
Student Activity Planned after the teaching	To write Assignment on transportation of gases.
Activity Planned outside the Class room, if any	To estimate the Hb content in the students and awareness about the symptoms & problems associated with Anaemia
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vaziha Tahaseen.
Course / Group :	B.Sc, MBC, HBF
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Plasma protein in health & disease, liver disease /
Hours required	2h.
Learning Objectives	To learn the role of plasma protein and to understand liver disease.
Previous Knowledge to be reminded	Liver functions
Topic Synopsis	pHma protein, such as albumin and globulin that help maintain the colloidal osmotic pressure at about 25mm Hg. Electrolytes like Na^+, K^+, CO_2, Cl^- and Ca^{2+} help maintain blood pH. Albumins: — Albumin helps maintain the colloide osmotic pressure of the blood. It is the smallest of all protein Globulins, Fibrinogen etc.
Examples / Illustrations	Liver cirrhosis.
Additional Inputs	—
Teaching Aids used	Blackboard.
References cited	Web resources & Human physiology Guyton.
Student Activity Planned after the teaching	To observe the Lab reports of liver Patients suffering with liver disease.
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazida Tabasseem
Course / Group :	B.Sc, MBC, MBT
Paper :	Human physiology, Nutritional & clinical Biochemistry
Name of the Topic	Liver function test, Serum enzymes in liver disease
Hours required	3h
Learning Objectives	To learn the liver functions & test used for the detection of liver functions
Previous Knowledge to be reminded	Liver functions
Topic Synopsis	Liver enzymes are proteins that speed up chemical reactions in our body. These reactions include producing bile and substances that help the clotting of blood. Liver also helps in breaking down of foods and toxins, fighting infections. Common liver enzymes ① Alkaline phosphatase (ALP), Alanine transaminase (ALT), Aspartate transaminase (AST) Gamma glutamyl transferase (GGT) Fatty liver disease, hepatitis, cancer, liver cirrhosis Cause for increase in liver enzymes
Examples / Illustrations	SGOT, SGPT, ALP etc.
Additional Inputs	—
Teaching Aids used	Black board.
References cited	Human physiology by Guyton.
Student Activity Planned after the teaching	To observe the medical lab reports of patients and note down the normal values of liver functioning tests.
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazihathaseen.
Course / Group :	B.Sc, MBC, MBI=
Paper :	Bioinformatics & Biostatistics
Name of the Topic	Genomics & proteomics
Hours required	4h.
Learning Objectives	To understand the definition for genomics & proteomics & their significance
Previous Knowledge to be reminded	Gene structure, protein structure.
Topic Synopsis	proteomics is the study of proteome (All of the proteins that an organism can express in a particular time) The techniques used for proteomics are Antibody based methods, Gel based methods, chromatography based methods, Mass spectroscopy. Applications :- personalized Medicine, Biomarker discovery, Drug discovery, system biology, Agriculture, Food Science, paleo proteomics, Astrobiology.
Examples / Illustrations	The databases
Additional Inputs	—
Teaching Aids used	Web resources, databases
References cited	Web resources, S.C Rastogi - Bioinformatics & applications.
Student Activity Planned after the teaching	To write an Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazila Tahaseen
Course / Group :	B.Sc, MSc, MSF
Paper :	Bioinformatics & Biostatistics
Name of the Topic	Genome annotation, Gene prediction techniques
Hours required	4h.
Learning Objectives	To understand what is genome annotation and how gene prediction can be done.
Previous Knowledge to be reminded	Gene structure, Transcription-ORF
Topic Synopsis	It is the process of identifying the location of all of the coding regions in a genome. It involves the enriching the genetic material with information relating genomic position to intron-exon boundaries. It involve identifying ORFs and their location, Gene structure, Coding regions, Location of regulatory sequences / Splice sites, Noncoding regions, Introns etc
Examples / Illustrations	—
Additional Inputs	—
Teaching Aids used	web resources directly learned online & PPT
References cited	web resources., Rastogi - Bioinformatics & applications
Student Activity Planned after the teaching	To write notes
Activity Planned outside the Class room, if any	—
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Biochemistry / Biochemistry
Name of the Lecturer :	Syed Vazida Tahaseen.
Course / Group :	B Sc, MBC & MBI
Paper :	Bioinformatics & Biostatistics
Name of the Topic	primary, Secondary & Composite databases
Hours required	6 h.
Learning Objectives	To understand the different databases
Previous Knowledge to be reminded	The basic resources, NCBI. for research.
Topic Synopsis	As biological data accumulate in large scales and increase at exponential pace by high throughput and lower cost DNA sequencing technologies a number of biologically active databases have been developed. primary: Genbank, DDBJ, PIR composite: Uniprot, NRDB secondary: prosite, prints, Pfam structural: RCSH PDB, SCOB, CATH special: Clustering, Bibilography, Taxonomy, Pathway, Enzyme, microRNA
Examples / Illustrations	Different Nucleicacid, protein databases
Additional Inputs	Metabolic pathway databases
Teaching Aids used	web pages - Internet based resources
References cited	Online resources.
Student Activity Planned after the teaching	To search the information using the databases
Activity Planned outside the Class room, if any	project work
Any other Activity	

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

2021-22

TEACHING PLAN (SYNOPSIS)

2021-2022

Name of the Lecturer A. ROSALIND

Department of ENGLISH

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind
ourse / Group :	III BA EPJ Sem V
aper :	V
ame of the Topic :	A Grain of Wheat –
ours required :	05
earning Objectives	To understand the struggle for freedom
revious knowledge to be eminded	India's freedom struggle
opic Synopsis	(Continue on the reverse side if needed) The novel is about Kenya's fight for independence. Tells the story of Mau Mau, which was a political movement fighting for freedom from British colonial rule. The novel uses the technique of flashbacks to tell about past.
Examples/Illustrations	freedom struggle of our country.
Additional inputs	How freedom fighters sacrificed.
Teaching Aids used	Youtube, images, research articles.
References cited	Internet.
Student Activity planned after the eaching	Discussion on what are the qualities of freedom fighters.
Activity planned outside the Class oom, if any	Study freedom struggle of other countries
Any other activity	Notes to be prepared by students

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	III BA EPJ Sem 5
Paper :	5 Glimpses of world Literature
Name of the Topic :	Telephone Conversation
Hours required :	4 hours
Learning Objectives	To understand racism and racial discrimination
Previous knowledge to be reminded	discrimination faced in real life - incidents
Topic Synopsis	(Continue on the reverse side if needed) The poem describes the telephone exchange between a white lady and a black man. The poem mocks the racist overtones in the white lady who judges a person based on colour.
Examples/Illustrations	Examples from one's village.
Additional inputs	Additional information on racism
Teaching Aids used	You tube, Text.
References cited	Research articles Similar poems.
Student Activity planned after the teaching	Discussion on how to combat racism.
Activity planned outside the Class room, if any	Discuss a movie on racial discrimination
Any other activity	Notes

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalend
Course / Group :	III BA EPJ Sem V
Paper :	Glimpses of World Literature
Name of the Topic :	Crime and Punishment -
Hours required :	05
Learning Objectives	The power of repentance and relief from crime.
Previous knowledge to be reminded	Knowledge on vocabulary related to crime.
Topic Synopsis	*(Continue on the reverse side if needed)* Crime and Punishment is a psychological novel written by Dostoyevsky. The main character Raskolnikov is stricken with guilt when he murders an old lady and finally confesses and seeks redemption
Examples/Illustrations	characters in real life like the ones in the novel.
Additional inputs	Types of punishment and Judicial procedures.
Teaching Aids used	Youtube.
References cited	Research articles Text.
Student Activity planned after the teaching	Youtube movie.
Activity planned outside the Class room, if any	Discussion on characters.
Any other activity	Notes

A Rosalend
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	III BA EPJ Sem V
Paper :	Glimpses of World Literature
Name of the Topic :	Nagamandala
Hours required :	05
Learning Objectives	To cause awareness on gender equality
Previous knowledge to be reminded	Strong women in the family. Students share experiences.
Topic Synopsis	(Continue on the reverse side if needed) The play describes the dominating attitude of men and shows how women are abused and controlled. The play is feminist and within folk framework it portrays woman's desire for completeness.
Examples/Illustrations	Examples of inspiring women.
Additional inputs	Awareness on feminism
Teaching Aids used	Youtube for original kannada film.
References cited	Research articles
Student Activity planned after the teaching	Students watch film.
Activity planned outside the Class room, if any	Translate the kannada film into English and discuss.
Any other activity	Prepare notes.

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 20 - 20

Name of the Department / Subject :	English
Name of the Lecturer :	A- Rosalend.
Course / Group :	II BA, II BCom.
Paper :	General English.
Name of the Topic :	Tryst with Destiny
Hours required :	4.
Learning Objectives	To understand the essence of freedom for India.
Previous knowledge to be reminded	Freedom struggle of India
Topic Synopsis	*(Continue on the reverse side if needed)* On the fust speech on 14th night of 1947 Nehru compares India to our mother and urges people to work hard and fulfil the objectives of freedom struggle.
Examples/Illustrations	Images of freedom struggle.
Additional inputs	Other similar speeches on India's freedom struggle.
Teaching Aids used	Youtube Text
References cited	Articles.
Student Activity planned after the teaching	Assignment on India Now and Then.
Activity planned outside the Class room, if any	Ss watch speech and discuss India's progress.
Any other activity	Prepare Notes.

A Rosalend
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind.
ourse / Group :	II BA BCom Sem 3.
aper :	General English.
ame of the Topic :	Yes we can by Obama
ours required :	04
earning Objectives	To learn the use of rhyming words and inspiring phrases.
revious knowledge to be eminded	Inspiring speeches heard.
opic Synopsis	(Continue on the reverse side if needed) Yes we can is a speech delivered by Obama in 2008 in Chicago. Obama focussed on change and wanted unity. He urged Americans to find solutions to problems of unemployment and wants America to be rich
xamples/Illustrations	Comparison of America with other countries and India.
dditional inputs	Inputs on the American Dream.
eaching Aids used	You tube Research articles.
eferences cited	Other motivating speeches.
tudent Activity planned after the eaching	How to develop communication skills? Learning the use of suitable words
ctivity planned outside the Class oom, if any	Watch Obama's speech on Youtube and analysis
ny other activity	Reading exercise

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

me of the Department / Subject :	English.
me of the Lecturer :	A Rosalind.
urse / Group :	II BA, BCom.
per :	General English
me of the Topic :	A Leader should know how to manage failure
urs required :	04.
arning Objectives	To know the qualities of a leader and techniques to manage failure.
evious knowledge to be minded	Experiences of success and failure in life.
pic Synopsis	(Continue on the reverse side if needed) Dr Kalam talks about the traits of a leader. He says that a leader should have vision, dare to explore, should be transparent and also know how to manage failure.
xamples/Illustrations	Examples of true leaders in our country
dditional inputs	Life of Abdul Kalam - Inspiring facts
eaching Aids used	You tube Text
eferences cited	Inspiring speeches of Dr Kalam.
tudent Activity planned after the eaching	You tube interview watched by students
ctivity planned outside the Class oom, if any	Brainstorming on leadership qualities
ny other activity	Interview skills and assignment on interviewing people.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind
ourse / Group :	IIBA, BCom.
aper :	General English
ame of the Topic :	JRD Tata's interview with J.N Nirao
ours required :	04
earning Objectives	To pick up leadership qualities from JRD Tata
revious knowledge to be minded	Development in India. Personal opinions.
opic Synopsis	(Continue on the reverse side if needed) The lesson is an interview of JRD Tata where the great personality expressed his view on progress and development in India. He expressed his points of view and on the policies of govt.
xamples/Illustrations	Examples of successful Business people.
dditional inputs	Interesting facts on Tata and the company's stand.
eaching Aids used	Text, Articles.
eferences cited	Internet. Textbook.
tudent Activity planned after the eaching	Do Vocabulary building
ctivity planned outside the Class oom, if any	Interview skills.
ny other activity	Preparation of notes

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English.
Name of the Lecturer :	A. Rosalend
Course / Group :	II BA, B Com.
Paper :	General English.
Name of the Topic :	You've got to find what you love.
Hours required :	04.
Learning Objectives	To know the importance of developing skills and confidence.
Previous knowledge to be reminded	Difficulties faced in school and college.
Topic Synopsis	*(Continue on the reverse side if needed)* The speech delivered by Steve Jobs ~~at 1970~~ Stanford University highlights the importance of following one's dream and doing what one really loves to do.
Examples/Illustrations	Examples of inspiring people and difficulties they overcame
Additional inputs	Steve Jobs and challenges faced by him.
Teaching Aids used	Interesting information on the internet and articles.
References cited	Text.
Student Activity planned after the teaching	Goal setting and action plan.
Activity planned outside the Class room, if any	Analysis of speech and highlight key points
Any other activity	Preparation of notes

A Rosalend

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	II BA BCom
Paper :	General English.
Name of the Topic :	Role Play.
Hours required :	02.
Learning Objectives	To learn the importance of communication in real life.
Previous knowledge to be reminded	Conversations with outsiders in English.
Topic Synopsis	(Continue on the reverse side if needed) Roleplay is a speaking activity when one puts oneself into somebody else's shoes or places oneself in an imaginary situation Role play makes students to express themselves.
Examples/Illustrations	Different role plays.
Additional inputs	How to do role plays and methods.
Teaching Aids used	Dialogues Practice
References cited	Examples & Conversations and role plays.
Student Activity planned after the teaching	Role plays.
Activity planned outside the Class room, if any	Students research and prepare notes on role plays.
Any other activity	–

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind
ourse / Group :	IBA BSC.
aper :	General English.
ame of the Topic :	Listening skills
ours required :	04
earning Objectives	To realise the importance of listening and develop related skills
revious knowledge to be eminded	Check one's listening power through puddles
opic Synopsis	(Continue on the reverse side if needed) Listening is the ability to receive and interpret messages in the comm. process. Messages are misunderstood when one doesn't listen well. As a result communication breaks down and the purpose of listening is lost.
xamples/Illustrations	Tips to improve listening capacity
dditional inputs	Types of listening, process and barriers to listening.
eaching Aids used	Ppt, Youtube, Notes
References cited	Research Studies
Student Activity planned after the teaching	Learn English through songs.
Activity planned outside the Class room, if any	Listening games and activities
Any other activity	Preparing notes

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 20 - 20

Name of the Department / Subject :	English.
Name of the Lecturer :	A. Rosalind
Course / Group :	IBA 'BCom.
Paper :	General English.
Name of the Topic :	Positive Attitude.
Hours required :	09.
Learning Objectives	To develop positive attitude. To motivate and encourage good in people.
Previous knowledge to be reminded	Positive experiences in life.
Topic Synopsis	(Continue on the reverse side if needed) Positive attitude focusses on the bright side of life and allows one to see good in people. It allows the mind to use words like I can and it is possible. Positive attitude helps one to reach goals easily.
Examples/Illustrations	Examples of positive behaviour.
Additional inputs	Negative thinking and impact.
Teaching Aids used	PPt, Text, stories
References cited	Research studies.
Student Activity planned after the teaching	Task filled activities.
Activity planned outside the Class room, if any	games to improve attitude.
Any other activity	Notes.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	1 BA BCom sem 1
Paper :	General English
Name of the Topic :	SWOT analysis
Hours required :	04
Learning Objectives	To identify one's strong points weakness, opportunities around and hurdles stopping progress.
Previous knowledge to be reminded	Reflect on one's strengths and positive points.
Topic Synopsis	(Continue on the reverse side if needed) SWOT (strengths, weaknesses, Opportunities and threats) analysis is a framework used to assess an ~~con~~ organization's or a person's performance. The analysis helps one to identify one's strengths and use opportunities to overcome fears
Examples/Illustrations	Individual SWOT analysis areas to focus.
Additional inputs	Examples of SWOT analysis
Teaching Aids used	PPT, charts, notes
References cited	Research studies
Student Activity planned after the teaching	SWOT analysis on one self or organ
Activity planned outside the Class room, if any	SWOT on a local shop or a organisation.
Any other activity	Preparation of notes.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English.
Name of the Lecturer :	A. Rosalind
Course / Group :	IBA BCom Sem 2.
Paper :	General English.
Name of the Topic :	An Astologer's Day.
Hours required :	03.
Learning Objectives	To show the impact of superstitions and how astrologers convince with their tricks.
Previous knowledge to be reminded	Childhood experiences.
Topic Synopsis	(Continue on the reverse side if needed) The story is about a day in the life of a fake astrologer. He attracts people by dressing up like a astrologer. But one day he happens to meet his friend in the past who is seeking revenge against him. How he escapes is told in the story.
Examples/Illustrations	Astrology examples and types.
Additional inputs	Superstitions related to astrology.
Teaching Aids used	Text You Tube.
References cited	Research studies
Student Activity planned after the teaching	Reading Exercise.
Activity planned outside the Class room, if any	Discussion on superstitions in villages and awareness
Any other activity	Notes prepared.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 20[illegible] - 2022

Name of the Department / Subject :	English.
Name of the Lecturer :	A. Rosalind
Course / Group :	IBA BCom
Paper :	General English
Name of the Topic :	Ode to the west wind
Hours required :	04.
Learning Objectives	To learn the impact of a stormy wind and the beauty of rhymen the ode.
Previous knowledge to be reminded	favourite poems still remembered.
Topic Synopsis	(Continue on the reverse side if needed) PB Shelly wrote the ode to the West Wind and is a fearful detailed description of the west wind. The poet gives the loud and clear image and message that joy would follow sadness and there is hope after grief.
Examples/Illustrations	poems on Nature
Additional inputs	Related poems by other romantic poets
Teaching Aids used	Text, Youtube
References cited	Research articles, images.
Student Activity planned after the teaching	Reading poems.
Activity planned outside the Class room, if any	focus on the rhyme and vocabulary
Any other activity	Notes prepared

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

e of the Department / Subject :	English
e of the Lecturer :	A. Rosalind
se / Group :	IBA, BCom Sem 2.
er :	General English
e of the Topic :	The Doll's House
s required :	03.
ning Objectives	To highlight the social durde in society and how parents teach children to maintain walls.
ious knowledge to be nded	Childhood games and playing with dolls.
c Synopsis	*(Continue on the reverse side if needed)* The story written by katherine reveals the cruelty of grown up people in the society, class status and such and poor differences. The writer shows the purity and innocence of small children and equality they maintain
mples/Illustrations	Examples of children innocence and adult's cruelty
itional inputs	Racial discrimination and social durdes.
ching Aids used	Text.
erences cited	Related stories
dent Activity planned after the hing	Discussion on differences between rich and poor.
vity planned outside the Class n, if any	Vocabulary building and tense structures
other activity	Reading exercise

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	IBA BCom sem 2.
Paper :	General English.
Name of the Topic :	The Night Train at Deoli
Hours required :	03.
Learning Objectives	To learn voc and develop vocabulary and writing skills
Previous knowledge to be reminded	Childhood experiences of travel
Topic Synopsis	(Continue on the reverse side if needed) The story written by Ruskin Bond is the story of chance meeting between an eighteen year boy and a poor young girl selling baskets. The story is refreshing, interesting and reflects the innocence of young people.
Examples/Illustrations	Examples of chance meetings
Additional inputs	Inputs on journeys and related experiences
Teaching Aids used	Text-
References cited	Internet stories related to travel and meeting new people.
Student Activity planned after the teaching	Students share travel stories
Activity planned outside the Class room, if any	Incidents during train journeys
Any other activity	Focus on sentence structures

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	III BA EPS cluster
Paper :	American Literature
Name of the Topic :	A Raisin in the Sun.
Hours required :	05
Learning Objectives	To stress the importance to realising dreams and goals.
Previous knowledge to be reminded	Dreams and goals in students and hinderances.
Topic Synopsis	(Continue on the reverse side if needed) The play underlines the theme of racism and Hansberry uses the theme of race, race gender to create conflict within the characters, to help achieve their dreams and unite as a family
Examples/Illustrations	Examples of racial discrimination and colour divide.
Additional inputs	Emotional trauma connected with racism
Teaching Aids used	PPT, Research articles, text
References cited	Research studies
Student Activity planned after the teaching	Discussions and opinions on family relations.
Activity planned outside the Class room, if any	Students share experiences like those of the characters.
Any other activity	Notes prepared.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

Name of the Department / Subject :	English
Name of the Lecturer :	A. Rosalind
Course / Group :	III BA ERT cluster
Paper :	American Literature
Name of the Topic :	9 Joo.
Hours required :	05
Learning Objectives	To understand the meaning of Co slavery, denial of rights and inequality.
Previous knowledge to be reminded	Caste durde in India.
Topic Synopsis	*(Continue on the reverse side if needed)* The poem is a free verse and focusses on ~~Aefri~~ African American durde, identity within the domain dominant white culture of USA. The poem emphasizes the the black is worthy to be American and respected
Examples/Illustrations	Examples of slavery and african American experiences
Additional inputs	Add inputs on civil war in America and American citizen rights
Teaching Aids used	Text Research articles.
References cited	Related poems.
Student Activity planned after the teaching	Discussion and brainstorming On Racism
Activity planned outside the Class room, if any	Group Discussion
Any other activity	Notes prepared.

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind
ourse / Group :	III BA EPT Sec Cluster Sem 6.
aper :	American Literature
ame of the Topic :	The Emperor Jones.
ours required :	05
earning Objectives	To understand a psychological turmoil in people, awareness on social evils and selfish motives.
evious knowledge to be minded	Experiences of theatre plays, street plays.
pic Synopsis	(Continue on the reverse side if needed) The play originally called The Silver Bullet is effective as pure theatre through its use of drums and gunshot and jungle setting. The play shows the soul's attempt to seek salvation and freedom from bondage.
amples/Illustrations	Examples of influence of materialism and selfishness.
ditional inputs	Use of symbolism in the play
aching Aids used	Text.
ferences cited	Critical Analysis by
dent Activity planned after the ching	Discussion on the symbolism employed by the playwright.
vity planned outside the Class m, if any	Focus on the language and Vocabulary.
other activity	Notes prepared.

A Rosalind
Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 2021 - 2022

ame of the Department / Subject :	English
ame of the Lecturer :	A. Rosalind
ourse / Group :	III BA EPJ Sem 6 Cluster
aper :	American Literature
ame of the Topic :	The adventures of Tom Sawyer.
ours required :	05
earning Objectives	To understand the social satire in the novel
revious knowledge to be minded	Childhood experiences
opic Synopsis	(Continue on the reverse side if needed) The Adventures of Tom Sawyer is set published in 1876, in the town of Petesburg. The novel takes one into the world of imagination through the mischievous nature of Tom. The book shows the joy of childhood.
xamples/Illustrations	Examples of childhood pranks.
dditional inputs	symbolism and literary concepts
eaching Aids used	Text Youtube videos.
eferences cited	Research articles.
udent Activity planned after the aching	Related stories shared by students
ctivity planned outside the Class om, if any	Discussion on themes in the novel.
ny other activity	Notes prepared by students

A Rosalind

Signature of the Lecturer

SRR & CVR GOVT. DEGREE COLLEGE (A), VIJAYAWADA-520 004.

Teaching Plan / Notes : 20 21 - 20 22

ame of the Department / Subject :	English.
ame of the Lecturer :	A. Rosalend
ourse / Group :	III BA EPJ 6 cluster
aper :	American Literature
ame of the Topic :	The great Carbuncle.
ours required :	05
earning Objectives	To help students understand self satisfaction.
evious knowledge to be minded	Moral stories on greed and ambition.
pic Synopsis	*(Continue on the reverse side if needed)* The story written by Nathaniel Hawthorne, a famous novelist explains the truth that earthly possessions are not necessary for success and that people should be satisfied with what they have.
amples/Illustrations	Related stories to inspire students
ditional inputs	Character analysis.
aching Aids used	Text, Research articles.
ferences cited	Critical Appreciation and research thesis available
dent Activity planned after the ching	Discussion on characters
ivity planned outside the Class m, if any	Reading exercise
other activity	Notes prepared.

A. Rosalend

Signature of the Lecturer

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021- 2022 & 2022-2023

Name of the Lecturer SK. Sajana

Department of Mathematics

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Mathematics
Name of the Lecturer	SHAIK SAJANA
Course / Group	II MECs & MCGs
Paper	III : Abstract Algebra month : October
Name of the Topic	Groups
Hours required	10 Hrs
Learning Objectives	Def. of a group, Examples & properties
Previous Knowledge to be reminded	Set theory, Union & Intersection of Sets & elements of it.
Topic Synopsis	Algebraic Structure : A non empty set together with one or more binary operations. Let G be a non empty set & '∘' be a B.O. Semi Group : If (G,∘) Satisfies Associative property, then (G,∘) is called Semi group. monoid : If (G,∘) Satisfies Identity property & Associative then (G,∘) is called a monoid. Groups : If (G,∘) be a monoid & it Satisfies inverse property, then it is called a group. (Z,+), (R/{0}, ×) are groups. order of a group : Number of elements in a group.
Examples / Illustrations	(N,+) is a Semigroup not a monoid (Z,+) is a group.
Additional Inputs	Converse for each one, i.e., (N,+) is not a monoid & (Z,×) is not a group.
Teaching Aids used	Black Board Teaching & through Digital board PDF present
References cited	Text book by S. chand publications
Student Activity Planned after the teaching	Group discussion
Activity Planned outside the Class room, if any	Problem Solving
Any other Activity	Gathering more Examples

Detailed Synopsis:

→ Addition modulo 'm': Let $a, b \in \mathbb{Z}$ and m be a fixed positive integer. Then $a +_m b = r$, r is the remainder when $a+b$ is divided by m.

Ex:- $20 +_3 5 = 1$, since 1 is the remainder when $20+5=25$ is divided by 3.

Congruences: Let $a, b \in \mathbb{Z}$ and m be any fixed positive integer. If m divides $a-b$, then we say the $a \equiv b \pmod m$, i.e.,

$m \mid a-b \Rightarrow (a-b) = mx$, $x \in \mathbb{Z}$ &

$m \mid a-b \Rightarrow a \equiv b \pmod m$.

Ex:- $22 \equiv 13 \pmod 3$, since $22-13=9$ & $3 \mid 9$ ✓

→ If p is a prime then $\mathbb{Z}_p / \{0\} = \{1, 2, 3, \ldots, p-1\}$ is a group w.r.t multiplication modulo p!

order of an element of a group: $\forall a \in G$, then $\exists$ a l.p. n, $a^n = e$, e is the identity in G. Then $O(a) = n$, if no such n exist, we say that $O(a) = \infty$ or infinite.

Ex:- (1) In $(\mathbb{Z}_4 = \{0, 1, 2, 3\}, +_4)$, $O(2) = 2$

(2) In $(\mathbb{Z}, +)$ where if no elt has order & it is of order (zero) (0) or infinite.

So for any $a \in \mathbb{Z}$, $O(a) = 0 / \infty$

→ The intersection of two subgroups is a subgroup.

→ The union of two subgroups is a subgroup, if one can contained the other

For Future

Sig of Lecturer

Sig of Lec Incharge

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	MATHEMATICS
Name of the Lecturer	SHAIK SAJANA
Course / Group	II MECs & MCG
Paper	II: Abstract Algebra Month: octber/nov
Name of the Topic	Groups, Subgroups & Cosets
Hours required	17 Hrs
Learning Objectives	properties of groups & subgroups with examples
Previous Knowledge to be reminded	Properties of groups Previously discussed
Topic Synopsis	Order of an element of a group: Let a be an element of a group G, if ∃ a s.p.i n ∋ $a^n = e$, e is the identity ell. Then n is called the order of 'a'. If no such 'n' exists then order a is 0 or infinity & denoted by O(a). Subgroup: Let (G,o) be a group & H be a subset of G. If (H,o) is also a group then H is called subgroup of G. Coset: Let H,·) be a subgroup of (G,·). For any a∈G, the set aH = {ah / h∈H} is called left coset of H in G. My Ha is a right coset of H in G.
Examples / Illustrations	(Z,+) is a subgroup of (R,+). 2Z is a subgroup of Z.
Additional Inputs	Converse of Lagranges theorem. i.e., If H={1,-1} is a subset of G={±1, ±i}, |H|=2 |G|=4 but H is not a subgroup
Teaching Aids used	Black Board Teaching & ICT: Virtual Board
References cited	Abstract Algebra by S. chand publications
Student Activity Planned after the teaching	Assignment conducted
Activity Planned outside the Class room, if any	Problems for Practise
Any other Activity	Group discussion

Detailed Synopsis: Let G be a nonempty set and '∘' be a binary operation defined on G.

→ (G, ∘) is said to be a group if it satisfies the following properties (axioms)

(i) Associative axiom : $a \circ (b \circ c) = (a \circ b) \circ c$

(ii) Identity axiom : $a \circ e = e \circ a = a$

(iii) Inverse axiom : $a \circ a^{-1} = a^{-1} \circ a = e$, where $a, b, c, e, a^{-1} \in G$.

Ex: $(\mathbb{Z}, +)$ be a group. '0' be the identity element in $\mathbb{Z}$ and also $\forall\ a \in \mathbb{Z}$, $-a$ is the inverse of a in $\mathbb{Z}$ w.r.to '+'.

order of a group : The no. of elements in a group G is called the order of a group and it is denoted by $o(G)$ or $|G|$.

Ex: $(G = \{1, \omega, \omega^2\}, \times)$ be a group and $|G| = 3$.

properties : ① In a group, identity element is unique.

② In a group, inverse of every element is unique.

Ex: The set $\mathbb{Q}^+$ of all rational numbers is an abelian group w.r.to the operation '∘' defined by $a \circ b = \frac{ab}{3}$, $\forall\ a, b \in \mathbb{Q}^+$.

Identity axiom : $\forall\ a \in \mathbb{Q}^+$, $\exists\ e \ni a \circ e = a \Rightarrow \frac{ae}{3} = a \Rightarrow e = 3 \in \mathbb{Q}^+$

Inverse axiom : $\forall\ a \in \mathbb{Q}^+\ \exists\ a^{-1} \ni a \circ a^{-1} = e \Rightarrow \frac{a \cdot a^{-1}}{3} = 3 \Rightarrow a^{-1} = \frac{9}{a} \in \mathbb{Q}^+$

Cancellation laws : For $a \neq 0, b, c \in G$ & G is a group.

LCL: $ab = ac \Rightarrow b = c$ & RCL: $ba = ca \Rightarrow b = c$.

→ A finite semigroup $(G, \cdot)$ satisfying cancellation laws is a group.

For Private

Signature of the Lecturer

Signature of the Lecturer In-charge

Signature of the Principal

TEACHING PLAN (SYNOPSIS)

December

Name of the Department / Subject :	MATHEMATICS
Name of the Lecturer :	SHAIK SAJANA
Course / Group :	II MEs & MCs
Paper :	II: Abstract Algebra Month : December
Name of the Topic	Normal Subgroups, Homomorphisms, permutation groups & Cyclic groups
Hours required	24 Hrs
Learning Objectives	Normal Subgroups & remaining topics: theorems, Proofs & Prob. Solving
Previous Knowledge to be reminded	Groups & Subgroups concepts
Topic Synopsis	Normal Subgroup: Let H be a subgroup of a group G. Then H is a n.s.g. of G, if $xHx^{-1} \subseteq H, \forall x \in G$. → Every group G have $\{e\}$ & G are as normal subgroups & these subgroups are called trivial normal subgroups. Homomorphism: Let f be a mapping from a group G to a group G'. Then f is said to be homo, if $f(a.b) = f(a).f(b)$. permutation: A bijective mapping from a group G onto itself is called a permutation
Examples / Illustrations	→ $\{1, -1\}$ is a normal subgroup of the group $\{1, -1, i, -i\}$ → The group $(Z_4, +_4)$ is isomorphic to the group $(\{\pm 1, \pm i\}, \cdot)$.
Additional Inputs	Generators of Cyclic groups
Teaching Aids used	Black Board Teaching & Virtual classroom
References cited	Text book for B.Sc., S. Chand publications
Student Activity Planned after the teaching	Assignments & Seminars
Activity Planned outside the Class room, if any	Practice Problems
Any other Activity	Group discussion

Normal Subgroup: A subgroup H of a group G is said to be a normal subgroup of G, if $xhx^{-1} \in H$, $\forall x \in G$ & $\forall h \in H$. It is denoted by $H \trianglelefteq G$.

Properties: (i) A subgroup H of a group G is normal, if $xHx^{-1} = H$, $\forall x \in G$.

(ii) A subgroup H of a group G is normal $\Leftrightarrow$ Each left coset of H in G is a right coset of H in G.

(iii) The intersection of two normal subgroups is a subgroup.

Simple Group: A group G is called simple if it has no proper normal subgroup.

Ex: 1. $A = \{1, -1\}$ is a normal subgroup of the group G.

2. $(G = Z_3, +_3)$ is a simple group, bcz it has no proper normal subgroup.

Homomorphism: If G & G' be two groups. The mapping $f: G \to G'$ defined by $f(a) = a^2$, $\forall a, b \in G$ & $f(a) * f(b) \in G'$ is called Homomorphism.

One-one: - A mapping $f: G \to G'$ is called one-one mapping, if $f(a) = f(b) \Rightarrow a = b$.

Onto: - A mapping $f: G \to G'$ is called onto mapping, if for every $y \in G'$, then $\exists\ x \in G$ such that $f(x) = y$.

Isomorphism: - Let $f: G \to G'$ be a homomorphism. If f is one to one and onto mapping, then f is called Isomorphism.

Fundamental theorem: - Let f be a homomorphism from a group G onto a group G' with kernel k. Then $G/k \cong G'$.

Permutation: Let G be a group. Then the bijective mapping from G onto G is called a permutation.

permutation group: - The collection of permutations defined on a set forms a group w.r.to. Composition of permutation is called permutation group.

Cyclic group: - A group generated by a single element is called a cyclic group.

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I MPC & MPCA
Paper :	Differential Equations
Name of the Topic	Introduction
Hours required	10 Hrs
Learning Objectives	Differential Equations & Solutions of different types of D.E's
Previous Knowledge to be reminded	Formulae of differentiation
Topic Synopsis	Diff^n Eqn^n : An equation involving differentials of one dependent variable & its derivatives w.r.to. one or more independent variables is called a differential equation ordinary diff^n equation : If the derivatives in the equation have reference to only a single independent variable Ex :- $\left(\frac{d^2y}{dx^2}\right)^3 - 4\left(\frac{dy}{dx}\right)^2 + 7y = \sin x$ Partial diff^n equation : If the derivatives in the equation have reference to more than one independent variable.
Examples / Illustrations	1. $(y+z)\frac{\partial z}{\partial x} + (z+x)\frac{\partial z}{\partial y} = x+y$ 2. $\left(\frac{\partial z}{\partial x}\right)^2 + \left(\frac{\partial z}{\partial y}\right)^2 = 4z$
Additional Inputs	Families of plane Curves : For each given set of real values of $c_1, c_2, \ldots, c_n$ the equation $\phi(x, y, c_1, c_2, \ldots, c_n) = 0$ represents a curve in xy-pl
Teaching Aids used	Black Board Teaching
References cited	B.Sc. Text book, Vol.I by S. Chand publications
Student Activity Planned after the teaching	Assignments, Group discussion
Activity Planned outside the Class room, if any	Practice problems
Any other Activity	—

Degree of a differential equation: Let $F(x, y, y', y'', \ldots, y^{(n)}) = 0$ be a differential equation of order n. If the given differential equation is a polynomial in $y^{(n)}$, then the highest degree of $y^{(n)}$ is defined as the degree of the differential equation.

Ex:- $y = x\frac{dy}{dx} + \sqrt{1+\left(\frac{dy}{dx}\right)^2} \Rightarrow \left(y - x\frac{dy}{dx}\right)^2 = 1 + \left(\frac{dy}{dx}\right)^2 \Rightarrow (1+x^2)\left(\frac{dy}{dx}\right)^2 + 2xy\frac{dy}{dx} + (1-y^2) = 0$

Highest degree of $\frac{dy}{dx}$ is 2, hence the degree of above equn is 2.

Order of a Diff. equation: A differential equation is said to be of order n, if the n^{th} derivative is the highest derivative in that equation.

Ex:- $(x^2+1)\frac{dy}{dx} + 2xy = 4x^2$

Highest derivative is $\frac{dy}{dx} \Rightarrow$ order $= 2$.

Working Rule to form a Diff. Equn:

1. Let the given equn contain n arbitrary constants
2. Diff. the given equn n times to get n additional equations
3. Eliminate the n constants from $(n+1)$ equations given in (1) & (2).
4. Then we obtain the required diff. equn of order n.

Ex:- $x = A\cos(pt - \alpha)$

diff. w.r.to 't', we get

$$\frac{dx}{dt} = -Ap\sin(pt-\alpha)$$

$$\Rightarrow \frac{d^2x}{dt^2} = -Ap^2\cos(pt-\alpha)$$

$$= -p^2x$$

$$\Rightarrow \frac{d^2x}{dt^2} + p^2x = 0.$$

→ An equation of the form $\frac{dy}{dx} = f(x,y)$ is called a differential equation of the first order & first degree

Ex:- $\frac{dy}{dx} + \sqrt{\frac{1+y^2}{1-x^2}} = 0 \Rightarrow \frac{dy}{dx} = -\frac{\sqrt{1+y^2}}{\sqrt{1-x^2}} \Rightarrow \frac{dy}{\sqrt{1+y^2}} = \frac{-dx}{\sqrt{1-x^2}} \Rightarrow \sin^{-1}y + \sin^{-1}x = c$

For Physics

Sig. of the Lecturer — Sig. of the In-charge — Sig. of Principal

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	SHAIK SAJANA
Course / Group :	I BSCs
Paper :	Mathematics for Data Science
Name of the Topic	Matrices & Basic Operations, Singular & Non Singular Matrices
Hours required	10 Hrs
Learning Objectives	Def. of Matrix, Elementary Operations
Previous Knowledge to be reminded	Matrices in lower classes
Topic Synopsis	Matrix: An mn elements of real or Complex arranged in m rows & n columns is called a matrix of order m×n. Elementary Properties: (Rows) 1. Interchange of rows (two) 2. Scalar multiplication of a row 3. Addition of two rows in which one is multiplied with a Scalar.
Examples / Illustrations	Ex:- $\begin{bmatrix} 5 & 4 \\ 1 & 2 \end{bmatrix}_{2\times 2}$ is a Square matrix of order 2.
Additional Inputs	Scalar & diagonal matrices. Elementary matrices
Teaching Aids used	Black Board Teaching
References cited	Matrices by Varista & Sharma
Student Activity Planned after the teaching	Seminars & Assignments
Activity Planned outside the Class room, if any	Problem Solving for practice
Any other Activity	More problems for practise

Square matrix:- An $m \times n$ matrix is said to be a square matrix if $m = n$, i.e., the no. of rows is equal to the no. of columns

→ Determinant of a square matrix $A_{n \times n}$ is denoted by $|A|$.

* If $|A| = 0$, then A is called a singular matrix

* If $|A| \neq 0$, then A is called a non-singular matrix.

Inverse of a square matrix: The inverse of a square matrix is exists if it is a non-singular matrix, i.e., $|A| \neq 0$.

The inverse of the square matrix A is denoted by A^{-1}, i.e.,

$$A^{-1} = \frac{1}{|A|} \cdot \text{adj } A,$$

where adj A = adjoint matrix of A.

Ex:- To find the inverse of $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 3 \\ 1 & 1 & 2 \end{bmatrix}$, $|A| = 1[4-3] - 2[6-3] + 1[3-2]$
$= 1 - 6 + 1 = -4$

To find adjoint of A

Co factor of 1 is $C_{11} = \begin{vmatrix} 2 & 3 \\ 1 & 2 \end{vmatrix} = 1 \Rightarrow M_{11} = 1$

" " 2 " $C_{12} = \begin{vmatrix} 3 & 3 \\ 1 & 2 \end{vmatrix} = 3 \Rightarrow M_{12} = -3$

" " 1 " $C_{13} = \begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix} = 1 \Rightarrow M_{13} = 1$

" " 3 " $C_{21} = \begin{vmatrix} 2 & 1 \\ 1 & 2 \end{vmatrix} = 3 \Rightarrow M_{21} = -3$

" " 2 " $C_{22} = \begin{vmatrix} 1 & 1 \\ 1 & 2 \end{vmatrix} = 1 \Rightarrow M_{22} = 1$

" " 3 " $C_{23} = \begin{vmatrix} 1 & 2 \\ 1 & 1 \end{vmatrix} = -1 \Rightarrow M_{23} = 1$

" " 1 " $C_{31} = \begin{vmatrix} 2 & 1 \\ 2 & 3 \end{vmatrix} = 4 \Rightarrow M_{31} = 4$

" " 1 " $C_{32} = \begin{vmatrix} 1 & 1 \\ 3 & 3 \end{vmatrix} = 0 \Rightarrow M_{32} = 0$

" " 2 " $C_{33} = \begin{vmatrix} 1 & 2 \\ 3 & 2 \end{vmatrix} = -4 \Rightarrow M_{33} = -4$

$\text{Adj } A = [M_{ij}]^T$

$= \begin{bmatrix} 1 & -3 & 4 \\ -3 & 1 & 0 \\ 1 & 1 & -4 \end{bmatrix}$

$\Rightarrow A^{-1} = \begin{bmatrix} -\frac{1}{4} & \frac{3}{4} & -1 \\ \frac{3}{4} & -\frac{1}{4} & 0 \\ -\frac{1}{4} & -\frac{1}{4} & 1 \end{bmatrix}$

Sign of the lecturer — Sign of the In-charge — Sign. of Principal

TEACHING PLAN (SYNOPSIS)

December

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I MPC & MPCA
Paper :	Differential Equations
Name of the Topic	I Order & I degree differential Equations
Hours required	20 Hrs
Learning Objectives	Exact diff. Equations, Linear diff. Equ. & change of variables
Previous Knowledge to be reminded	Solutions of I Order & I degree differential equations
Topic Synopsis	Exact Diff. Equations: A Diff. equation is said to be exact, if it is integrable directly. An equation $Mdx+Ndy=0$ is said to be exact, if $\frac{\partial M}{\partial y}=\frac{\partial N}{\partial x}$. Sol. of Exact diff. equ. is, $\int M dx + \int$(no 'x' terms in N)$dy = c$. Non Exact diff. Equation: A D.E. is said to be non exact, if it is not integrable directly. i.e., an equation $Mdx+Ndy=0$ is said to be not exact, if $\frac{\partial M}{\partial y}+\frac{\partial N}{\partial x}$.
Examples / Illustrations	$y^2dx+2xy\,dy=0$ is exact, since it can be written as $d(xy^2)=0$
Additional Inputs	Solutions of homogeneous & non homogeneous linear DEs.
Teaching Aids used	Black Board Teaching
References cited	D.D.E & P.D.E by Rai Singhania
Student Activity Planned after the teaching	Assignment & Seminars conducted
Activity Planned outside the Class room, if any	Problems for practise
Any other Activity	More practise problems

Solutions for non Exact Equations: (Equations Reducible to Exact)

1. **Homogeneous**: If $Mdx+Ndy=0$ ——① is homogeneous. Then Integrating factor of eqn① is $I.F.=\frac{1}{Mx+Ny}$.

After multiplying eqn① with I.F, then the eqn① converted to exact D.E.

2. $Mdx+Ndy=0$ is in the form of $y.f(xy)dx+x.g(xy)dy=0$

Then Integrating factor of eqn① is $I.F.=\frac{1}{Mx-Ny}$.

After multiplying eqn① with I.F., then eqn① converted to exact D.E.

3. $\frac{\frac{\partial M}{\partial y}-\frac{\partial N}{\partial x}}{N}=f(x)$ if k is a real number of Complex numbers.

Then Integrating factor, $I.F.=e^{\int f(x)dx}=e^{\int k\,dx}$.

After multiplying eqn① with I.F., then eqn① converted to exact Diff. Equn.

4. $\frac{\frac{\partial N}{\partial x}-\frac{\partial M}{\partial y}}{M}=g(y)$ if k is real number of Complex numbers. Then Integrating factor, $I.F.=e^{\int g(y)dy}=e^{\int k\,dy}$

After multiplying eqn① with I.F., then eqn① converted to exact diff. Equations.

Linear Differential Equations: An equation $\frac{dy}{dx}+P.y=Q$, where $P(x)$ & $Q(x)$ are functions of x alone is said to be linear diff. equation. Integrating factor of the above linear equation is $=e^{\int P\,dx}$. Then general solution of equation is

$$y.(I.F)=\int Q.(I.F)dx+c$$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Mathematics — December
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I DSG
Paper :	Maths for Data Science
Name of the Topic	Rank of a Matrix, System of homogeneous & non homogeneous
Hours required	18 Hrs
Learning Objectives	→ To find Rank, Solving Homo. & non Homo eqns, L.P. Simplex method
Previous Knowledge to be reminded	Earlier concepts in mathematics
Topic Synopsis	Rank of a matrix :- Let $A_{n\times n}$ be square matrix and r be the rank of A, if (i). r^{th} minor of A is non zero (any) (ii) Every $(r+1)^{th}$ minor of A is zero. System of Homogeneous linear equations & non Homogeneous linear equations : Given System can be written as $AX = 0$, then it is homogeneous & $AX = B$, $B \neq 0$, then it is called non homogeneous.
Examples / Illustrations	$2x+3y+z=0$, $x+2y+2z=0$, $x+y+z=0$ is a System of homo. linear equations
Additional Inputs	more problems on it
Teaching Aids used	Black Board Teaching
References cited	Matrics by Vasista & Sharma
Student Activity Planned after the teaching	Problem Solving, Assignments
Activity Planned outside the Class room, if any	practise Problems
Any other Activity	More problems for practise

System of Homo & non Homo Equations: The System of equations

$$\left.\begin{aligned} a_{11}x_1 + a_{12}x_2 + a_{13}x_3 &= 0 \\ a_{21}x_1 + a_{22}x_2 + a_{23}x_3 &= 0 \\ a_{31}x_1 + a_{32}x_2 + a_{33}x_3 &= 0 \end{aligned}\right\} \text{(I)} \qquad \left.\begin{aligned} a_{11}x_1 + a_{12}x_2 + a_{13}x_3 &= b_1 \\ a_{21}x_1 + a_{22}x_2 + a_{23}x_3 &= b_2 \\ a_{31}x_1 + a_{32}x_2 + a_{33}x_3 &= b_3 \end{aligned}\right\} \text{(II)}$$

Called homo & non-homo linear Equations, respectively.

Systems (I) & (II) can be written as $AX = 0$ & $AX = B$, respectively

Solving Homo Syst of linear equations:

System (I) can be written as $AX = 0$, where

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \quad X = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} \quad 0 = \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}$$

First converting above matrix A in the form of A', i.e, upper triangular matrix as

$$A' = \begin{bmatrix} a_{11}' & a_{12}' & a_{13}' \\ 0 & a_{22}' & a_{23}' \\ 0 & 0 & a_{33}' \end{bmatrix}$$

Then from the above matrix, System (III) can be written as

$$\left.\begin{aligned} a_{11}'x_1 + a_{12}'x_2 + a_{13}'x_3 &= 0 \\ a_{22}'x_2 + a_{23}'x_3 &= 0 \\ a_{33}'x_3 &= 0 \end{aligned}\right\} \text{(III)}$$

By Solving the above System (III), we get the values of x_1, x_2, x_3 respectively.

Solving non homo Syste of linear equations:

From Syst (II), Consider the Augmented matrix,

$$[A:B] = \begin{bmatrix} a_{11} & a_{12} & a_{13} & b_1 \\ a_{21} & a_{22} & a_{23} & b_2 \\ a_{31} & a_{32} & a_{33} & b_3 \end{bmatrix}$$, after converting $[A:B]$ to upper triangular matrix, we get the values of x_1, x_2, x_3.

Problems related

Syl of Lectures

Syl of Lectures

TEACHING PLAN (SYNOPSIS)

January

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	II MCCs
Paper :	III: Abstract Algebra
Name of the Topic	Rings and Subrings, Ideals
Hours required	12 Hours
Learning Objectives	Concepts in Rings, Subrings and Ideals & properties
Previous Knowledge to be reminded	Group theoretic concepts
Topic Synopsis	Ring: A non empty Set R with respect to the binary operations + and . is called a ring, if (i) $(R,+)$ is an abelian group (ii) $(R,\cdot)$ is a Semi group (iii) DL's hold. Commutative Ring: If a ring satisfies Commutative property, then it is called Commutative Ring
Examples / Illustrations	→ $(\mathbb{Z},+,\cdot)$ is a Commutative ring
Additional Inputs	→ Divisors & Units
Teaching Aids used	Black Board Teaching & Virtual through Black Board
References cited	Vol. III B.Sc. Text books by S. chand Publications
Student Activity Planned after the teaching	Seminars Conducted & Problems on home work
Activity Planned outside the Class room, if any	Problem Solving for practise
Any other Activity	Quiz

Ring: R is a non empty set. If R satisfies the following properties then it is called a ring.

(i) $(R,+)$ is an abelian group

(ii) $(R,\cdot)$ is a semi group

(iii) Distribution laws hold.

Division Ring: Let R be a non empty set. $(R,+,\cdot)$ is said to be a Division Ring, if the following conditions hold

(i) $(R,+)$ is an abelian group

(ii) $(R\setminus\{0\},\cdot)$ is an abelian group

(iii) Distribution laws hold.

Field: Let F be a non empty set. $(F,+,\cdot)$ is said to be a Field, if

(i) $(F,+)$ is an abelian group

(ii) $(F\setminus\{0\},\cdot)$ is an abelian group

(iii) Distribution laws hold.

Properties:

1. Every Field is an Integral domain
2. Every finite Integral domain is a field.

characteristic of a ring: Let R be a ring. If $Pa=0$, $\forall a\in R$, $P>0$, then the characteristic of the ring R is equal to P, i.e., $ch\,R=P$

Ex: $(\mathbb{Z}_7,+_7,\times_7)$ Ring, $ch\,R=ch\,\mathbb{Z}_7=7$, if

Subring: A non empty subset of a ring satisfies all the properties of a ring, then it is called subring.

Ideal of a ring: A non empty subset U of a ring R is called an ideal, if

(i) $a-b\in U$, $\forall a,b\in U$, (ii) $ax, xa\in U$, $\forall a\in U$, $x\in R$.

To be a
Signature of the Lo

Sig. of the Incha-charge

Sig of the guard

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Mathematics
Name of the Lecturer	Dr. SWATI SAXENA
Course / Group	I MSc & MSCA
Paper	I Differential Equations
Name of the Topic	I Order but not of I degree Differential Equations
Hours required	18 Hrs
Learning Objectives	Solvable for p, y & x, clairaut's equations
Previous Knowledge to be reminded	Solutions of I Order & I degree Diff. Equations
Topic Synopsis	An equation of the form $\left(\frac{dy}{dx}\right)^n + P_1\left(\frac{dy}{dx}\right)^{n-1} + P_2\left(\frac{dy}{dx}\right)^{n-2} + \dots + P_n y = 0$ is called I Order but not of I degree Diff. equation. Ex:- $\left(\frac{dy}{dx}\right)^2 + 3\left(\frac{dy}{dx}\right) + 6y = 0$. Clairaut's equation : A Diff. equation in the form of $y = px + f(p)$, where $p = \frac{dy}{dx}$ is called Clairaut's equation.
Examples / Illustrations	→ $\left(\frac{dy}{dx}\right)^2 + 3\left(\frac{dy}{dx}\right) + 2y = 0$ is a I Order, not of I degree D.E.
Additional Inputs	—
Teaching Aids used	Black Board Teaching
References cited	B.Sc. Text book by S. Chand Publications
Student Activity Planned after the teaching	Problem Solving by Students
Activity Planned outside the Class room, if any	Assignment
Any other Activity	Students Quizzes

Solvable for p: $\left(\frac{dy}{dx}\right)^n + P_1\left(\frac{dy}{dx}\right)^{n-1} + \dots + P_n y = 0$ (3) is called I Order and nth Degree Diff equations.

Convert the above eqn (3) to product of factors as

$$\left(\frac{dy}{dx} - f_1(x)\right)\left(\frac{dy}{dx} - f_2(x)\right)\cdots\left(\frac{dy}{dx} - f_n(x)\right) = 0$$

$$\Rightarrow \frac{dy}{dx} - f_1(x) = 0,\ \frac{dy}{dx} - f_2(x) = 0,\ \dots,\ \frac{dy}{dx} - f_n(x) = 0$$

Solutions to the above factors are

$$F(x, y, c_1) = 0,\ F(x, y, c_2) = 0,\ \dots,\ F(x, y, c_n) = 0$$

$\therefore$ Solution of above Diff equation is

$$F(x, y, c_1)\, F(x, y, c_2)\cdots F(x, y, c_n) = 0 //$$

Solvable for y: Convert eqn (1) to in the form as

$$y = F(x, p) \quad — (4)$$

diff the above equation w.r.to 'x', we get

$$\frac{dy}{dx} = g\left(x, p, \frac{dp}{dx}\right)$$

$$\Rightarrow p = g\left(x, p, \frac{dp}{dx}\right) \quad — (5)$$

The above equation is in two variables p & x, it can be solved.

The Solution of eqn (5) is $\psi(x, p, c) = 0$ — (6),

by eliminating p from (4) & (6)

→ If it is not possible to eliminate 'p' from (4) & (6), the general Solution of (1) is $x = f_1(p, c)$ & $y = f_2(p, c)$.

→ This method is specially useful for the equations in which 'x' is absent.

∴ Hy, we can solve the equation (1) by the method of Solvable for 'x' when y is absent.

Sign of the Lecturer Sign of Asstt. In-charge Sign of Principal

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Mathematics
Name of the Lecturer	Dr. SHAIK SAJIDA
Course / Group	I DSCs
Paper	I: Mathematics for Data Science
Name of the Topic	characteristic values & characteristic vectors
Hours required	12 Hrs
Learning Objectives	characteristic vectors & values, Cayley-Hamilton theorem
Previous Knowledge to be reminded	System of homogeneous linear equations
Topic Synopsis	characteristic matrix: Let A be an $n \times n$ square matrix, then $A-\lambda I$ is called ch. matrix, $\lambda \in R$. characteristic polynomial: $\lvert A-\lambda I \rvert$ is called ch. polynomial characteristic equation: $\lvert A-\lambda I \rvert = 0$ is called ch. equation characteristic vector: $AX = \lambda X$, then λ is called ch. value & X is called ch. vector of the square matrix.
Examples / Illustrations	$\Rightarrow A = \begin{bmatrix} 5 & 4 \\ 1 & 2 \end{bmatrix}$, $\lvert A-\lambda I \rvert = 0 \Rightarrow \begin{vmatrix} 5-\lambda & 4 \\ 1 & 2-\lambda \end{vmatrix} = 0 \Rightarrow \lambda = 1$ & 6 (ch. values)
Additional Inputs	Find a given square matrix, given polynomial expressed in the form of linear polynomial.
Teaching Aids used	Black Board Teaching
References cited	B.Sc. Text book by S. chand publications
Student Activity Planned after the teaching	Seminars Conducted & problem Solving
Activity Planned outside the Class room, if any	Assignments
Any other Activity	problem Solving

→ Any non-zero vector X is said to be characteristic vector of a square matrix A, if there exists a scalar λ such that $AX = \lambda X$. Also λ is called characteristic value of A.

* To find characteristic values & the corresponding characteristic vectors.

Let $A = \begin{bmatrix} 1 & 4 \\ 1 & 1 \end{bmatrix}$.

ch. equation, $|A - \lambda I| = 0$

$\Rightarrow \begin{vmatrix} 1-\lambda & 4 \\ 1 & 1-\lambda \end{vmatrix} = 0$

$\Rightarrow \lambda^2 - 2\lambda - 3 = 0$

$\Rightarrow \lambda = 3, \lambda = -1$

At $\lambda = 3$: $AX = \lambda X$

$\Rightarrow (A - \lambda I)X = 0$

$\Rightarrow \begin{bmatrix} -2 & 4 \\ 1 & -2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$

$\sim \begin{bmatrix} 1 & -2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$

$\sim \begin{bmatrix} x - 2y \\ 0 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$

$\Rightarrow x - 2y = 0$

$\Rightarrow x + y = 0$

Taking $y = k_1$, k_1 is a constant

$\Rightarrow x = -k_1$

$\therefore X = \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -k_1 \\ k_1 \end{bmatrix} = k_1 \begin{bmatrix} -1 \\ 1 \end{bmatrix}$

At $\lambda = -1$: $(A - \lambda I)X = 0$

$\Rightarrow \begin{bmatrix} 2 & 4 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$

$\Rightarrow x + 2y = 0$

Let $y = k_2$, then $x = -2k_2$

$\therefore X = \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -2k_2 \\ k_2 \end{bmatrix}$

$= k_2 \begin{bmatrix} -2 \\ 1 \end{bmatrix}$

This shows that ch. values of A are $3, -1$ & their corresponding ch. vectors are $k_1 \begin{bmatrix} -1 \\ 1 \end{bmatrix}$, $k_2 \begin{bmatrix} -2 \\ 1 \end{bmatrix}$

Cayley-Hamilton Theorem: Every square matrix satisfies its characteristic equation.

→ By using Cayley-Hamilton theorem, find the inverse of $\begin{bmatrix} 3 & -2 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$

ch. eqn of above matrix is, $|A - \lambda I| = 0 \Rightarrow \lambda^3 - \lambda^2 + \lambda - 1 = 0$

$\Rightarrow A^3 - A^2 + A - I = A^{-1}$, by putting $X = A$.

Ans: $A^{-1} = \begin{bmatrix} 1 & -1 & 0 \\ 2 & -3 & 4 \\ 2 & -1 & 1 \end{bmatrix}$

For Sign
Sig. of the Lecturer

Sig. of Lec. In-charge

Sig. of Principal

TEACHING PLAN (SYNOPSIS)

February

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAJU SAJANA
Course / Group :	I MSc & MPCA
Paper :	I : Differential Equations
Name of the Topic	Higher order linear Diff. Equations
Hours required	18 Hours
Learning Objectives	Problem Solving on Homogeneous & non-Homogeneous L.D.E's
Previous Knowledge to be reminded	Diff. equations of I Order & previous Concepts
Topic Synopsis	An equation of the form $P_1 \frac{d^n y}{dx^n} + P_2 \frac{d^{n-1} y}{dx^{n-1}} + \dots + P_n y = Q(x)$ is called Higher Order linear diff. equation. → If $Q = 0$, then it is called Homogeneous linear diff. equation → If $Q \neq 0$, then it is called a non-Homogeneous linear diff. equation.
Examples / Illustrations	$\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + y = 0$ is a 2nd Order linear diff. equation
Additional Inputs	—
Teaching Aids used	Black Board Teaching
References cited	Ref. Text book by S. Chand publications
Student Activity Planned after the teaching	Problem Solving & Seminars by Students
Activity Planned outside the Class room, if any	Assignments
Any other Activity	Quiz

Higher order linear differential equations

The equation of the form $P_0\frac{d^n y}{dx^n} + P_1\frac{d^{n-1}y}{dx^{n-1}} + \dots + P_{n-1}y = Q(x)$, where

$P_0, P_1, \dots, P_{n-1}$ are real constants & $Q(x)$ is a function of x

operator form of the above equation is

$$(P_0 D^n + P_1 D^{n-1} + \dots + P_{n-1})y = Q(x)$$

Solution of the above diff. equation is complementary function & particular integral.

Complementary function (y_c):

The Auxiliary equation of the above equation is $f(m)=0$.

By solving the above equation, based on it the complementary function as follows

Roots	Complementary Solution
(1) Real distinct roots m_1 & m_2	$y_c = C_1 e^{m_1 x} + C_2 e^{m_2 x}$
(2) Real equal roots m_1 & m_1	$y_c = (C_1 + C_2 x)e^{m_1 x}$
(3) Complex roots $a \pm ib$	$y_c = e^{ax}(C_1 \cos bx + C_2 \sin bx)$
(4) Imaginary roots $a \pm \sqrt{b}$	$y_c = e^{ax}(C_1 \cosh x + C_2 \sinh x)$

particular Integral (y_p):

→ If $Q(x) = e^{ax}$, then $y_p = \frac{1}{f(D)}Q(x) = \begin{cases} \frac{1}{f(D)}e^{ax} = \frac{1}{f(a)}e^{ax}, & \text{when } f(a)\neq 0 \\ \frac{x}{f'(D)}e^{ax} = \frac{x}{f'(a)}e^{ax}, & \text{when } f(a)=0 \end{cases}$

→ If $Q(x) = \sin bx / \cos bx$ then

$$y_p = \frac{1}{f(D)}Q(x) = \frac{1}{f(D^2)}\sin bx/\cos bx$$

$$= \frac{1}{f(-b^2)}\sin bx/\cos bx, \text{ by replacing } D^2 \text{ by } -b^2$$

→ If $Q(x) = x^k$, then $y_p = \frac{1}{f(D)}x^k = (1+\phi(D))^{-1}x^k$

Yeshwanth

No. of the lectures

Page No.

TEACHING PLAN (SYNOPSIS)

February

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJIDA
Course / Group :	I DSG
Paper :	I: Mathematics for Data Science
Name of the Topic	Limits and Continuity
Hours required	22 Hours
Learning Objectives	Limits of Real valued Functions & Continuity, uniform Continuity
Previous Knowledge to be reminded	Set theory Concepts
Topic Synopsis	Let S be an aggregate, then the mapping $f: S \to R$ is called a real valued function. If $\lim_{x \to a} f(x) = l$, then we say that limit of the function f at $x = a$ is exists and it is equal to l. i.e., $\lvert x-a \rvert < \delta \Rightarrow \lvert f(x)-l \rvert < \epsilon$, for each $\epsilon > 0$ & $\delta > 0$. → Continuity at a point :- If $\lvert x-a \rvert < \delta \Rightarrow \lvert f(x)-f(a) \rvert < \epsilon$, for each $\delta > 0$, $\epsilon > 0$, f is called continuous at $x = a$.
Examples / Illustrations	$f(x) = x \sin x$ is continuous at $x = 0$.
Additional Inputs	Sequences & Infinite Series
Teaching Aids used	Black Board Teaching
References cited	Real Analysis by S.C. Malik.
Student Activity Planned after the teaching	Problem Solving & Seminars Conducted
Activity Planned outside the Class room, if any	Assignments
Any other Activity	Problem Solving

Limit of a real valued function: Let S be an aggregate and 'a' be a limit point of S.

→ **Left hand limit**:- For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a-\delta, a) \Rightarrow |f(x)-l|<\epsilon$

→ **Right hand limit**: For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a, a+\delta) \Rightarrow |f(x)-l|<\epsilon$

→ **Limit**:- For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a-\delta, a+\delta) \Rightarrow |f(x)-l|<\epsilon$

i.e., $f(a-0) = f(a+0) = \lim_{x\to a} f(x)$

Example:

1. $f(x)=|x|$ limit at $x=0$. $\left[\because |x| = \begin{cases} x, & x>0 \\ -x, & x<0 \end{cases}\right]$

$\lim_{x\to 0-} f(x) = \lim_{x\to 0} -x = 0$ & $\lim_{x\to 0+} f(x) = \lim_{x\to 0} x = 0$

$\Rightarrow \lim_{x\to 0} f(x) = 0$ //

Continuity of Real valued function:

→ **left hand Continuity**: For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a-\delta, a) \Rightarrow |f(x)-f(a)|<\epsilon$

→ **Right hand Continuity**: For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a, a+\delta) \Rightarrow |f(x)-f(a)|<\epsilon$

→ **Continuity**: For each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow x\in(a-\delta, a+\delta) \Rightarrow |f(x)-f(a)|<\epsilon$

Example: $f(x)=\frac{|x|}{x}$ is not continuous at $x=0$.

1. $\lim_{x\to 0-} f(x) = \lim_{x\to 0} \frac{-x}{x} = -1$ & $\lim_{x\to 0+} f(x) = \lim_{x\to 0} \frac{x}{x} = 1$

$\Rightarrow \lim_{x\to 0} f(x)$ does not exist and hence discontinuous

Uniform Continuity: $f: S\to R$ is uniformly continuous on S. If for each $\epsilon>0$, $\exists\ \delta>0 \Rightarrow |x_1-x_2|<\delta \Rightarrow |f(x_1)-f(x_2)|<\epsilon$, $\forall\ x_1, x_2 \in S$

Sig. of Lecturer Sig. of Le. In-charge Sig. of Principal

TEACHING PLAN (SYNOPSIS)

March

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I MSc & MPCA
Paper :	I : Differential Equations
Name of the Topic	Higher order linear Diffl Equations : (non Constant coefficients)
Hours required	18 Hours
Learning Objectives	To find P.I, when $R = e^{ax}.V$, $x^m V$: method of variation of parameters, Cauchy-Euler equation
Previous Knowledge to be reminded	Previous Concepts
Topic Synopsis	$\rightarrow \frac{1}{f(D)} e^{ax} v = e^{ax} \frac{1}{f(D+a)} v$ $\rightarrow \frac{1}{f(D)} xv = x \frac{1}{f(D)} v - \frac{f'(D)}{(f(D))^2} v$ Method of variation of parameters: Given equation, $y'' + Py' + Qy = R$ — (1), where P & Q are functions of x or real Constants and R is only function in x. Homo. of eq (1) is, $y'' + Py' + Qy = 0$ — (2) Let $y_c = C_1 u + C_2 v$ be the Sol. of (2) where u & v are functions in x. Let $y_p = Au + Bv$ Put $y = y_p$ in eqn (1), we get $A = \int \frac{-vR}{uv' - u'v}$ & $B = \int \frac{uR}{uv' - u'v}$ This implies that the General Solution of (1) is $y = y_c + y_p$.
Examples / Illustrations	$\rightarrow (D^2 - 6D + 13) y = 8e^{3x} \sin 2x$ $\Rightarrow y_p = \frac{1}{D^2 - 6D + 13} 8e^{3x} \sin 2x = 8e^{3x} \frac{1}{(D+3)^2 - 6(D+3) + 13} \sin 2x$ $= -2xe^{3x} \cos 2x$ //
Additional Inputs	—
Teaching Aids used	Black board Teaching
References cited	Text book " Ordinary & Partial Diff. equations" by Raisingh
Student Activity Planned after the teaching	Problem Solving & Seminars by Students
Activity Planned outside the Class room, if any	Assignments
Any other Activity	Quiz & Problem Solving

To find particular integral when $Q = e^{ax} V$:

$$P.I. = \frac{1}{f(D)} e^{ax} V = e^{ax} \frac{1}{f(D+a)} V$$

Ex:

P.I. of $(D^2+1)y = e^x \cos 2x$

$$y_{PI} = \frac{1}{(D^2+1)} e^x \cos 2x$$

$$= e^x \frac{1}{(D+1)^2+1} \cos 2x$$

$$= e^x \frac{1}{D^2+2D+2} \cos 2x$$

$$= \frac{-e^x}{17} [\cos 2x - 4 \sin 2x]$$

To find P.I, when $Q = xV$:

$$\frac{1}{f(D)} xV = x \frac{1}{f(D)} V - \frac{f'(D)}{(f(D))^2} V$$

Ex: $(D^2+4)y = x \sin x$

$$P.I. = \frac{1}{D^2+4} x \sin x$$

$$= x \frac{1}{D^2+4} \sin x - \frac{2D}{(D^2+4)^2} \sin x$$

$$= \frac{1}{9} (3x \sin x - 2 \cos x)$$

Find P.I, when $Q = x^m \sin nx$ (or) $x^m \cos nx$:

$$P.I. = \frac{1}{f(D)} x^m \sin nx$$

$$= \frac{1}{f(D)} x^m [\text{I.P. of } e^{inx}] \quad [\because e^{iax} = \cos ax + i \sin ax]$$

$$= \text{I.P. of} \left[\frac{1}{f(D)} x^m e^{inx}\right]$$

$$= \text{I.P. of} \left[e^{inx} \frac{1}{f(D+in)} x^m\right]$$

Cauchy-Euler Equation: An equation of the form $x^n y_n + P_1 x^{n-1} y_{n-1} + \ldots + P_n$ where $P_1, P_2, \ldots, P_n$ are real constants & Q is a function of x.

$$\Rightarrow (x^n D^n + P_1 x^{n-1} D^{n-1} + \ldots + P_n) y = Q(x)$$

Put $xD = \theta$, $x^2 D^2 = \theta(\theta-1), \ldots$, where $\theta = \frac{d}{dz}$, taking $x = e^z \Rightarrow z = \log x$.

Then eqn (1) converted to linear homo diff equation & then solve it.

Finally substitute $z = \log x$ to get the solution of required diff. eq.

TEACHING PLAN (SYNOPSIS)

March

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I DSCs
Paper :	I: Mathematics for Data Science
Name of the Topic	Differentiation
Hours required	18 Hours
Learning Objectives	To choose the given function is diff^ble or not, Mean value theorems & properties & Prob. Solving
Previous Knowledge to be reminded	Concepts of Limits & Continuity
Topic Synopsis	Let S be an aggregate. If $f: S \to R$ be a function. Let Each $\epsilon > 0$, $\exists\ \delta > 0 \ni \left| \frac{f(x)-f(c)}{x-c} - s \right| < \epsilon$, for $c \in S$, $0<|x-c|<\delta$ then f is said to be differentiable at $x=c$ & it is denoted by $f'(c)$. → Every constant function is derivable & every identity function is also derivable. → Every derivable function is Continuous.
Examples / Illustrations	→. $f(x) = \sin x$ is differentiable at every point $a \in R$ →. $f(x) = x \sin x, x \neq 0$ & $f(x)=0, x=0$ is Continuous but not derivable
Additional Inputs	Maclaurins Series expansions, $f(x) = \sum_{n=0}^{\infty} \frac{f^n(c)}{n!} x^n$
Teaching Aids used	Black Board Teaching
References cited	Text book, B.S., S. chand publications
Student Activity Planned after the teaching	Assignment, Group discussion
Activity Planned outside the Class room, if any	Problem Solving
Any other Activity	Quiz competitions & problems for practice

Derivability of a function at a point: Let S be an open set and $f: S \to \mathbb{R}$ be a function. Let $c \in S$ be a limit point of S.

(i) If $\lim_{x \to c} \frac{f(x)-f(c)}{x-c}$, when $x < c$ exists, then we say that f is differentiable from left at c. This limit is called the left derivative of f at c & it is denoted by $Lf'(c)$ or $f'(c-0)$.

(ii) If $\lim_{x \to c+} \frac{f(x)-f(c)}{x-c} = Lf'(c)$ or $f'(c-0)$ when $x \neq c$ exists.

(iii) $\lim_{x \to c} \frac{f(x)-f(c)}{x-c} = f'(c)$, when $x \neq c$ exists.

Derivability on $[a,b]$:

(i) $f'(c)$ exists for each $c \in (a,b)$

(ii) $Rf'(a)$ exists &

(iii) $Lf'(b)$ exists.

Increasing & Decreasing function: Let $f: I \to \mathbb{R}$ be a function and $c \in I$.

(i) f is said to be locally increasing at c, if there exists $\delta > 0$ such that $f(x) = f(c)$, for $x \in (c-\delta, c) \subset I$ and $f(x) > f(c)$ for $x \in (c, c+\delta) \subset I$.

(ii) f is said to be locally decreasing at c, if $-f$ is locally increasing.

properties:

* If $f: I \to \mathbb{R}$ is derivable at c, where $c \in I$ and $f'(c) > 0$ then f is locally increasing at c.

* If, if $f'(c) < 0$, then f is locally decreasing at c.

Rolle's theorem: If a function $f: [a,b] \to \mathbb{R}$ is such that (i) f is continuous on $[a,b]$, (ii) f is derivable on (a,b) & (iii) $f(a) = f(b)$, then $\exists\, c \in (a,b)$ such that $f'(c) = 0$.

Sig. of the Lecturer

Sig. of the In-charge

TEACHING PLAN (SYNOPSIS)

March

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SABANA
Course / Group :	II MPC & MSCs
Paper :	V : Linear Algebra
Name of the Topic	Vector Spaces
Hours required	22 Hours
Learning Objectives	Vector Spaces, SubSpaces, linearly independent & dependent
Previous Knowledge to be reminded	Group theory & Ring theory Concepts.
Topic Synopsis	Vector Space : $V \neq \phi$ Subset of a field F is said to be a vector space, if it has the following properties (1) $\alpha+\beta \in V, \forall \alpha, \beta \in V$ (2) $\alpha+(\beta+\gamma)=(\alpha+\beta)+\gamma, \forall \alpha, \beta, \gamma \in V$ (3) $\alpha+\bar{0}=\bar{0}+\alpha=\alpha, \forall \alpha \in V$ & $\bar{0} \in V$ (4) $\alpha+(-\alpha)=(-\alpha)+\alpha=\bar{0}, \forall \alpha \in V$ & $-\alpha \in V$ (5) $\alpha+\beta=\beta+\alpha, \forall \alpha, \beta \in V$ (6) $a \in F, \alpha \in V, \Rightarrow a\alpha \in V$ (7) $a(\alpha+\beta)=a\alpha+a\beta$ (8) $(a+b)\alpha=a\alpha+b\alpha$ (9) $(ab)\alpha=a(b\alpha), a,b \in F$. (10) $1.\alpha=\alpha, \forall \alpha \in V, 1 \in F$
Examples / Illustrations	$V=R^2$ is a V.S defined on R w.r.to addition & Scalar multiplication as $\alpha+\beta=\alpha+\beta, \forall \alpha, \beta \in$ $(x,y) \in V$.
Additional Inputs	(i) $(x_1,y_1)+(x_2,y_2)=(x_1+x_2, y_1, y_2)$ & (ii) $a(x_1,y_1)=(ax_1, ay_1), \forall a \in F$ & → Problems for Solving
Teaching Aids used	Black Board Teaching & Virtual classroom
References cited	Bla. III yrs, by S. Chand publication
Student Activity Planned after the teaching	Assignment, Seminars
Activity Planned outside the Class room, if any	Assignments
Any other Activity	problems for practice

Subspace: A subset W of a vector space V is called subspace of V if W is itself a vector space under the same vector addition & scalar multiplication defined on V.

Necessary & Sufficient Condition: A non-empty subset W of vector space V is a subspace iff (i) $\alpha - \beta \in W, \forall \alpha, \beta \in W$ & (ii) $a\alpha \in W, \forall a \in F, \forall \alpha \in W$.

Ex: $W = \{(0, b, c) \mid b, c \in \mathbb{R}\}$ is a subspace of $\mathbb{R}^3$.

clearly $W \neq \phi$ & $W \subseteq \mathbb{R}^3$.

(i) Let $u(0, b_1, c_1)$ & $v = (0, b_2, c_2) \in W \Rightarrow u - v = (0, b_1 - b_2, c_1 - c_2) \in W$

(ii) Let $u(0, b_1, c_1) \in W$ & $x \in \mathbb{R} \Rightarrow xu = (0, xb_1, xc_1) \in W$

2. $W = \{(x, y, z) \mid x, y, z$ are rational numbers$\}$. Is W is a subspace of $\mathbb{R}^3$.

Let $\alpha = (2, 3, 4) \in W$ & $x = \sqrt{2} \in \mathbb{R}$, then $x\alpha = (2\sqrt{2}, 3\sqrt{2}, 4\sqrt{2}) \notin W$.

Properties:

* The intersection of two subspaces is a subspace
* The union of two subspaces is a subspace iff one is contained in the other

Linear Combination of Vectors: If $\alpha_1, \alpha_2, \ldots, \alpha_n$ are n vectors in a vector space $V(F)$ and $a_1, a_2, \ldots, a_n$ are n scalars in F, then any vector $a_1\alpha_1 + a_2\alpha_2 + \ldots + a_n\alpha_n$ is called a linear combination of the vectors $\alpha_1, \alpha_2, \ldots, \alpha_n$

Ex: $V = (-2, 3)$ in $\mathbb{R}^2(\mathbb{R})$ can be written as a linear combination of the vectors $v_1 = (1, 1)$ & $v_2 = (1, 2)$ as $V = -7v_1 + 5v_2$.

Linear Span of a Set: The linear span of a set S of a vector space $V(F)$ is the set of all possible linear combinations of all possible finite subsets of S. i.e., $L(S) = \{\alpha \mid \alpha = a_1\alpha_1, a_1 \in F \& \alpha_1 \in S\}$

Sig. of the lecturer Sig. of the Lab In-charge Sig. of the Principal

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Mathematics
Name of the Lecturer	Dr. SHAIK SAJIDA
Course / Group	II MPC & MSG
Paper	V: Linear Algebra
Name of the Topic	Basis & dimension & Linear transformations
Hours required	24 Hours
Learning Objectives	Basis of a vector space, Rank-nullity theorem, etc
Previous Knowledge to be reminded	Vector Spaces & Sub Spaces
Topic Synopsis	Basis of a Vector Space: A Subset S of a vector space V(F) is said to be a basis of V(F), if (i) S is linearly independent set (ii) the linear Span of S is V, i.e, L(S)=V. Finite dimensional Vector Space: A vector space which has a finite basis. Coordinates: Let $S=\{\alpha_1, \alpha_2, \ldots, \alpha_n\}$ be the basis set of a finite dimensional vector space V(F). For $\beta \in V$, $\beta = a_1\alpha_1 + a_2\alpha_2 + \ldots + a_n\alpha_n$ then the Scalars $(a_1, a_2, \ldots, a_n)$ are called Coordinates of β
Examples / Illustrations	→ $\{(1,0,0), (0,1,0), (0,0,1)\}$ is a basis of $R^3(R)$ → The Coordinates of $(3+4i, 6i, 3+7i)$ w.r.t the basis $\{(1,0,0), (i,0,0), (0,0,1)\}$ is $(3+4i, 6i, 3+7i)$
Additional Inputs	—
Teaching Aids used	Black Board Teaching & ICT through Virtual
References cited	Text book for B.Sc. Vol. III by S. Chand Publications
Student Activity Planned after the teaching	Student Seminars Conducting & problem Solving
Activity Planned outside the Class room, if any	Assignment & project
Any other Activity	Problem Solving

Basis extension theorem: let $S = \{\alpha_1, \alpha_2, \ldots, \alpha_m\}$ is [illegible]
subset of a finite dimensional vectorspace $V(F)$, then either S itself
is a basis of V or S can be extended to form a basis of V

Basis existence theorem: If $V(F)$ is a finite dimensional vector space, then
there exists a basis set of V

Dimension of a vector space: let B be a basis of a vector space $V(F)$. Then
the no. of elements in B is called ~~base~~ dimension of a vector space
$V(F)$

* Let W be a subspace of a vector space $V(F)$, then $\dim W \leq \dim V$
* Let W_1 & W_2 be two subspaces of a vector space $V(F)$, then

$$\dim(W_1 + W_2) = \dim W_1 + \dim W_2 - \dim(W_1 \cap W_2).$$

Quotient space: let W be a subspace of a vector space $V(F)$, then
$V/W = \{W + \alpha \mid \alpha \in V\}$ is a ~~Subspace~~ vector space w.r.to coset addition & scalar
as $(W+\alpha)+(W+\beta) = W+(\alpha+\beta)$ & $a(W+\alpha) = W+a\alpha$, $\forall a \in F$ &
$W+\alpha, W+\beta \in V/W$.

$\rightarrow \dim V/W = \dim V - \dim W$.

Linear transformation: let $U(F)$ & $V(F)$ be two vector spaces. Then the
function $T: U \to V$ is called a linear transformation from U to V,
if $T(a\alpha + b\beta) = aT(\alpha) + bT(\beta)$, $\forall a, b \in F$ & $\alpha, \beta \in U$.

Ex:- $T: V_3(R) \to V_2(R)$ is defined by $T(x,y,z) = (x-y, x-z)$ is a Linear transformation

Rank - nullity theorem: let $T: U \to V$ be a linear transformation, then
$\dim U = \dim R(T) + \dim N(T)$ or $\dim U = \rho(T) + \nu(T)$.

Sig. of the lecturer

Sig. of the le...

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	II MPC & II MSG
Paper :	V : Linear Algebra
Name of the Topic	Matrices, System of linear equations
Hours required	18
Learning Objectives	Elementary properties of Matrices, Rank of a matrix, Inverse of a matrix
Previous Knowledge to be reminded	Matrices in lower classes
Topic Synopsis	→ Matrices : different types of matrices, → Elementary properties of Matrices → Inverse of a matrix & Rank of a matrix → Echelon form & Normal form of a matrix → System of homogeneous & non homogeneous linear equations
Examples / Illustrations	① $A=\begin{bmatrix}2&1&2\\1&0&1\\0&2&1\end{bmatrix}$, then $\lvert A\rvert = 1 \neq 0$ invertible and also $A^{-1}=\begin{bmatrix}2&3&1\\1&-2&0\\1&-2&-1\end{bmatrix}$
Additional Inputs	→ Cramer's Rule & PAQ form.
Teaching Aids used	Black Board Teaching
References cited	Matrices by Vasista & Vasista
Student Activity Planned after the teaching	Exercises, Problems Solving for practice
Activity Planned outside the Class room, if any	Assignment
Any other Activity	To write applications of matrices as Project work.

Rank of a matrix: If A is not a null matrix, then the rank of the matrix A is the positive integer 'r' if it satisfies the following two properties

(i). Each minor of order $r+1$ of the matrix A vanishes (Zero)

(ii). There exists at least one minor of order r of the matrix A which is non zero.

Normal form of a matrix: Every non-zero matrix can be reduced to the form $\begin{bmatrix} I_r & 0 \\ 0 & 0 \end{bmatrix}$ by a finite no. of elementary transformations, where I_r is the unit matrix of order r and this form is called normal form of a given matrix, where r is called rank of the matrix.

Echelon form of a matrix: A matrix is in echelon form, if it is in the following form

(i). Zero rows, if any, must follow non-zero rows.

(ii). The no. of zeros before the first non-zero element in a row is less than the no. of such zeros in the next row.

In this form, the Rank of a matrix is equal to the no. of non zero rows in that form of a matrix.

System of nonhomogeneous linear equations:

(i) If $P(A:B) = P(A) = r = n$, no. of variables, then the given system have unique solution.

(ii) If $P(A:B) = P(A) = r < n$, no. of variables, then the given system have infinite no. of solutions.

(iii) If $P(A:B) \neq P(A)$, then the given system is inconsistent and have no solution.

Sign. of the Lecturer Sig. of Lec-In-charge Sig. of Principal

TEACHING PLAN (SYNOPSIS)

May

Name of the Department / Subject	Mathematics
Name of the Lecturer	Dr SHAIK SAJANA
Course / Group	I MSc (Ext & I MSCA
Paper	II : Solid Geometry
Name of the Topic	Introduction & Coordinates of Solid Geometry
Hours required	12
Learning Objectives	Basic Concepts in Geometry & Introduction part
Previous Knowledge to be reminded	2-Dimensional Geometry
Topic Synopsis	→ Line passes through 2 distinct point → Plane passes through 3 non-Collinear points → In Space, there exists atleast 4 points which are non coplanar → Two intersection planes determines a unique line → Any two lines in a plane are intersecting or Parallel.
Examples / Illustrations	→ Equation of a line passes through the points (x_1, y_1, z_1) & (x_2, y_2, z_2) is $\frac{x-x_1}{x_2-x_1} = \frac{y-y_1}{y_2-y_1} = \frac{z-z_1}{z_2-z_1}$.
Additional Inputs	→ Coordinate axes & Coordinate planes
Teaching Aids used	Black Board Teaching
References cited	Text of B.Sc. Mathematics by S.chand & publications
Student Activity Planned after the teaching	Solving Exercise problems
Activity Planned outside the Class room, if any	Practising problems
Any other Activity	Analysis & Comparision of 2-Dimensional & 3-Dimensional Geometry

Coordinates

→ The coordinate axes are xx', yy' & zz'

→ The coordinate planes are xy-plane, yz-plane & zx-plane

Ex: The foot of the perpendicular from $(-1, 6, -2)$ to
xy-plane is $(-1, 6, 0)$,
yz-plane is $(0, 6, -2)$ &
zx-plane is $(-1, 0, -2)$.

→ Length or Magnitude of a vector: Any point $\bar{P} = (x, y, z)$ & $\bar{OP} = \bar{r}$, the length or magnitude or norm or modulus of the vector

$$\bar{OP} = |\bar{OP}| = \sqrt{x^2 + y^2 + z^2}.$$

→ Distance b/w two vectors (x_1, y_1, z_1) and (x_2, y_2, z_2) is

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}.$$

→ If $\bar{A} = (x_1, y_1, z_1)$, $\bar{B} = (x_2, y_2, z_2)$ and P is a point dividing the line segment $\overline{AB}$ in the ratio $\lambda_1 : \lambda_2$ $(\lambda_1 + \lambda_2 \neq 0)$, then

$$P = \left(\frac{\lambda_2 x_1 + \lambda_1 x_2}{\lambda_1 + \lambda_2}, \frac{\lambda_2 y_1 + \lambda_1 y_2}{\lambda_1 + \lambda_2}, \frac{\lambda_2 z_1 + \lambda_1 z_2}{\lambda_1 + \lambda_2} \right).$$

→ Direction ratios: Any point on the line, other than zero is called a direction ratios (D.Rs). All D.Rs are proportional

→ Direction cosines: Let α, β, γ be the angle b/w the line L with the coordinate axes, then $(\cos\alpha, \cos\beta, \cos\gamma)$ are called D.Cs. Direction cosines are proportional to Direction ratios of

No. Pages
Sig. of the Lecturer

Sig. of Fac-In-Charge

TEACHING PLAN (SYNOPSIS)

Time

Name of the Department / Subject	Mathematics
Name of the Lecturer	Dr. SHAIK SAJANA
Course / Group	I MPC Em & MPCA
Paper	II : Solid Geometry
Name of the Topic	The plane and the Line
Hours required	30 Hours
Learning Objectives	Equation of a plane, Bisectors of angles b/w two planes, equation of two planes, Straight lines
Previous Knowledge to be reminded	Basic Concepts in Introduction & Coordinates
Topic Synopsis	**Plane**: A plane is a surface such that if any two points are taken on it, the line joining them lies wholly on the surface. eqn is $ax+by+cz+d=0$, where $a^2+b^2+c^2 \neq 0$. **Planes bisecting the angles b/w two planes**: $\pi_1 : a_1x+b_1y+c_1z+d_1=0$, $\pi_2 : a_2x+b_2y+c_2z+d_2=0$ and $d_1d_2>0$. Eqn to the plane bisecting the angle ~~containing~~ b/w these two planes is $\frac{a_1x+b_1y+c_1z+d_1}{\sqrt{a_1^2+b_1^2+c_1^2}} = \pm \frac{a_2x+b_2y+c_2z+d_2}{\sqrt{a_2^2+b_2^2+c_2^2}}$.
Examples / Illustrations	$lx+my+nz=p$ is the normal form of a plane, where l, m, n are dc's & p is the length of the ⊥
Additional Inputs	Nil
Teaching Aids used	Black Board & Blended mode teaching
References cited	B.D. Text book by S. chand Publications
Student Activity Planned after the teaching	Problem Solving
Activity Planned outside the Class room, if any	Assignment
Any other Activity	Problems for practice

Plane: Equation of a plane is $ax+by+cz+d=0$, where a,b,c are dr
normal to the plane.

→ Equation of a plane in normal form is $lx+my+nz=p$, where
l,m,n are dcs normal to the plane & p is $\perp^{r}$ distance from
origin to the plane

→ Intercept form of a plane eqn is $\frac{x}{a}+\frac{y}{b}+\frac{z}{c}=1$, where
a,b,c are x,y,z axes intercepts, respectively.

Joint equ. of a pair of planes:

$ax^2+by^2+cz^2+2fyz+2gzx+2hxy+2ux+2vy+2wz+d=0$ represents
a pair of planes & $ax^2+by^2+cz^2+2fyz+2gzx+2hxy=0$ represents
a pair of planes through the origin & parallel to the plane π_1, π_2.

Right Line: Intersection of any two planes gives a line.

In symmetric form: $a_1x+b_1y+c_1z+d_1=0$, $a_2x+b_2y+c_2z+d_2=0$

Symmetric form of line: $\frac{x-x_1}{l}=\frac{y-y_1}{m}=\frac{z-z_1}{n}$ where l,m,n are dcs &
(x_1,y_1,z_1) is any point on the line.

Angle b/w line & plane:- Let θ be the angle b/w the line $\frac{x-x_1}{l}=\frac{y-y_1}{m}=\frac{z-z_1}{n}$
and the plane $ax+by+cz+d=0$, then

$$\sin\theta = \pm \frac{al+bm+cn}{\sqrt{a^2+b^2+c^2}\cdot\sqrt{l^2+m^2+n^2}}$$

$\Rightarrow$ (i). $L \parallel \pi \Leftrightarrow al+bm+cn=0$, (ii) $L \perp \pi \Leftrightarrow \frac{a}{l}=\frac{b}{m}=\frac{c}{n}$

Skew lines: Any two non-parallel & non-intersecting lines are called Skew lines
The perpendicular distance b/w them is called shortest distance b/w them

Prabhjeet
Sig. of Lecturer

Sig. of Lec. In charge

TEACHING PLAN (SYNOPSIS)

June

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	II MPC EM & MSCs
Paper :	V : Linear Algebra
Name of the Topic	Characteristic Roots & Vectors, Cayley Hamilton Theorem, Inner product Spaces
Hours required	18
Learning Objectives	Char. Values & Vectors of a Matrix, Orthogonality
Previous Knowledge to be reminded	Vector Spaces & Subspaces, Matrices
Topic Synopsis	Characteristic vector & Values: Any non-zero vector X is said to be a characteristic vector of a square matrix A, if there exist a scalar λ such that $AX = \lambda X$ & λ is called characteristic value. * If X is a characteristic vector of a matrix A, X cannot corresponds to more than one characteristic value of A. * If x is called ch. vector of a matrix A corresponding to the ch. value λ, then kX is also a ch. vector of A corresponding to the same char. value λ, here k is non-zero scalar
Examples / Illustrations	→ $\begin{bmatrix} 1 & 4 \\ 3 & 2 \end{bmatrix}$, characteristic values & vectors are $-2: k\begin{bmatrix} -4/3 \\ 1 \end{bmatrix}$, $5: k\begin{bmatrix} 1 \\ 1 \end{bmatrix}$
Additional Inputs	characteristic polynomial in linear form
Teaching Aids used	Black Board Teaching
References cited	Text Book of "matrices" by Vasista & Vasista
Student Activity Planned after the teaching	Problem Solving
Activity Planned outside the Class room, if any	Assignment
Any other Activity	Project work : By writing applications matrices & related topics

Cayley Hamilton theorem: Every square matrix satisfies its ch. equn.

Inner product space: Let $V(F)$ be a vector space where F is the field of real numbers or the field of complex numbers. The vector space $V(F)$ is said to be an inner product space if there is defined for any two vectors $\alpha, \beta \in V$ an element $(\alpha,\beta) \in F$ such that

(i) $(\alpha,\beta) = \overline{(\beta,\alpha)}$ (Conjugate symmetric)

(ii) $(\alpha,\alpha) \geq 0$ (Positivity), $\alpha \in V$

(iii) $(a\alpha+b\beta, \gamma) = a(\alpha,\gamma)+b(\beta,\gamma)$, $\alpha,\beta,\gamma \in V$, $a,b \in F$ (Distributivity)

→ If $F=R$, then $V(F)$ is called Euclidean space or real inner product space

→ If $F=C$, then $V(F)$ is called unitary space or complex inner product space

Ex:- If $\alpha = (a_1, a_2, \ldots, a_n)$ & $\beta = (b_1, b_2, \ldots, b_n)$ are the elements of the vector space $V_n(C)$, where C is the field of complex numbers, then

$(\alpha,\beta) = a_1\bar{b}_1 + a_2\bar{b}_2 + \cdots + a_n\bar{b}_n = \sum_{i=1}^{n} a_i\bar{b}_i$ defines an inner product on $V_n(C)$ (Standard Inner product).

Ex. For $\alpha = (a,b)$, $\beta = (c,d) \in R^2$, the vector space, if $(\alpha,\beta) = ac - bd$, then it is not an inner product. For instance, $\alpha = (3,4) \in R^2$, $\alpha \neq 0$

$(\alpha,\alpha) = 09 - 16 = -7 \not> 0 \ (\not\geq 0)$.

Cauchy–Schwarz's inequality: In an inner product space $V(F)$,

$$|(\alpha,\beta)| \leq \|\alpha\| \cdot \|\beta\|, \quad \forall\, \alpha,\beta \in V.$$

Orthogonal and orthonormal vectors: Let $V(F)$ be an inner product space and $\alpha, \beta \in V$, α is said to be orthogonal to β, if $(\alpha,\beta) = 0$

Let $S = \{\alpha_1, \alpha_2, \ldots, \alpha_n\}$ is a nonempty subset of an I.P.S. $V(F)$.

(i) $(\alpha_i, \alpha_j) = 0$, $\forall\, i \neq j$, then S is called orthogonal &

(ii) $(\alpha_i, \alpha_j) = 0$, $\forall\, i \neq j$ & $\|\alpha_i\| = 1$, $\forall\, i$, S is called orthonormal

Eg. Legendre

Eg. of two-dimensional

TEACHING PLAN (SYNOPSIS)

July

Name of the Department / Subject :	Mathematics
Name of the Lecturer :	Dr. SHAIK SAJANA
Course / Group :	I MPC EM & MPCA
Paper :	II : Solid Geometry
Name of the Topic	Right Line & Sphere
Hours required	24 Hours
Learning Objectives	Planes passing through lines & Skew lines ; sphere eq. plane of
Previous Knowledge to be reminded	Lines & planes.
Topic Synopsis	Coplanarity of two lines :- * $L_1 : \frac{x-x_1}{l_1} = \frac{y-y_1}{m_1} = \frac{z-z_1}{n_1}$ & $L_2 : \frac{x-x_2}{l_2} = \frac{y-y_2}{m_2} = \frac{z-z_2}{n_2}$ $\Rightarrow \begin{vmatrix} x_1-x_2 & y_1-y_2 & z_1-z_2 \\ l_1 & m_1 & n_1 \\ l_2 & m_2 & n_2 \end{vmatrix} = 0$. * $L_1 : \frac{x-x_1}{l} = \frac{y-y_1}{m_1} = \frac{z-z_1}{n_1}$ & $L_2 : a_1x+b_1y+c_1z+d_1 = a_2x+b_2y+c_2z+d_2$ $\Rightarrow \frac{a_1x_1+b_1y_1+c_1z_1+d_1}{a_1l+b_1m+c_1n} = \frac{a_2x_1+b_2y_1+c_2z_1+d_2}{a_2l+b_2m+c_2n}$
Examples / Illustrations	→ $\frac{x-1}{2} = \frac{y-2}{3} = \frac{z-3}{4}$ & $\frac{x-2}{3} = \frac{y-3}{4} = \frac{z-4}{5}$ are coplanar.
Additional Inputs	→ If (x_1,y_1,z_1), (x_2,y_2,z_2) (x_3,y_3,z_3) then area of $\Delta = \frac{1}{2}\sqrt{\sum[(y_2-y_1)(z_3-z_1) - (y_3-y_1)(z_2-z_1)]^2}$ → Area of tetrahedron.
Teaching Aids used	Black Board Teaching
References cited	B.Sc. Text book by S. chand Publications
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	project work.
Any other Activity	problem Solving.

Shortest distance btw two Skew lines

Skew Lines: Any two non parallel & non intersecting lines are called Skew lines.

→ S.D. btw the Skew lines lines $\frac{x-x_1}{l_1} = \frac{y-y_1}{m_1} = \frac{z-z_1}{n_1}$ and $\frac{x-x_2}{l_2} = \frac{y-y_2}{m_2} = \frac{z-z_2}{n_2}$

is $\left| \begin{matrix} x_2-x_1 & y_2-y_1 & z_2-z_1 \\ l_1 & m_1 & n_1 \\ l_2 & m_2 & n_2 \end{matrix} \right| \div \sqrt{\Sigma (m_1 n_2 - m_2 n_1)^2}$.

Sphere: The set of points in space which are at a constant distance ($a \geq 0$) from a fixed point C is called a Sphere.

Equn of a Sphere with Centre (x_1, y_1, z_1) is

$(x-x_1)^2 + (y-y_1)^2 + (z-z_1)^2 = a^2$, where a is the radius.

→ $ax^2 + by^2 + cz^2 + 2fyz + 2gzx + 2hxy + 2ux + 2vy + 2wz + d = 0$ represents a Sphere, if $a = b = c \neq 0$, $f = g = h = 0$ and $u^2 + v^2 + w^2 > ad$.

Plane Section of a Sphere: If S is a Sphere and π is a plane the non-empty set of points common to the Sphere S and the plane π is called a plane section of the Sphere. Then we say that the plane π intersects the Sphere S.

Intersection of two Spheres: Let S_1 & S_2 be two Spheres. If $S_1 \cap S_2 \neq \phi$ we say that the Spheres S_1 and S_2 are intersect or cut and S_1 and S_2 are called intersecting Spheres. If $S_1 \cap S_2 = \phi$, then they are non intersecting

For Sig — Visit

Sig. of the Lecturer — Sig. of the Lec. In-charge

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Mathematics
Name of the Lecturer	SHAIK SAJIDA
Course / Group	MSC & MDCA
Paper	II : Solid Geometry
Name of the Topic	The Cone
Hours required	18 Hours
Learning Objectives	Def. of a Sphere Cone, problems on cone with vertex at the origin, Cone with three perpendicular generators, enveloping cone
Previous Knowledge to be reminded	Def of Plane, Concepts in plane, line, Sphere
Topic Synopsis	**Cone**: The surface generated by a straight line that which passes through a fixed point and intersecting a given curve or touching a given surface, is called a Cone. The equation of a cone with vertex at the origin is $ax^2+by^2+cz^2+2fyz+2gzx+2hxy=0$. **Enveloping Cone**: Let S be a Surface & P be a point not on the surface. The set of tangent lines to the surface S and passing through P form a cone with vertex at P, called enveloping cone. (Tangent)
Examples / Illustrations	$fyz+gzx+hxy=0$, represents a cone passes through coordinate axes.
Additional Inputs	Nil
Teaching Aids used	Black Board Teaching
References cited	B.D. Text book by Schand publications
Student Activity Planned after the teaching	Problem Solving & Group Discussion
Activity Planned outside the Class room, if any	Assignment & Problem Solving
Any other Activity	Student Seminars

Cone: Let S be a set of points in space. If there exists a point V in S such that $P \in S \Rightarrow \overleftrightarrow{VP} \in S$, then S is called the cone and V is said to be the vertex of the cone. $\overleftrightarrow{VP}$ is called a generator of a cone.

$\rightarrow \frac{x}{l} = \frac{y}{m} = \frac{z}{n}$ is a generator of the cone $\Leftrightarrow f(l,m,n) = 0$

Let θ be the angle btw the cone $F(x,y,z) = ax^2+by^2+cz^2+2fyz+2gzx+2hxy$ and the plane $px+qy+rz=0$, then

$$\tan\theta = \frac{2D\sqrt{p^2+q^2+r^2}}{(a+b+c)\sqrt{(p^2+q^2+r^2)-F(p,q,r)}}, \text{ where } D = \begin{vmatrix} a & h & g & p \\ h & b & f & q \\ g & f & c & r \\ p & q & r & 0 \end{vmatrix}$$

Cone with a Base Curve:

Let S be the set of lines concurrent at V and C be a curve not containing V.

If $P \in C \Rightarrow \overleftrightarrow{VP} \subset S$ then S is called the cone with vertex at V. C is called the base curve or guiding curve. $\overleftrightarrow{VP}$ is called a generator of the curve.

Enveloping Cone: Let S be a surface and P be a point not on the surface. The set of tangent lines to the surface S and passing through P form a cone with vertex at P. This is called the enveloping cone or the tangent cone of the given surface.

Sig. of the Lecturer Sig. of the Lec-In-Charge Sig. of the Principal

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021 - 2022

Name of the Lecturer N. L. JANAKI

Department of CHEMISTRY

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L.JANAKI
Course / Group :	B.Sc (CBZ-CBM-CBC)
Paper :	I
Name of the Topic	Solid state
Hours required	10hrs
Learning Objectives	Crystal structure determination
Previous Knowledge to be reminded	States of Matter
Topic Synopsis	→ Solids → Crystalline, Amorphous → Structures & properties of Crystalline Solids are determined by laws of Crystallography → Law of rationality of indices Law of constancy of interfacial angles Law of Symmetry
Examples / Illustrations	NaCl, KCl structure determination
Additional Inputs	-
Teaching Aids used	
References cited	Advanced physical chemistry by Gurudeep raj
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

→ Miller indices :- Intercepts on the axes of a crystall p
are called weiss indices and those reciproc
are Miller indices.

eg:- 2a, -3b, -3c are intercepts 2, -3, -3 are we
indices ϵ (ie $\frac{1}{2}, -\frac{1}{3}, -\frac{1}{3}$) $\bar{2}\ \bar{3}\ \bar{3}$ are Miller indices.

Distance b/n llel plane $d_{(h,k,l)} = \frac{a}{\sqrt{h^2+k^2+l^2}}$

→ Elements of symmetry :- for a cubic crystal

(1) rectangular plane of symmetry - 3
diagonal plane of symmetry - 6
} 9 plane of symmetry

(2) Four fold axis of symmetry - 3
three fold axes of symmetry - 4
Two fold axis of symmetry - 6
} 13 plane of symmetry

(3) centre of symmetry - 1

Total 23 element of symmetry
for cubic crystal

lattice : a set of infinite points in space

Unit cell :- Smallest repeating pattern of crystal lattice
primitive unit cell - simple
Non primitive - FCC & BCC & ETC

Seven crystal systems with primitive & non primitive
combined to give total 14 crystal system called
Bravis lattices.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N L JANAKI
Course / Group	B.Sc (B.2 < 4 MEC)
Paper	I
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	→ Bragg's equation : $n\lambda = 2d \sin\theta$ θ = glacial angle d = Distance b/w two crystal planes λ = wavelength of x-rays. → Bragg's S X-ray spectrometer ~~diagram~~ shows intensities for various angle of reflection for
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

Lowest angle at maximum reflection occurs corresponds to n=1. this process is carried out for each face of crystal the main drawback is it require big crystal

→ Powder Method :- Here sample is taken in fine powder form for maximum reflection some of small crystals would orient their planes in required position. Reflected rays form a spot at 90° distance from the incident rays.

$\theta = \frac{S}{R} = \frac{\text{distance b/w arcs}}{\text{radius of photographic plate}}$

Crystal Defects :- If the crystal arrangement is not in perfect order, the crystal is said to have crystal defect. these defects may affect the properties of crystals.

(1) Stoichiometric defects (2) Non Stoichiometric defects

(1) (i) Schottky defects (ii) Frenkel defect

(i) It is a missing from its normal position density of crystal decreases

(ii) shifting of ion from their normal positions into interstitial site crystal lattice.

(2) Non stoichiometric Defects

(i) Metal excess Defects

a) Defect due to missing of anion

b) Defect due to interstitial cation

(ii) Metal deficiency Defects

Defect due to missing cation

Defect due to interstitial anion

TEACHING PLAN (SYNOPSIS)

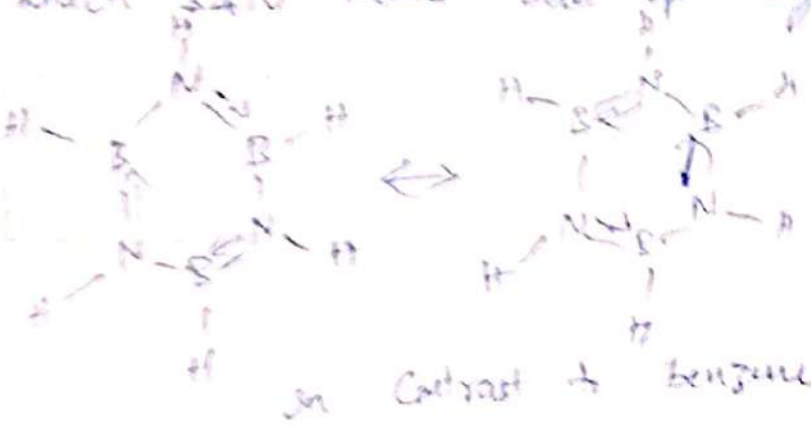
Name of the Department / Subject	CHEMISTRY
Name of the Lecturer :	N.L.JANAKI
Course / Group :	B.Sc (C B.Z & M.B.C)
Paper :	I
Name of the Topic	P. Block elements
Hours required	8hrs
Learning Objectives	Preparations of Inorganic compounds
Previous Knowledge to be reminded	Periodic table
Topic Synopsis	preparation of Diborane $6BF_3 + 6LiH \xrightarrow{\Delta} B_2H_6 + 6LiF$ structure : Each 'B' atom undergo sp^2 hybridisation in excited state and forms four sp^2 hybrid orbitals. Two hybrid orbitals containing unpaired electron of one B atom S orbital H-atom and empty sp^2 hybrid orbital of other B-atom overlaps gives
Examples / Illustrations	—
Additional Inputs	
Teaching Aids used	
References cited	Inorganic chemistry by J.D Lee
Student Activity Planned after the teaching	Quiz
Activity Planned outside the Class room, if any	
Any other Activity	

3c-2e bond of B-H-B bridge called "Banana Bond"

Preparation of Borazole

$$3B_2H_6 + 6NH_3 \longrightarrow 2[B_3H_6(NH_3)_3] \longrightarrow 2B_3N_3H_6$$

Structure - It has a planar hexagonal ring structure in which B & N atoms are sp^2 hybridized & joined alternately

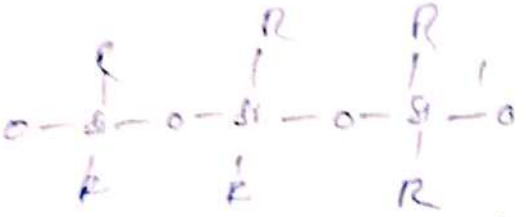


In Contrast to benzene, borazine undergoes addi

Reactions.

Classification Silicons

(1) Linear Silicons.



$$SiCl_4 + 2CH_3MgCl \rightarrow (CH_3)_2SiCl_2 + 2MgCl_2$$

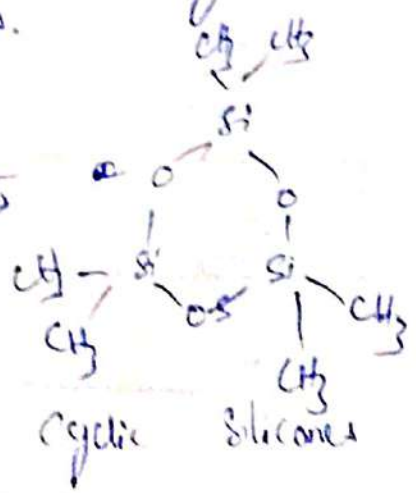
$$(CH_3)_2SiCl_2 \xrightarrow{+H_2O} (CH_3)_2Si(OH)_2$$

$$HO-Si(CH_3)_2-OH$$

This silicol undergo condensation by intermolecular elimination produce linear Silicons.

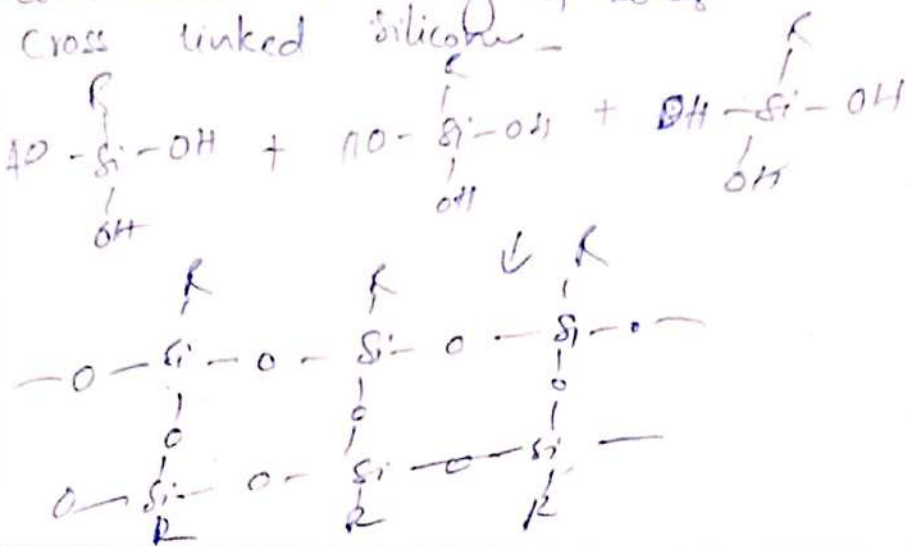
(2) Cyclic Silicones.

$$(CH_3)_2SiCl_2 + 2H_2O \xrightarrow{\text{Hydrolysis}}$$



Cyclic Silicones

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	→ ~~Structure & bonding of Boraz~~ Cross linked silicone 
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

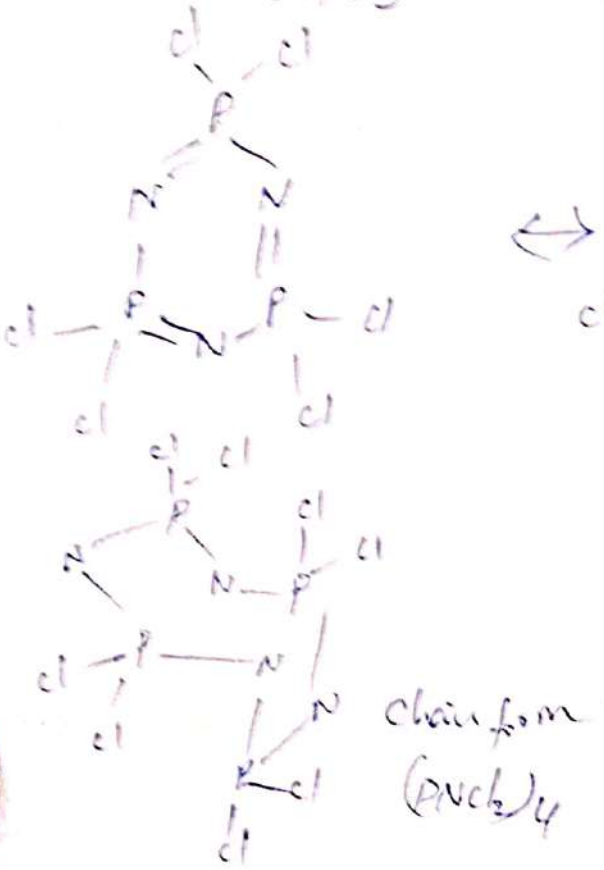
applications - they may be liquids, oils, greases, elastomers (rubbers) or resins.

- Resins used as rigid polymers.
- Fluids are non toxic and have a low surface tension
- They greatly reduces foaming in sewage disposal.

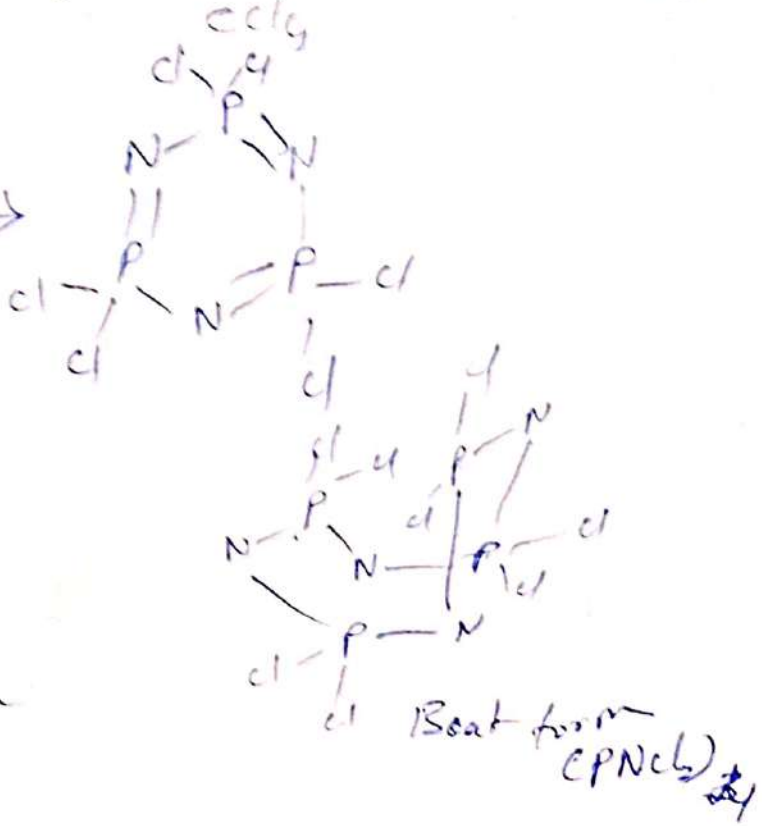
⇒ phosphonitrilic compounds.

$(PNCl_2)_3$ & $(PNCl_2)_4$

$n\,PCl_5 + n\,NH_4Cl \xrightarrow{120-130°C} (PNCl_2)_n + 4n\,HCl$



chain form $(PNCl_2)_4$



Boat form $(PNCl_2)_4$

⇒ Oxides classification based on oxygen content

(1) Normal oxides - H_2O, MgO

(2) peroxides - H_2O_2)

peroxides, superoxides, dioxides.

KO_2

H_2SO_4

H_2O_2

(3) Suboxides: N_2O

(4) Mixed oxides: $Pb_3O_4 \rightarrow 2PbO + PbO_2$: $Fe_3O_4 \rightarrow FeO + Fe_2O_3$

Oxyacids of Sulphur :-

1) Sulphurous acid series
   H_2SO_3, $H_2S_2O_5$, $H_2S_2O_4$

2) Sulphuric acid series
   H_2SO_4, $H_2S_2O_3$, $H_2S_2O_7$

3) thionic acid series
   $H_2S_2O_6$ $H_2S_nO_6$

4) Peroxoacid series
   H_2SO_5, $H_2S_2O_8$

Pseudohalogens & pseudohalide ion:
Any univalent chemical aggregate composed of 2 or more electronegative atoms which resemble halogens.
eg- Cyanogen $(CN)_2$, Selenocyanogen $(SeCN)_2$
Thiocyanogen $(SCN)_2$, Tellurocyanogen $(TeCN)_2$

Interhalogen Compound
Under suitable conditions, each halogen can combine with other halogen to form several compounds among themselves. These are known as interhalogens.

Types	AX	AX_3	AX_5	AX_7
	ClF	ClF_3	BrF_5	IF_7
	BrF	BrF_3		
	BrCl		IF_5	
	ICl	ICl_3		
	IBr			

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	oxides classification based on chemical behaviour (1) Acidic oxides - produce acids $CO_2 \rightarrow H_2CO_3$ (2) Basic Oxides $\rightarrow Na_2O + H_2O \rightarrow NaOH$ (3) Amphoteric oxides $\rightarrow ZnO + NaOH \rightarrow Na_2ZnO_2$ $ZnO + HCl \rightarrow ZnCl_2 + H_2O$ (4) Neutral oxides $\rightarrow H_2O, CO$
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N. L JANAKI
Course / Group :	B.Sc / B.Sc & M.B.C
Paper :	I
Name of the Topic	D - Block Elements
Hours required	6hr
Learning Objectives	Properties
Previous Knowledge to be reminded	P- block elements
Topic Synopsis	→ Differentiating e⁻ enters into d-orbital those elements are called D-Block elements - In 3d series Cr & Cu shows anomalous electronic configuration, in the same way 4d Series, Mo, Tc, shows along with Nb, Ru, Rh, Pt also Reason :- Epipty / half filled / full-filled orbitals are stable
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	Inorganic chemistry by J D Lee
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

→ Variable oxidation states :

Transition metals possess variable oxidation state due to their d-orbitals & energies of ns & (n-1)d orbitals.

- In I series, the oxidation number increases from Sc to Mn & then gradually decreases from Fe.
- In I series the maximum oxd"st is +7 shown by Mn in II & III series the maximum oxidation state is +8 shown by Ru & Os.
- Cr & Cu can show +1 oxidation state

→ Magnetic properties :-

Transition metals are paramagnetic in nature.

$\mu_{eff} = \sqrt{n(n+2)}$ for I series $\mu_{eff} = \mu_L + \mu_S$ for II & III se

Sc^{+3}, Ti^{+4}, V^{+5} etc are diamagnetic as they have no single el

→ Catalytic Activity :- d-block elements acts as catalyst bcz (a large surface area & many free active centres.

- Complexation :- They posses a large surface area many empty d-orbitals to accommodate electron pair donated by ligands.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L. JANAKI
Course / Group :	B.Sc (B.Z.C & M.B.C)
Paper :	I
Name of the Topic	F-BLOCK ELEMENTS.
Hours required	6hr
Learning Objectives	Properties. Seperations
Previous Knowledge to be reminded	D-Block elements.
Topic Synopsis	Chemistry of lanthanides:- $4f^{1-14}\ 5d^{0-1}\ 6s^2$ - general electronic configuration oxidationstate:- The typical oxidation state of lanthanide is +III. Lanthanide contraction:- decrease in atomic radii due to imperfect shield of electrons. This contraction in size from Ce to Lu is about 0.2 Å & known as lanthanide contraction.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

Consequences :- close resemblance between 4d & 5d transition se
Difficulty in separation of lanthanides.

Magnetic properties

Except La^{+3}, Ce^{+4} & Lu^{+3}, All other of states contain unpai
electrons & are therefore paramagnetic.

Chemistry of Actinides :- $[Rn]5f^{1-14}\,6d^{0-1},7s^{2}$

oxidation states of actinides are from +III to +IV Unlike
Lanthanides, +III is not stable oxidation state for all
actinides

Actinide contraction: The steady decrease in atomic & ionic
radii with increasing atomic number of actinide
elements

separation of Lanthanides & Actinides

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N. L JANAKI
Course / Group :	BSc / B.Sc & MBC)
Paper :	?
Name of the Topic	Theories of bonding in metals
Hours required	4hr
Learning Objectives	Theories
Previous Knowledge to be reminded	
Topic Synopsis	To explain the bond between metals the following theories are developed i) Free electron theory proposed by Lorentz According to him metal may be regarded as an assemble of +ve ions immersed in a sea of mobile electrons. the strong attractive forces holds the crystal together
Examples / Illustrations	—
Additional Inputs	
Teaching Aids used	Black board & chalk
References cited	
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	—

Limitation: Does not explain ~~conductance~~ & Specific list of metals

2. Valence bond theory - According to this theory bonding in metal is covalent. Valence bond is ~~resonates~~ resonates. Called Synchronized resonance. Because formula obtained in resonance is it is called unsynchronized

Limitation:- It fails to give quantitative explanation

3. Band theory:- Here entire metal is considered as one molecule. Mixing of atomic orbitals form molecular orbitals further produce a band of energy levels. It explains conductivity of metals subsequently

Limitation: It fails to explain the conductivity of semiconductors

Name of the Departm
Name of the Lecture
Course / Group
Paper
Name of the Topic
Hours required
Learning Objectives
Previous Knowledge to be reminded
Topic Synopsis
Examples / Illustrations
Additional Inputs

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	[illegible]
Name of the Lecturer	[illegible]
Course / Term	[illegible]
Paper	[illegible]
Name of the Topic	Dilute solutions
Hours required	4 hr
Learning Objectives	Colligative properties Solutions
Previous knowledge to be reminded	
Topic Synopsis	The properties of dilute solutions which depend on the number of particles of solute but not on their identity = colligative properties. Four are 1) Lowering of vapour pressure 2 Osmotic pressure 3 Elevation of b.pt 4) Depression in freezing point 1) At a particular temperature the difference between the vapour pressure of pure solvent and solute
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	Advanced physical chemistry by Gurtu Gurtu
Student Activity Planned after the teaching	class test
Activity Planned outside the Class room, if any	
Any other Activity	

Solution containing non volatile solute (2) is called lowering of Vapour pressure. It is represented by ΔP

$$\Delta P = P^0 - P_s$$

Raoult's law: At a given temperature lowering of V.P of dil. solution containing non volatile solute is equal to mole fraction of solute. This is called Raoult law.

$$\frac{\Delta P}{P^0} = \frac{n}{N+n} \quad \text{or} \quad \frac{\Delta P}{P^0} = \frac{n}{N}$$

2. Osmosis is a spontaneous flow of solvent molecules from pure solvent to dilute solution or from dilute solution to concentrated solution through semipermeable membrane is called osmosis.

The external pressure which must be applied on solution side to just prevent the osmosis is called osmotic pressure. Vant Hoff theory of dilute solution

$$\pi V = nRT \Rightarrow \pi = \frac{nRT}{V}$$

By using Berkley Hartley method, it is also determine experimentally in this method to find external pressure applied to solution side to just prevent osmosis is equal to osmotic pressure.

3. Elevation in B.P: $\Delta T_b = i K_b m$ where ΔT_b = elevation in B.P, K_b = molal elevation constant $K_b = \frac{RT_b^2}{1000 L_v}$

Cottrell's method is best method to determine K_b in which Thermometer reading is adjusted at boiling point of solvent

4. Depression in freezing point: $\Delta T_f = K_f m$: Beckmann's method is also easily calculable by: Here K_f is molal depression constant $K_f = \frac{RT_f^2}{1000 L_f}$

5. Abnormal colligative properties: Vant Hoff introduced a factor i to account anomalous behaviour of colligative properties. The relation $i = \frac{1-\alpha}{1-\gamma_n}$ for dissociation, Normal colligative prop.

TEACHI

Name of the Experimental Subject : ...
Name of the Lecturer : ...
Course / Group : ...
Paper : I

Name of the Topic	Title : Dil...
Hours required	4h
Learning Objectives	Solubility ...
Previous Knowledge to be mentioned	Salt Hydr...
Topic Synopsis	Colligative ... is suppression ... Osmosis ... effect ... Applications ... Hyp... Hyd...
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board
References used	
Student Activity Planned after this teaching	
Activity Planned towards this Class room if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. ANJANEYA
Course / Group	B.Sc (MPC & BZC)
Paper	I
Name of the Topic	Ionic Equilibrium
Hours required	3 h
Learning Objectives	Solubility product & Common ion effect
Previous Knowledge to be reminded	Salt Analysis
Topic Synopsis	Common ion effect:- The dissociation of weak electrolyte is suppressed in the presence of strong electrolyte containing common ion is called common ion effect. $CH_3COOH \rightleftharpoons CH_3COO^- + H^+$ $CH_3COONa \rightarrow CH_3COO^- + Na^+$ Application of common ion effect $H_2S \rightleftharpoons H^+ + S^{-2}$ $CuCl_2 \rightarrow Cu^{+2} + 2Cl^-$ $CuCl_2 + H_2S \rightarrow CuS \downarrow$ black ppt $ZnCl_2 + H_2S \not\rightarrow ZnS$ (in neutral medium)
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	A) L. Jyothi
Course / Group	I B.Sc (B.Sc MPC)
Paper	I
Name of the Topic	Solutions
Hours required	5hr
Learning Objectives	Types of solutions, Nernst distribution law
Previous Knowledge to be reminded	Raoult's law
Topic Synopsis	Completely miscible liquids form two types of solution 1. Ideal solutions 2. Non ideal solutions Types solutions :- Real solutions showing small +ve deviation from Raoult's law Type II solution :- showing large +ve deviation from Raoult's law water + ethanol Type III solution :- Real solutions showing -ve deviation from Raoult's law : Ex:- phenol + aniline
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT - PPT
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

→ Azeotropic Mixtures :- A mixture of 2 or more liquids which boils at const temp and distil over completely at the same without change in composition is known as Azeotropic mixture. 1. minimum b.p azeotropic mixture $CH_3OH + H_2O$ 2. Maximum b.p azeotropic mixture $HCl + H_2O$

→ Partially miscible liquids the liquids at which two partially miscible liquids becomes completely miscible is called critical solution temp. phenol water system is example for Upper CST. Above and above phenol & water are completely miscible and below within ACB curve the two layers are in equilibrium.

→ If added material is soluble in only one of two liquid then the binary system is called with Upper CST. If added material is soluble in both liquids then it is called with lower CST.

→ Steam distillation :- It is process of distillation carried in a current of steam and is used in the purification of organic compounds. V.P of the liquid = V.P of individual components sum.

$$P = P_1 + P_2$$

→ Nernst Distribution Law :- A solute distributes itself between two immiscible solvents in such ways that the ratio of the conc of the solute in the two solvents is constant at constant temperature.

$$\frac{C_1}{C_2} = K$$ Here two solvents should be immiscible

→ If the solute undergoes association $K = \frac{C}{\sqrt{C_1}}$ n = No of solute molecules

→ If the solute undergoes dissociation $K = \frac{C_1}{C(1-\alpha)}$

If solute dissociated in both solvents with different degree of dissociation $\frac{C_1(1-\alpha)}{C_2(1-\alpha_1)} = K$

Application :- By using "K" we can purify the solute in solvent extraction method.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. L JANAKI
Course / Group	B.Sc
Paper	8
Name of the Topic	Liquid crystals
Hours required	6hr
Learning Objectives	classification & applications
Previous Knowledge to be reminded	solid state & liquid state
Topic Synopsis	Some solids when heated passes through two distinct phases and form liquids. The intermediate turbid state b/n solid & liquid is called liquid crystal state. This is also called mesomorphic state as they exhibit properties of both solid & liquid. Ex: p-cholesteryl benzoate solid $\xrightarrow{145^\circ C}$ liquid crystal $\xrightarrow{178^\circ C}$ liquid The main difference is properties of liquid crystals
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT-PPT
References cited	Advanced physical chemistry by Gurudeep raj
Student Activity Planned after the teaching	class test
Activity Planned outside the Class room, if any	
Any other Activity	

changes with temperature & their properties doesn't change with the raise in temperature.

On the basis of molecular arrangement liquid crystals are classified into 3 types 1. smectic liquid crystals 2. Nematic liquid crystals 3. cholestric liquid crystals.

Smectic liquid crystals have soap like structure. Their molecules the layers slide over one another

Nematic L.C have thread like liq crystals. They don't conduct electricity in pure form

cholesteric L.C shows properties of nematic crystals but they have have layer structure like smectic crystals.

Application:- L.C are used in electric gadgets like LCD

In absence of electric field liquid crystals are aligned light passes through polarizers & is reflected back from mirror and again passes through both polarizers and appears silvery white.

When an electric field is applied, the molecules rotate & the light is blocked displaying dark lines.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. L JANAKI
Course / Group	BSc
Paper	I
Name of the Topic	Gaseous state
Hours required	6hr
Learning Objectives	Isotherms, Joul-Thomson effect, laws of corresponding states
Previous Knowledge to be reminded	
Topic Synopsis	→ The gas which obeys the gas equation $PV = nRT$ is called perfect gas. gas which obeys under low P & high Temp are real gases → Compressibility factor $= \frac{PV}{RT}$ which is measure of how far a real gas depart from ideal behaviour. Causes of deviation 1. forces of attraction between gas molecules are negligible 2. Volume occupied by the gas molecules are negligible smaller as compared to the total volume of gas
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Blackboard. piece of chalk
References cited	Advanced physical chemistry by Gurudeep raj
Student Activity Planned after the teaching	Questionnaire
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject : CHEMISTR	
Name of the Lecturer : N. L. JANAKI	
Course / Group : B.Sc (Aquaculture	
Paper : VII	
Name of the Topic	Introduction To Environmental chemistry
Hours required	9hr
Learning Objectives	Environmental segments, Definitions, Resources.
Previous Knowledge to be reminded	Environmental Science.
Topic Synopsis	→ Environment means surroundings. Environmental chemistry deals with study of origin, transport, reactions effects & fates of chemical species in the environment. → Main significance is understanding their interactions for predicting what may happen to certain compounds if discharged into the environment. → the four major segments of Environment are Atmosphere, Hydrosphere, Lithiosphere & Biosphere. → Biotic & Abiotic components are two basic ones in
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT-PPT
References cited	Environmental chemistry by A.K. Dee
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

→ Abiotic components, Autotrophs the primary producers of ecosystem.
→ Abiotic components, all physical & chemical aspects that influence living organism.
→ pollutant :- Already present in nature & its conc increased to unexpected rate due to human activity
Contaminant :- Doesn't occur in nature & introduced by human activity and exerts harmful effect on human health
→ Receptor :- It may anything which is affected by pollutant
- Natural Resources :- Resources that exist without any action of humankind. Eg :- air, sunlight, water, soil,
Based on availability there are of two types (i) Renewable resources (ii) Non-Renewable resources. later one depleted more quickly How they can generate Eg :- fossil fuels, minerals. former one can be replenished. Eg :- forest, wind, water
→ solar energy : energy from the sun that is converted into thermal or electrical energy. this energy generated in the sun due to fusion reactions. the three main ways to harness solar energy (i) photovoltaics (ii) cooling & heating, conc of solar power
→ Biomass energy : Organic matter produced by plants and directly energy from plant or plant derived products. as it is carbon based and is composed of a mixture of H, O, N & small quantities of other atoms like alkali, alkaline earth heavy metals
thermal conversion & Biochemical conversion methods are used to convert biomass to energy.
→ Thermal Energy :- Energy generated by burning fuels such as coal, petroleum & natural gas. Types of thermal power plants steam power generation, Gasturbine power generation, combined cycle power generation
→ nuclear energy : Energy that can be liberated by changes in nucleus of an atom
→ Hydrological cycle :- water cycle → Reaction of oxygen $O_2 \xrightarrow{hv} O_2 + O$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. L JANAKI
Course / Group	M.Sc
Paper	VII
Name of the Topic	Air pollution
Hours required	9hr
Learning Objectives	classification of pollutants - challenges of Environmental pollution
Previous Knowledge to be reminded	
Topic Synopsis	→ is an unwanted change in the quality of earths atmosphere caused by emission of gases due to burning of fossil fuel, transportation, industrial institution etc. → classification of Air pollutants Natural pollutants : the pollution which comes out from natural source such as forest fires Volcanic eruption decomposition of organic matter & natural radioactivity Primary pollutants :- Harmful chemical that directly enters the air as a result of human activity. Secondary pollutant :- they result from chemical rxns b/n
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT-PPT
References cited	Environmental chemistry by AK.Dey
Student Activity Planned after the teaching	class test
Activity Planned outside the Class room, if any	—
Any other Activity	—

Thus Vanderwaal equation $\left(P + \frac{a}{V^2}\right)(V-b) = RT$

→ Isotherms of CO_2 andrews studied the effect of pressure on volume of CO_2 at different temperatures. For Isotherm 31.1°C the observed critical point for CO_2 at which distinction between liquid & vapour state disappears.

P_c, V_c, T_c are critical constants.

→ Relation for critical constants & Vanderwaals constants.

$V_c = 3b$; $P_c = \frac{a}{27b^2}$; $T_c = \frac{8a}{27Rb}$; $R = \frac{8}{3}\frac{P_c V_c}{T_c}$

→ Joule-Thomson effect :- The phenomenon of producing lowering of temp when a gas is made to expand adiabatically from region of high pressure into a region of lower pressure is known as Joule Thomson effect

$\mu = \left(\frac{dT}{dP}\right)_H$ where μ = positive — cooling effect

$\mu = 0$ .... no effect — ex: CO_2, SO_2, NH_3, O_2, etc

ex:- ideal gas.

μ = negative — warming effect

ex:- H_2, He

Inversion temperature

$T_i = 2a/Rb$ Here a & b are Vanderwaal's constants

The temperature below which gas becomes cooled in Joule-Thomson effect is called inversion temperature.

→ Law of corresponding states :

Reduced pressure $\pi = \frac{P}{P_c}$; Reduced volume $= \frac{V}{V_c} = \phi$;

Reduced temperature $= \frac{T}{T_c} = \theta$ Substituting all these in Vanderwaal equation

$$\left(\pi + \frac{3}{\phi^2}\right)(3\phi - 1) = 8\theta$$

If two gases have the same π & θ then they will have the same reduced volume ϕ. This is called the law of corresponding states.

due to more air pollutant

$2 + 2H_2 + S_2 \rightarrow 2H_2S$

- greenhouse effect - increase global temperature, thereby melting the polar temperature will increase by 1.5°C per year and the pollution continues to increase at the same rate.
- ozone depletion - ozone layer in the upper atmosphere ozone molecules harmful ultraviolet radiation and it is nothing human & more UV rays reaching on the earth causing different diseases like cancer & eye problems
- photochemical smog - the term smog coined by combining the smoke was caused by fog, smoke and chemicals played a great role in the formation of the smog through smoke reading at that time were already attributed the term smog photochemical confirmed that three people
- Acid rain - it is caused by oxide of N_2 & Sulphur. It increases the acidity of soil & effects the growth of trees & plants. It reduces the rainwater pH value in water it also affecting to the
- Bhopal gas disaster - 10 tons of toxic gas MIC gas accidentally released from union Carbide's Bhopal plant on December 1984 early morning hours. An estimated 3000 people died and 5000 more people suffered agonizing injuries
- Controlling method of air pollution
  - Leading to control of air pollution by the states (2) Installation of controlling devices & equipment (4) construction of high stacks to discharge the pollutants at higher altitudes (5) by growing vegetables

The following devices are used for dust collection

(1) Cyclone separators (2) Electrostatic precipitator.
(3) Bag - filtration device.

Cultivation of pollution resistant species separate the best practices of reducing injury by air pollutants.

Name of the Class
Name of the Lect
Course / Group
Name of the Topic
Hours required
Learning Objectives
Previous Knowledge to be reminded
Topic Synopsis
Examples / Illustrations
Additional Inputs
Teaching Aids used
References cited
Student Activity Planned after the teaching
Activity Planned outside the Class room, if any
Any other Activity

→ BOD - The amount of oxygen required by microorganisms to cause the break down of decomposition of organic matter in water sample over a period of 5 days at 20°C. It is called 5 day BOD & is expressed in ppm

→ COD - The amount of O_2 required by organic matter in sample water for its oxidation by a strong chemical oxidizing agent such as $K_2Cr_2O_7$.

→ water which lathers easily on shaking soap solution is called soft water which doesn't produce it is called hard water. In general Hardness of water sample is taken as a measure of its Ca^{+2} & Mg^{+2} content (4) Temporary Hardness - It is caused by presence of bicarbonates of Ca^{+2}, Mg^{+2} & other metals. Which is easily removed by boiling $Ca(HCO_3)_2 \xrightarrow{Heat} CaCO_3\downarrow + H_2O$ and clark's process.

(2) Permanent Hardness: Due to presence of chlorides, nitrates of calcium, magnesium & other metals. It is also classified as alkaline & non alkaline hardness. Methods for removing permanent hardness.

(1) Zeolite process.

$$Ca(HCO_3)_2 + Na_2Z \rightarrow CaZ + 2NaHCO_3$$
$$Mg(HCO_3)_2 + Na_2Z \rightarrow MgZ + 2NaHCO_3$$

(2) Lime - soda process.

$$MgCl_2 + Ca(OH)_2 \rightarrow CaCl_2$$
$$MgSO_4 + Ca(OH)_2 \rightarrow Mg(OH)_2 + CaSO_4$$
$$CaSO_4 + Na_2CO_3 \rightarrow CaCO_3\downarrow.$$

(3) Ion exchange method: $R-H^{-1} + Ca^{+2} \rightarrow R_2Ca^{+2} + 2H^+$

$$R-OH + Cl^- \rightarrow R-Cl + OH^-$$

→ Eutrification - The gradual increase in the concentration of 'P', 'N' & other plant nutrients in an aging aquatic ecosystem such as lake. Main effect is loss of species of biodiversity

→ Industrial waste water treatment:- The toxic & non-biodegradation chemicals can be removed by 3 methods 1) Filtration by activated charcoal 2) Synthetic organic ion exchange resin method (3) Membrane technique.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L. JANAKI
Course / Group :	M.Sc
Paper :	VI
Name of the Topic	chemical Toxicology
Hours required	5hr
Learning Objectives	To elucidate effects of pesticides & Cyanides & toxicity of elements
Previous Knowledge to be reminded	Bioinorganic elements
Topic Synopsis	Toxicology is study of those natural or man made poisons that cause undesirable effects on living organisms Toxic element :- Effect of toxic elements :- Organ damage, Cancer, Asthma etc. -> Cyanide & its effects - it is found abundantly in nature as well as in man made materials Ex:- seeds of apples, peaches etc.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT-ppt
References cited	Environmental chemistry by A.K.Dey
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	A
Any other Activity	

Amyg: dalal. $+2H_2O \longrightarrow 2CO_2 + 6H_2O$ + Energy Malayan
Tree is stored along with glucose comes out also release
and is used for energy producing process by living cells

-> Pesticides:- It is a chemical or a biological agent such as
virus or a disinfectant that deters, incapacitates, kills or
eg- DDT, organochlorines, organophosphates

Ko & nuc Ko-f-v

Biochemical effect:-

Ester + $CH_3-C(=O)-O-CH_2-CH_2-N(CH_3)_3$ → Ester-C(=O)-CH_3 + HO-$CH_2-CH_2-N(CH_3)_3$

Acetylcholine — acetylcholine — Acetyl enzyme — Choline

esterase enzyme

Ester-C-CH3 + H2O → Ester-OH + CH3COOH

Pesticides react with enzyme and decrease the level of
active enzyme. So the nerve starts firing in an uncontrolled
manner, with the result that the muscle twitches

Toxicity of As: By virtue of chemical similarity to P, As interferes
the biochemical process, and also

Renal failure, muscle cramps, facial pain, jaundice etc. All these
a curing of arsenic poisoning is possible after oxidation of arsenite
-> Toxicity of Lead:- The major biochemical effect of Pb is to interfere
with heme synthesis leads to anemia, constipation, bone disorder
- EDTA chelation therapy is used
-> Toxicity of Hg:- organomercury compounds are more toxic than
Cause mental retardation, paralysis, vision changes, deafness
with reversal by BAL
chelation therapy with DMSA and DMPS
-> Toxicity of Cd:- free Cd++ in body reacts with Zn++ containing
enzymes & alter metabolic activity.
Itai-Itai disease, anemia, hypertension, bone marrow damage, liver

Name of the Depart
Name of the Lectur
Course / Group
Paper XIII
Name of the Topic
Hours required
Learning Objectiv
Previous Knowled
to be reminded
Topic Synops
Examples / Illustrations
Additional Input
Teaching Aids
References (if
Student Activit
Planned after the teaching
Activity Planne
outside the C
room, if any
Any other Act

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L.JANAKI
Course / Group :	II B.Sc
Paper :	VII
Name of the Topic	Water pollution
Hours required	9hr
Learning Objectives	Properties of water, quality parameter, Methods to convert Hard water to soft water
Previous Knowledge to be reminded	. Pollution,
Topic Synopsis	→ Water is an excellent solvent for several nutrients it has a high latent heat of vaporization, high surface tension & cohension. → Quality characteristics of water 1. Alkalinity (2) Hardness (3) Total solids (4) Oxidation 5. Transparency (6) Silica content → Dissolved oxygen :- the optimum value for good quality water has been 4-6mg/litre of DO, which is able to maintain aquatic life in a water body.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	ICT-PPT, Blackboard & piece of chalk
References cited	Environmental chemistry by A.K. Dee
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L JANAKI
Course / Group :	II-BSc
Paper :	VII
Name of the Topic	Ecosystem
Hours required	9hrs
Learning Objectives	Types of Ecosystem, flows of energy, Biodiversity Global Network level of, etc
Previous Knowledge to be reminded	Biosphere in the Environment
Topic Synopsis	→ A.G. Tansely said Ecosystem means Environment interact it is the basic functional unit of organisms and their environment interacting with each other and with their own components → Terrestrial & aquatic ecosystems are of two types → Structure - Ecosystem → Abiotic non living ex:- soil, water, light → Biotic living ex:- producers consumers → the flow of energy is one way direction from producers to consumers and ends in decomposition process
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board & piece of chalk, LCT - OHP
References cited	Unified chemistry by J.P. Mer
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	—
Any other Activity	-

→ However a part of energy is lost as heat and agree with phenomenon of second law of thermodynamics.

→ Grazing food chain & Detritus food chain are main two food ch... and helps in understanding the mechanism of energy flow

→ a network of food chains which are interconnected at vario... tropic levels, so as to form a number of feeding connecti... amongst different organisms of a biotic community

→ nitrogen cycle is a cycle in which atmospheric nitrogen is conve... ted into its compounds such as nitrates & the combined nitrogen is ag... constantly passing back to atmosphere.

→ phosphates in the soil are also derived from erosion of phosphate roc... Elements are phosphorus, Calcium etc, reach the sea through the wate... Where they are deposited in the form of rocks. As a result of dis... tegration of rocks, these again dissolve in water & absorbed by the plan... This cycle goes on

→ photosynthesis is simple, basic carbon cycle.

→ Biodiversity describes the richness and variety of life on earth. There different types of biodiversity are Genetic, species, Ecolog... biodiversity respectively

Genetic diversity refers variation among the genetic resources & organisms.

Ecological stability, Economy

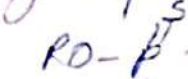
→ Biodiversity profile of India:- It is the 7th largest country in the world. and largest nation in Asia, land frontier is 15,200 km Coastaline of 7,516 km one of the top 12th megadiversity coun... tries.

Name of the
Name of the
Course / Gro
Paper :
Name of the
Hours requi
Learning O
Previous K
to be remin
Topic
Example
Illustratio
Addition
Teachin
Referen
Studen
Planne
the tea
Activity
outside

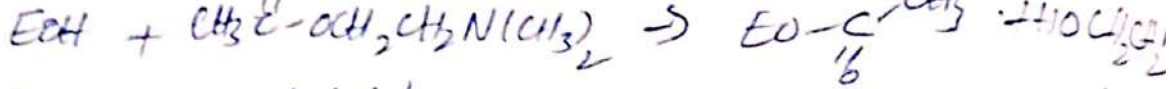
Amygdalin $+2H_2O \longrightarrow HCN + 2C_6H_{12}O_6 +$ Benzaldehyde

Then in stomach along with glucose unit HCN also released and CN inhibits the energy producing process by forming $Fe(CN)_6^{3-}$

→ Pesticides:- It is a chemical or a biological agent such as virus or a disinfectant that deters, incapacitates, kills, e.g:- DDT, organocarbamates, organophosphates.,



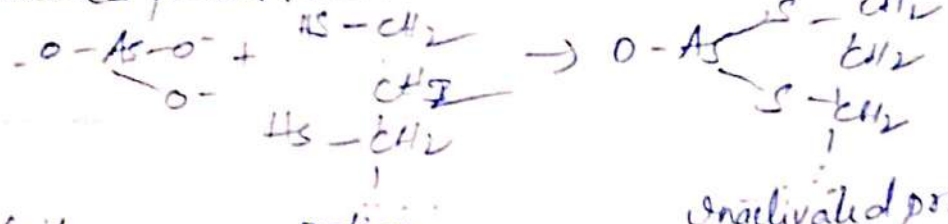
Biochemical effect:-



Acetylcholine esterase enzyme — Acetylcholine — Acetylenzyme — Choline

Pesticides react with enzyme and decrease the level of active enzyme. So the nerve starts firing in an uncontrollable manner, with the result that the pest is quickly killed

Toxicity of AS: By virtue of chemical similarity to P^-, As interferes some biochemical process, and also



Inactivated protein

Renal failure, muscle cramps, protein, loss of hair, jaundice etc. will occur

→ curing of Arsenic poisoning is possible with antidote 2,3 dimercapto propanol.

→ Toxicity of Lead:- the major biochemical effect of Pb is its interference in heme synthesis leads to Anemia, Constipation, poor appetite

→ EDTA chelation therapy is used

→ Toxicity of Hg:- organomercury compounds are more Toxic than Hg. Cause mental retardation, paralysis, vision changes. Malfunction with nervous system

chelation therapy with BAL or ISA or DMPS

→ Toxicity of Cd:- free Cd^{+2} in body exchanges with Zn^{+2} containing enzymes to alter metabolic activity.

Renal disfunction, Anemia, Hypertension Bone marrow disorder, cancer

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. L. JANAKI
Course / Group	A I 2 C
Paper	VII
Name of the Topic	Ecosystem
Hours required	9 hrs
Learning Objectives	Types of Ecosystem, flows of energy, Biodiversity, Global Biosphere in the Environment
Previous Knowledge to be reminded	
Topic Synopsis	→ A. G. Tansely said Ecosystem means Environment interact of is the basic functional unit of organism and their environment interacting with each other and with their own components → Terrestrial & aquatic ecosystems are of two types, → Structure - Ecosystem → Abiotic ex:- Soil, water, light non living → Biotic living ex:- producers & consumers → The flow of energy is one way direction from producers to consumers and ends in decomposition process
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board & piece of chalk, LCD - PPT
References cited	Unified chemistry by J.P. Mer
Student Activity Planned after the teaching	—
Activity Planned outside the Class room, if any	—
Any other Activity	

→ However a part of energy is lost as heat and agrees with phenomenon of second law of thermodynamics.

→ Grazing food chain & Detritus food chain are main two food chains and helps in understanding the Mechanism of energy flow

→ a network of food chains which are interconnected at various tropic levels, so as to form a numbers of feeding connections amongst different organisms of a biotic Community

→ Nitrogen cycle is a cycle in which atmospheric nitrogen is converted into its compounds such as nitrates & the combined nitrogen is again constantly passing back to atmosphere.

→ phosphates in the soil are also derived from erosion of phosphate rocks elements are phosphorus, Calcium etc, reach the sea through the water where they are deposited in the form of rocks. As a result of disintegration of rocks, these again dissolve in waters & absorbed by the plants

→ photosynthesis is simple, basic carbon cycle. the cycle goes on

→ Biodiversity describes the richness and variety of life on earth three different Types of biodiversity are Genetic, Species, Ecological biodiversity respectively
Genetic diversity · refers variation among the genetic resources of organism.
Ecological stability, Economy

→ Biodiversity profile of India :- It is the 7th largest country in the world. 2nd largest nation in Asia, land frontier - 15,200 km Coastaline of 7,516 km one of the top 12th megadiversity countries.

Name of the
Name of the
Course / Gro
Paper
Name of the
Hours requir
Learning Ob
Previous Kn
to be remind
Topic S
Examples
Illustration
Additional
Teaching
Reference
Student A
Planned a
he teachi
Activity Pl
outside th
oom, if a
Any other

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L. JANAKI
Course / Group :	BSc (BHC & MBC)
Paper :	II
Name of the Topic	Chemical bonding
Hours required	6hrs
Learning Objectives	VBT, MO theory
Previous Knowledge to be reminded	
Topic Synopsis	→ Valence bond theory - proposed by Heitler & London to explain formation of covalent bonds. Later pauling & slater extended to explain shapes & bondangles in molecule. main postulates are, 1) covalent bond is formed by over lapping of atomic orbitals contains unpaired elects of opposite spin. 2) greater the overlapping stronger will be bond overlapping decreasing order P-P > S-P > S-S
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board & piece of chalk
References cited	Advanced physical chemistry by Gurudeep raj
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

→ σ & π are two types of bonds formed by axial overlap & partial overlapping.

→ But this theory doesn't explain stability, magnetic properties of molecules

→ Intermixing of dissimilar atomic orbitals having approximately equal energy to produce equal energy hybrid orbitals. this phenomenone is called Hybridisation
Ex:- SP — linear shape — 180° bondangle — $BeCl_2$
$Ni(CO)_4$ undergoes sp^3 hybridisation and have tetrahedral structure.

→ All atomic orbitals in atoms in bonding combined to produce MO by using linear combination of LCAO method.

→ This theory was proposed by Hund & Mulliken. Molecule is treated as Big atom. formed MOrbitals are Bonding molecular orbitals which are having less energy than AO & Antibonding molecular orbital which are having more energy than AO. the orbitals which are not participated in the bonding are non-bonding orbitals.

→ According to MO diagram, the electronic configuration of O_2 molecule is $\sigma_{1s}^2 \sigma_{1s}^{*2} \sigma_{2s}^2 \sigma_{2s}^{*2} \sigma_{2p_x}^2 \pi_{p_y}^2 \cong \pi_{p_z}^2 \quad \pi_{p_y}^{*1} \cong \pi_{p_z}^{*1} \sigma_{2p_x}^{*}$

But in case of N_2 molecule

$\sigma_{1s}^2 \sigma_{1s}^{*2} \sigma_{2s}^2 \sigma_{2s}^{*2} \sigma_{2p_x}^2 \pi_{p_y}^2 \pi_{p_z}^2 \sigma_{2p_x}^2 \pi_{p_y}^{*} \pi_{p_z}^{*} \sigma_{2p}^{*}$

and Bond order $= \frac{1}{2}(10-4) = \frac{1}{2}6 = 3$ thus $N \equiv N$.

This theory explains successfully magnetic properties & Stability of molecules.

In the same way Heteronuclear molecule NO has configuration

$\sigma_{1s}^2 \sigma_{1s}^{*2} \sigma_{2s}^2 \sigma_{2s}^{*2} \sigma_{2p_x}^2 \pi_{p_y}^2 \cong \pi_{p_z}^2 \quad \pi_{p_y}^{*1} \cong \pi_{p_z}^{*0} \sigma_{2p_x}^{*0}$

$BO = \frac{1}{2}(10-5) = 2.5$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	N.L. JANAKI CHEMISTRY
Name of the Lecturer	N.L JANAKI
Course / Group	I Yr B.Sc (BHC & MBC)
Paper	Paper-II Organic General chemistry
Name of the Topic	colloids & Adsorption
Hours required	6 hrs
Learning Objectives	Gold number, Hardy-schulz rule, Tyndall effect, Brownian motion
Previous Knowledge to be reminded	
Topic Synopsis	→ Hardy schulz rule :- Both state that precipitating effect of an ion on dispersed phase of opposite charge increases with the valence of the ion. Higher the valence of the effective ion, greater is its precipitating power. → stability of Sols :- It is mainly due to 2 factors (1) presence of like charge on sol particle (2) presence of solvent layer around sol particle
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Blackboard & piece of chalk
References cited	Advanced physical chemistry by Gurtu & Gurtu
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

⇒ protective action of sols :- the property of lyophilic sols to prevent the precipitation of a lyophobic sol is called protective action.

Gold number :- the number of milligrams of a lyophilic colloid that will just prevent the precipitation of 10 ml of a gold sol on the addition of 1 ml of 10 percent Sodium chloride solution.

Adsorption :- the surface of a solid has a tendency to attract

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject : CHEMISTRY	
Name of the Lecturer : N. L JANAKI	
Course / Group : BZC (BHC & MBC)	
Paper : II	
Name of the Topic	HSAB
Hours required	2 hrs
Learning Objectives	HSAB principles
Previous Knowledge to be reminded	acids & bases
Topic Synopsis	→ Pearson's concept :- Hard Acids are prefer to combine with Hard bases. Similarly soft acids with Soft bases. The bonding interaction between Hard acids & Hard bases is ionic. in soft acids & Soft bases is covalent. Hard acids are Lewis acids are having small size & large +ve charge and are not easily polarised. Ex:- alkali & alkaline earth metals Li^+, Mg^{2+}, Ca^{2+} soft Acids : which are having large size & small +ve charge and easily polarizable & molecules/ions
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Black board & piece of chalk
References cited	Unified chemistry
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

having large no of valence electrons
ex:- Cu^+, Ag^+, Hg^+

Hard bases: Hard bases are those ligands (in which donor atom have higher electronegativity, are not easily polarized
Ex:- NH_3, H_2O

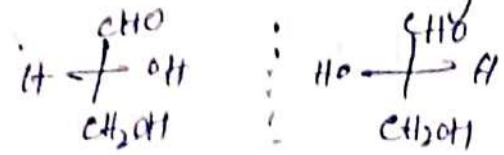
Soft bases - Ligands in which donor atom have less electronegativity are easily oxidized, are associated with easily accessible vacant orbitals of low energy.
ex:- S, Se, P

Applications
1. Prediction of stability of complexes:
$[HgI_4]^-$ complex is more stable than $[HgF_4]^-$ because of the one is HA and SB combination and other one HA and HB combination
2. Prediction of feasibility of reaction
$AgI + CsF \rightarrow AgF + CsI$
In this reaction AgF & CsI will be stable compounds
Hence reaction is feasible.
3. Solubility: Hard solutes dissolve in hard solvents and soft solutes dissolve in soft solvents.

TEACHING PLAN (SYNOPSIS)

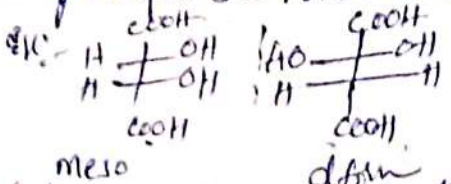
Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L JANAKI
Course / Group :	B.Sc (BHCAMBC)
Paper :	II
Name of the Topic	Stereochemistry of Carbon compounds.
Hours required	10hrs
Learning Objectives	Molecular representations, optical Isomerism, Geometrical configurations, Resolution techniques
Previous Knowledge to be reminded	Hydrocarbons
Topic Synopsis	→ Stereochemistry - it deals with spatial arrangement of atoms/groups around of C. atoms. → wedge formula, Fischer projection, Newmann projection formula, Saw-horse formula are used to represent the molecules in Space optical Isomerism : The substance which rotates plane polarised light in clockwise direction (or) anticlockwise direction is called optically active compound. Those are called optical Isomers.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Blackboard & piece of chalk
References cited	Advanced organic chemistry by Bahl & Bahl
Student Activity Planned after the teaching	- Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

optical Isomerism in Glyceraldehyde



(+) D- Glyceraldehyde (-) L- Glyceraldehyde
d form l-form

- These are Nonsuperimposible mirror images. Hence Enantiomers
→ Nonsuperimposible non mirror images are diastereomers



meso d form

→ Relative Configuration:- This configuration was proposed by Fischer & Rosanoff. Configuration of all the compounds were studied w.r.to Glyceraldehyde.
→ Absolute Configuration - Cahn-Ingold-Prelog proposed this
Step1 - priorities of 4 atom/groups are alloted according to sequence rules:- The four atoms/groups. C-atom are given priority based on the atomic number
S.rule 2 :- if 2 or more atoms have same atomic number Priority may be determined by comparing the next atom in the group.
S.rule 3 :- A doubly or triply bonded atom 'X' is equivalent to 2(or) 3 such atoms
Step2: After assigning the priorities the molecule is arranged in a way such that the lower priority group is directed away from the eye and remaining gps are
→ E & Z nomenclature:- When two double bonded Carbon atom have 4 different gps.
Assign 'Z' configuration if atoms of higher priority on each Carbon are on the same side of '=' bond
Assign 'E' Configuration if gp1 of higher priority on each Carbon are on different side of '=' bond
→ Resolution:- Separation of enantiomers is called Resolution
Diastereomer formation Method is best technique to Separate Enantiomers.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N. L. JANAKI
Course / Group	B.Sc (BZC & MSC)
Paper	II
Name of the Topic	C-C Single bonds. Carbanions & Carbocations
Hours required	3 hrs
Learning Objectives	Preparation, properties, Carbanion, Range, Stability
Previous Knowledge to be reminded	Hydrocarbons classification
Topic Synopsis	Wurtz reaction :- $2R-X + 2Na \xrightarrow[\text{dry ether}]{} R-R + 2NaX$ It is free radical reaction If R = aryl group then reaction is called wurtz fittig reaction Mechanism $R-X + Na \longrightarrow R^{\cdot} + NaX$ $R^{\cdot} + Na \rightarrow R^{\oplus}Na^{\oplus}$ $R^{\oplus}Na^{\oplus} + R-X \rightarrow R-R + NaX$
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Blackboard & piece of chalk
References cited	Advanced organic chemistry by Bahl & Bahl
Student Activity Planned after the teaching	Questionnaire
Activity Planned outside the Class room, if any	
Any other Activity	

→ Corey-House synthesis :-

$CH_3I + Li \rightarrow CH_3Li$; $CH_3Li + CuI \rightarrow (CH_3)_2Cu$

$Li(CH_3)_2Cu + C_2H_5Br \rightarrow CH_3 - C_2H_5 + CuBr$

→ physical properties :- MP & BP increases with higher alkanes.
Viscosity decreases with increasing 'c' number

→ Chemical properties :- Alkanes involves in halogenation reaction it is a free radical substitution reaction

⇒ Chlorination :-

$CH_4 + Cl_2 \xrightarrow{h\nu} CH_3Cl + HCl$

$CH_3Cl + Cl_2 \rightarrow CH_2Cl_2 + HCl$

$CH_2Cl_2 + Cl_2 \rightarrow CHCl_3 + HCl$

$CHCl_3 + Cl_2 \rightarrow CCl_4 + HCl$

Mechanism: Involves three steps chain initiation, chain propagation, chain termination.

$Cl_2 \xrightarrow{h\nu} Cl^{\cdot} + Cl^{\cdot}$ – Initiation

$Cl^{\cdot} + CH_4 \rightarrow CH_3^{\cdot} + HCl$ } propagation

$CH_3^{\cdot} + Cl_2 \rightarrow CH_3Cl + Cl^{\cdot}$ }

$Cl^{\cdot} + Cl^{\cdot} \rightarrow Cl_2$ } chain termination

$Cl^{\cdot} + CH_3^{\cdot} \rightarrow CH_3Cl$ }

$CH_3^{\cdot} + CH_3^{\cdot} \rightarrow CH_3 - CH_3$

→ Conformational Analysis

In case of ethane Eclipsed & Staggered forms are important

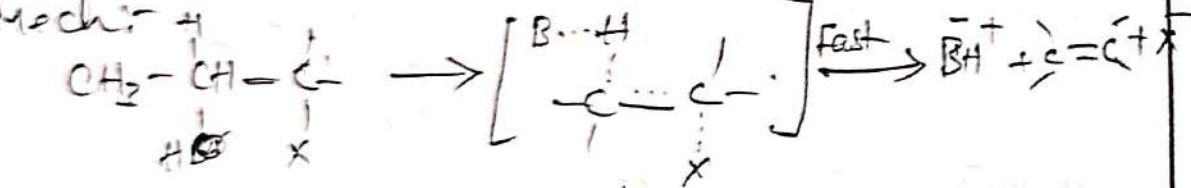
Energy difference is 2.8 Kcal/mol. Staggered is more stable

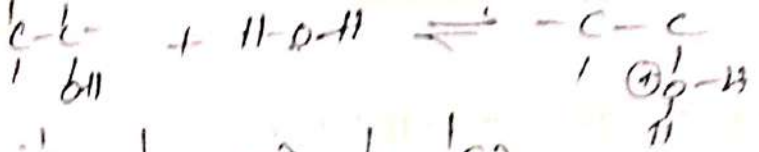
But in Butane along with some of skew forms like Gauche & eclipsed forms are also possible and their energy is in b/n staggered & eclipsed one.

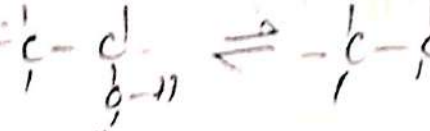
→ Cycloalkanes general formula - C_nH_{2n}

According to Baeyers strain theory All cycloalkanes are planar and tetrahedral angle is present in between C-C bonds. Preparation of higher cycloalkanes is difficult because they are less stable

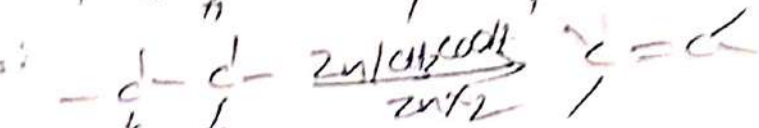
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	CHEMISTRY
Name of the Lecturer	N.L. JANAIK
Course / Group	BSC (BHC & MBC
Paper	II
Name of the Topic	C=C π Bonds (Alkenes & Alkynes)
Hours required	12hr
Learning Objectives	Preparation & properties, conformational analysis of alkanes. Cycloalkanes – Baeyer strain theory, conformations
Previous Knowledge to be reminded	C-C σ bonds
Topic Synopsis	Preparation of alkenes Dehydrohalogenation E_1 Grxns $CH_3-CH_2Br \xrightarrow[NaOEt]{Base} CH_2-CH=CH_2$ Here Rate of reaction depends on bimolecular Hence it is E_2 reaction Mechi:  Dehydration:
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	Atomic model, Black board & piece of chalk
References cited	Advanced Organic chemistry by Bahl & Bahl
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

Mech:- (1) 

(2) 

(3)

5) Dehalogination: 

→ Markownikovs rule: In additions an unsymmetrical reagent added to unsymmetrical alkene, positive part of reagent is added to double bonded carbon which is having more no of hydrogens.

$CH_3-CH=CH_2 + HBr \longrightarrow CH_3-\underset{Br}{CH}-CH_3$

If the reactions takes place in presence of light & organic Peroxides the product obtained is against Markownikoff's rule.

$CH_3-CH=CH_2 + HBr \longrightarrow CH_3-CH_2-\underset{Br}{CH_2}$ Anti Markownikoff's

oxymercuration - Demercuration

$CH_3-CH=CH_2 + Hg(OAc)_2 \xrightarrow[H_2O/NaBH_4]{} CH_3-\underset{OH}{CH}-\underset{H}{CH}$

Hydroboration - oxidation

$CH_3-CH=CH_2 \xrightarrow[(ii)\ C_6H_5COOH,\ H_2O]{(i)\ B_2H_6} CH_3-CH_2-CH_2OH$

Ozonolysis

$CH_3-CH=CH_2 \xrightarrow[(ii)\ Zn/CH_3COOH]{(i)\ O_3} CH_3-CHO + HCHO$

Hydroxylation

$CH_3-CH=CH_2 \xrightarrow{(i)\ KMnO_4/OH^{\ominus}/H_2O\ (or)\ (ii)\ OsO_4/OH^{\ominus}/H_2O\ (or)\ (iii)\ \text{Peracids}/H_2O} CH_3-\underset{OH}{CH}-\underset{OH}{CH_2}$

Thus 's' character is more in alkynes and e's of C-H bond are more strongly held by the Carbon nucleus. This makes it easier to remove the Hydrogen.

Ex:- $H-C\equiv C-H + Na \xrightarrow{liq.NH_3} H-C\equiv C^{\ominus}Na^{\oplus} + \frac{1}{2}H_2$

Electrophilic addition:- Alkynes shows less reactivity towards electrophilic addition due to (1) π electrons are more tightly held. Eg and hence less available. and (2) formation of highly strained cyclic intermediate is by attack of E^+ is less stable.

Ex:- Addition of halogens

$$\begin{matrix} CH \\ \| \\ CH \end{matrix} + Cl_2 \longrightarrow \begin{matrix} CHCl \\ | \\ CHCl \end{matrix} \xrightarrow{Cl_2} \begin{matrix} CHCl \\ | \\ CHCl_2 \end{matrix}$$

1,2 Dichloroethene

Westron (solvent)

Nucleophilic addition:- Such reactions are generally catalysed by salts of heavy metals to form π C

$$CH\equiv CH + Hg^{+2} \rightarrow CH\equiv CH \rightarrow Hg^{+2}$$

Thus the complex formation decreases the density around "$\equiv$" bonded C-atom ∴ electron deficient and to attack by nucleophile

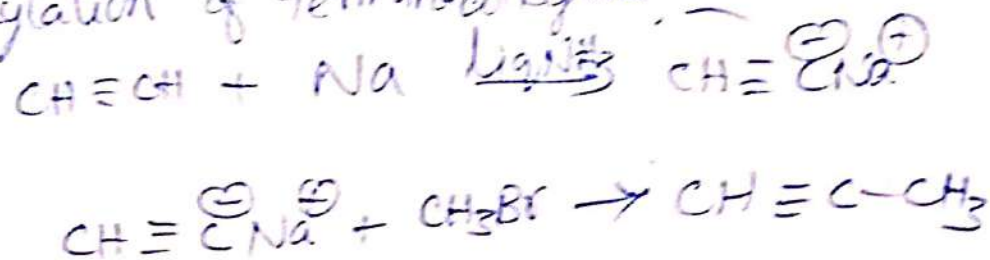
Ex:- Addition of H_2O (Hydration)

$$CH\equiv CH + H_2O \xrightarrow[H_2SO_4]{HgSO_4} CH_2=CH \leftrightarrow CH_3$$

OH

enol

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	Alkylation of terminal alkynes :- 
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

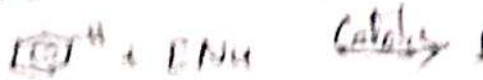
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	Reactions of alkynes :- Acidity : Acetylene & 1-alkynes are acidic in nature because they readily donates protons $R-CH\equiv CH$ + Base → $R-C\equiv C^{\ominus}$: + H Base It can be explained by atomic orbital description of the C-H bonds. The more s character there is in a hybrid orbital, closer the e's of the bond are to nucleus. Thus s character decreasing order sp (50%) > sp^2 (33.3) sp^3 (25%)
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	CHEMISTRY
Name of the Lecturer :	N.L JANARI
Course / Group :	B.Sc (BHC MBC & BZC)
Paper	II
Name of the Topic	Benzene & its reactivity
Hours required	12 hrs
Learning Objectives	Aromaticity, Reactivity, Orientation effect
Previous Knowledge to be reminded	Structure of Benzene
Topic Synopsis	Aromaticity is the property of sp^2 hybridized planar rings in which p-orbital allows cyclic delocalization of π electrons & the aromatic compounds resemble benzene in its chemical behaviour. They undergo substitution rather than addition. This characteristic behaviour is called Aromatic character Huckel rule:- Cyclic π Molecular orbitals formed by overlap of p orbitals & contain $(4n+2)\pi$ es
Examples / Illustrations	
Additional Inputs	Kekule structure of Benzene
Teaching Aids used	ICT - PPT
References cited	Advanced organic chemistry by Bahl & Bahl
Student Activity Planned after the teaching	class test
Activity Planned outside the Class room, if any	
Any other Activity	

Fused ring compounds:- Aromatic compounds having more than one benzene rings fused are called polyaromatic hydrocarbons
Eg: Naphthalene
Heterocyclic compounds Aromatic compounds having more than one rings are called heterocyclic aromatic compounds.
Eg:- Cyclopropenyl cations
Electrophilic substitution reactions



Mech :- (1) formation of Electrophile

$$E^+ \cdot Nu \longrightarrow E^+$$

(2) E^+ attack on aromatic ring

(3) loss of proton

Nitration, Friedel crafts alkylation and acylations are followed through above mechanisms

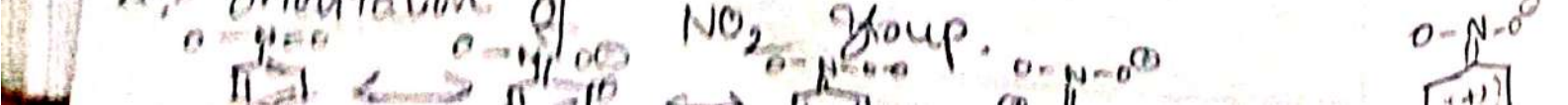
→ the nature of group already present on the benzene ring that directs the new incoming group either to the para positions & only to meta position this effect is orientation effect.

o/p Directing groups :- these groups direct the incoming group o, & p - positions and enhances further electrophilic substitute these are activating groups

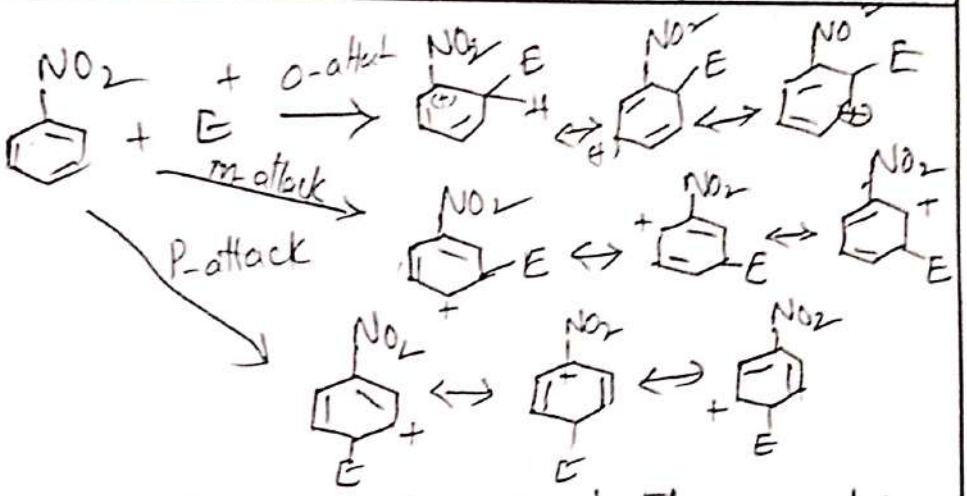
Eg:- o. NH_2, -OH, -R

m. directing groups: these groups direct the incoming group meta position and hinders further electrophilic substitution are deactivating groups

Eg:- orientation of NO_2 group.

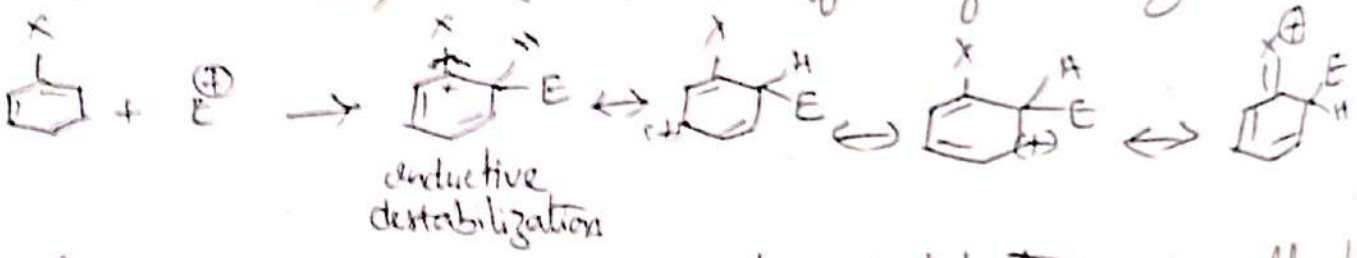


TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	
Course / Group :	
Paper :	
Name of the Topic	
Hours required	
Learning Objectives	
Previous Knowledge to be reminded	
Topic Synopsis	 In O, P attack, the obtained structures contains +ve charge in adjacent positions Hence less stable.
Examples / Illustrations	
Additional Inputs	
Teaching Aids used	
References cited	
Student Activity Planned after the teaching	
Activity Planned outside the Class room, if any	
Any other Activity	

than m- attack possible structure.

→ the exceptional behaviour of halogens as deacting g
is due to $-I$, $+T$ ($+M$ & $+E$) effect of halogens.


E
E
E

नवंबर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	आलपाटे शंकर प्रसाद
Course / Group :	तीसरा सत्र बी.ए / बी.कॉम / बी.एस.सी
Paper :	II
Name of the Topic	मातृभूमि
Hours required	6
Learning Objectives	मैथिली शरण गुप्त जी की रचनाएँ तथा कविता का सारांश
Previous Knowledge to be remained	मैथिली शरण गुप्त जी के व्यक्तित्व
Topic Synopsis	मातृभूमि कविता के कवि मैथिली शरण गुप्त जी है। प्रस्तुत कविता में कवि मातृभूमि के प्रति अपनी श्रद्धा और भक्ति व्यक्त किया है। जन्म से लेकर मृत्यु तक मानव मातृभूमि पर ही निर्भर होते हैं। मातृभूमि हमें जीने के लिए सब कुछ देती है। हम सब मातृभूमि की संतान हैं।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	देश-भक्ति से संबंधित अन्य रचनाएँ
Teaching Aids used	कंप्यूटर तथा प्रोजेक्टर, पठ्य पुस्तक, श्यामपट्ट
References cited	गुप्त जी से संबंधित
Student Activity Planned after the teaching	मैथिली शरण गुप्त जी के बारे में एक लेख लिखना
Activity Planed outside the Class room, if any	देश-भक्ति से संबंधित रचनाओं का संकलन करना
Any other Activity	देश-भक्ति से संबंधित गाना सिखाना।

TEACHING PLAN (SYNOPSIS)

सितंबर

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	आ. मनु प्रसाद
Course / Group :	तीसरा सत्र
Paper :	III
Name of the Topic	तोड़ती पत्थर
Hours required	6
Learning Objectives	सूर्यकांत त्रिपाठी निराला - व्यक्तित्व तथा कृतित्व तोड़ती पत्थर का सारांश
Previous Knowledge to be remained	निराला जी की अन्य कविता
Topic Synopsis	तोड़ती पत्थर कविता के कवि श्री सूर्यकांत त्रिपाठी निराला जी है। प्रस्तुत कविता में कवि एक पत्थर तोड़ने वाली औरत की दशा का चित्रण किया है। वह एक पेड़ के नीचे बैठी हुई जो बिना छायादार है। गरमी के मौसम होने के कारण तेज धूप है, फिर भी वह अपने काम में मग्न थी।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	निराला की रचनाएँ
Teaching Aids used	पाठ्य-पुस्तक, श्यामपट्ट, कंप्यूटर तथा प्रोजेक्टर
References cited	विकीपीडिया तथा यूट्यूब में निराला की रचनाएँ देखना
Student Activity Planned after the teaching	तोड़ती पत्थर कविता का सारांश लिखवाना
Activity Planed outside the Class room, if any	निराला की अन्य रचनाओं का इकट्ठा करना
Any other Activity	हिन्दी गाना सिखाना

K.V. Santha
29/08/22

जनवरी

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	आलमारि शनु प्रसाद
Course / Group :	बि.ए / बी.कम / बि.एस.सी
Paper :	I
Name of the Topic	साहित्य की महत्ता
Hours required	6
Learning Objectives	निबंध - अर्थ - परिभाषा - प्रकार, साहित्य की विविध सुखी महत्ता।
Previous Knowledge to be remained	आचार्य महावीर प्रसाद द्विवेदी के व्यक्तित्व
Topic Synopsis	ज्ञान राशी के संचित कोश ही मंत्र नाम साहित्य है। जिस प्रकार शारीरिक विकास के लिए भोजन की आवश्यकता है, उसी प्रकार मानसिक या मन का विकास के लिए साहित्य की आवश्यकता है। साहित्य से मानव जीवन सुंदरमय हो जाता है।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	द्विवेदी जी के व्यक्तित्व तथा कृतित्व
Teaching Aids used	पाठ्य पुस्तक, कंप्यूटर तथा प्रोजेक्टर.
References cited	विकीपीडिया तथा यू ट्यूब वीडियो.
Student Activity Planned after the teaching	साहित्य की महत्ता पाठ का सारांश लिखवाना।
Activity Planed outside the Class room, if any	महावीर प्रसाद द्विवेदी जी की अन्य रचनाओं का संकलन करना.
Any other Activity	छात्राध्ययन गोष्ठी रखना।

परवरी

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	आलपाति श्रीनु प्रसाद
Course / Group :	बि ए / बि कम / बि एस सी
Paper :	I
Name of the Topic	मैत्री
Hours required	6
Learning Objectives	आचार्य रामचंद्र शुक्ल जी के व्यक्तित्व - कृतित्व
Previous Knowledge to be remained	शुक्ल जी की अन्य रचनाएँ
Topic Synopsis	आचार्य रामचन्द्र शुक्ल जी ने प्रस्तुत निबंध में मित्रता की आवश्यकता तथा मित्र बनने के लिए ध्यान देने वाले बातों पर चर्चा की ।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे ।
Additional Inputs	तुलनात्मक अध्ययन
Teaching Aids used	पाठ्य पुस्तक, कंप्यूटर, ऑडियो वीडियो
References cited	शुक्ल जी के बारे में ऑडियो वीडियो
Student Activity Planned after the teaching	मैत्री पाठ का सारांश लिखवाना
Activity Planed outside the Class room, if any	रामचंद्र शुक्ल जी के हिन्दी साहित्य का योगदान पढ़ना
Any other Activity	—

मॉडल

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	डा॰ मनु प्रसाद
Course / Group :	बी॰ए॰ / बी॰काम / बी॰ एस॰ सी॰
Paper :	I
Name of the Topic	कुटिलता
Hours required	8
Learning Objectives	प्रेमचंद जी के व्यक्तित्व - कृतित्व
Previous Knowledge to be remained	प्रेमचंद जी की अन्य रचनाएँ
Topic Synopsis	प्रेमचंद जी ने प्रस्तुत कहानी में प्रमुख रूप से यह दर्शाया है कि आदमी के लिए नेक - नियति अत्यंत आवश्यक है। रहमान अपनी नेक - नियति से कठिन हृदय वाले लाला दीनदयाल को भी बदल देता है।
Examples / Illustrations	न्याय तथा बाघ की कहानी
Additional Inputs	कहानी अर्थ तथा परिभाषा
Teaching Aids used	पाठ्य पुस्तक, पूरक वीडियो।
References cited	विकिपीडिया
Student Activity Planned after the teaching	कुटिलता कहानी का सारांश लिखवाना
Activity Planed outside the Class room, if any	प्रेमचंद जी के अन्य रचनाओं का अध्ययन करना
Any other Activity	निबंध

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	डॉ. अरुण प्रताप
Course / Group :	बी.ए. / बी.एस.सी / बी.एस.सी.
Paper :	+
Name of the Topic	शोधन एक है.
Hours required	8
Learning Objectives	अनेकता में एकता या दर्शन शोधन में अं
Previous Knowledge to be remained	दिनकर जी की अन्य रचनाएं
Topic Synopsis	डॉ. रामधारी सिंह दिनकर जी के द्वारा लिखा गया यह निबंध भारत की महानता का चित्रण है। वास्तव में भारतमें विभिन्न प्रकार की विचारधारा है, पर उन्हीं में भारत की एकता छिपी हुई है। अनेकताओं में कितना का चित्रण ही इस निबंध का उद्देश्य है।
Examples / Illustrations	आवश्यक उदाहरण, प्रस्तुत करेंगे।
Additional Inputs	चिन्तन तथा मनन
Teaching Aids used	पाठ्य पुस्तक तथा पुस्तक सहित.
References cited	विकिपीडिया.
Student Activity Planned after the teaching	भारत एक है निबंध का संक्षेप लिखवाना
Activity Planed outside the Class room, if any	~~दिनकर~~ दिनकर जी की रचनाओं का संकलन करना.
Any other Activity	—

TEACHING PLAN (SYNOPSIS)

जून

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	डा. शंभु प्रसाद
Course / Group :	बी.ए. / बी.कॉम / बी.एस.सी.
Paper :	II
Name of the Topic	संस्कृति और साहित्य का परस्पर संबंध
Hours required	08
Learning Objectives	साहित्य तथा संस्कृति का अर्थ, परिभाषा तथा आपसी संबंध
Previous Knowledge to be remained	रेड्डी जी की अन्य रचनाएँ।
Topic Synopsis	प्रस्तुत निबंध सुंदर रेड्डी जी के 'मेरे विचार' निबंध संग्रह' से लिया गया। साहित्य तथा संस्कृति एक दूसरे पर आश्रित है। भारत की संस्कृति अत्यंत प्राचीन है।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	साहित्य की विविध विधायें
Teaching Aids used	पाठ्य पुस्तक, मल्टीमीडिया तथा कंप्यूटर
References cited	—
Student Activity Planned after the teaching	~~संस्कृति तथा साहित्य के बीच परस्पर संबंध~~ पाठ का सारांश लिखवाना।
Activity Planed outside the Class room, if any	सुंदर रेड्डी जी की अन्य रचनाओं का संकलन करना।
Any other Activity	पद्य-पठन

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	डा. मनु प्रसाद
Course / Group :	बी.ए / बी.एस / बी.एस.सी
Paper :	II
Name of the Topic	एच.आई.वी / एड्स
Hours required	6
Learning Objectives	एच.आई.वी के लक्षण, अर्थ तथा परिभाषा, विकास, रोकथाम
Previous Knowledge to be remained	गुप्त रोग
Topic Synopsis	एच.आई.वी का अर्थ है ह्यूमन-इम्युनो डेफिशियन्सी वॉयरस है, संक्रमण के बाद एक व्यक्ति के इसे व्यक्ति को फैलने होता है, इसका संक्रमण, शरीर में इसका प्रभाव लक्षण तथा रोकथाम के बारे में बतायेंगे।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	अन्य गुप्त रोग
Teaching Aids used	पाठ्य पुस्तक, कंप्यूटर तथा प्रोजेक्टर, इंटरनेट आदि
References cited	संदर्भ ग्रन्थ
Student Activity Planned after the teaching	पाठ का संक्षेप लेखन
Activity Planed outside the Class room, if any	अपने अड़ोस-पड़ोस को एड्स के बारे में जानकारी देना।
Any other Activity	परियोजना कार्य

अजीत

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	हिन्दी
Name of the Lecturer :	आ. भानु प्रसाद
Course / Group :	बी.ए. / बी.कॉम / बी.एस.सी.
Paper :	II
Name of the Topic	परमात्मा का कुत्ता
Hours required	6
Learning Objectives	मोहन राकेश जी के व्यक्तित्व - कृतित्व
Previous Knowledge to be remained	कहानी का अर्थ, परिभाषा तथा प्रकार
Topic Synopsis	प्रस्तुत कहानी में मोहन राकेश जी ने सरकारी दफ्तरों में चलने वाली भ्रष्टाचार का खंडन करते हुए इस कहानी का सृजन किया। एक अधेड़ आदमी कुत्ते की तलाश में निकलता है।
Examples / Illustrations	आवश्यक उदाहरण प्रस्तुत करेंगे।
Additional Inputs	कहानी लिखवाना
Teaching Aids used	पाठ्य पुस्तक, यूट्यूब वीडियो
References cited	विकीपीडिया
Student Activity Planned after the teaching	परमात्मा का कुत्ता कहानी का सारांश लिखवाना
Activity Planed outside the Class room, if any	लेखक के अन्य रचनाओं से सूची बनाना।
Any other Activity	—

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)
2021- 2022

Name of the Lecturer K.V. Nagalakshmi

Department of Mathematics.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

September-2021

Name of the Department / Subject :	mathematics
Name of the Lecturer :	K.V. Naga Lakshmi S.R.R & C.V.R G.D.C (A)
Course / Group :	III M.S.C paper-6
Paper :	paper-6
Name of the Topic	vectorspaces - I
Hours required	10
Learning Objectives	vector spaces.
Previous Knowledge to be reminded	Fields, Rings & Examples based on them
Topic Synopsis	vectorspaces: Let $(F, +, \cdot)$ be a Field. The elements of F will be called as scalars. Let V be a non empty set whose elements will be called vectors. Then V is said to be a vectorspace over the Field F, if 1. There is defined an internal composition in V called addition of vectors
Examples / Illustrations	Rings & Fields explained with Examples
Additional Inputs	vectorspaces explained.
Teaching Aids used	Lecture method white board & marker pen
References cited	Deepthi, S Chand & Vasishtha
Student Activity Planned after the teaching	problems solved, student seminar, Quiz
Activity Planned outside the Class room, if any	Social Service, NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

and denoted by $+$. Also for this composition V is an abelian group

2) There is an external composition in V with F called scalar multiplication and denoted multiplicatively ie $a \cdot \alpha \in V$ for all $a \in F$ and $\alpha \in V$.

3) The two compositions, scalar multiplication and addition of vectors satisfy the following postulates

(i) $a \cdot (\alpha + \beta) = a\alpha + a\beta$

(ii) $(a+b) \cdot \alpha = a \cdot \alpha + b \cdot \alpha$

(iii) $(a \cdot b) \cdot \alpha = a \cdot (b \cdot \alpha) \quad \forall\ a, b \in F,\ \forall \alpha \in V$

(iv) $1\alpha = \alpha \quad \forall\ \alpha \in V$

Examples on vectorspaces.

vectorspace of n-tuples :

General properties of vectorspaces

Th: Theorems based on above properties of the vectorspaces.

vector subspace, Let V be a vectorspace over the Field F and let $W \subseteq V$ Then W is said to be subspace if W itself is a vectorspace.

TEACHING PLAN (SYNOPSIS)

Sep-2021

Name of the Department / Subject :	mathematics
Name of the Lecturer :	K.V. Naga Lakshmi
Course / Group :	III m.p.c paper-5
Paper :	paper-5 Rings-I
Name of the Topic	Definition of Rings, Fields, Divirion Rings.
Hours required	10
Learning Objectives	Rings - I
Previous Knowledge to be reminded	Group Theory, Binary operations.
Topic Synopsis	Let R be a nonempty set and + . be two binary operations on R then (i) (R, +) is an abelian group (ii) (R, ·) is a semigroup (iii) $a\cdot(b+c) = a\cdot b + a\cdot c$ $(a+b)\cdot c = a\cdot c + b\cdot c \quad \forall a,b,c \in R.$
Examples / Illustrations	Groups explained with examples
Additional Inputs	Binary operations.
Teaching Aids used	Lecture method white board & marker pen
References cited	Deepti publications S.Chand & Vasista.
Student Activity Planned after the teaching	Group discussion, student seminar & Quiz
Activity Planned outside the Class room, if any	Social service, NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

properties of Rings

(i) $(a \cdot 0) = 0 \cdot a = 0$

(ii) $a(-b) = (-a)b = -(ab)$

(iii) $(-a) \cdot (-b) = a \cdot b$

(iv) $a \cdot (b - c) = a \cdot b - a \cdot c$

(v) $(b - c) \cdot a = b \cdot a - c \cdot a$

Th: Let R be a Ring and $a, b \in R$. Then

i) $a^m \cdot a^n = a^{m+n} = a^{n+m} = a^n \cdot a^m$

ii) $(a^m)^n = a^{mn}$

Commutative Ring:

A ring R is said to be a commutative if $ab = ba \ \forall a, b \in R$.

Commutative Ring with unity:

A ring R is said to be a ring with problems based on above topics.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

octobes-2021

Name of the Department / Subject :	mathematics
Name of the Lecturer :	K.V. Naga Lakshmi
Course / Group :	III MSCS paper 6
Paper :	paper - 6
Name of the Topic	vectorspaces - I
Hours required	20
Learning Objectives	Linear span
Previous Knowledge to be reminded	Fields, Rings, Groups, with Examples
Topic Synopsis	If W_1, W_2 are two subspaces of a vectorspace $V(F)$. Then $W_1 \cup W_2$ is a subspace of $V(F)$ iff $W_1 \subseteq W_2$ or $W_2 \subseteq W_1$. Linear combination of vectors: Let $V(F)$ be a vectorspace and $\alpha_1, \alpha_2 \ldots \alpha_n \in V$.
Examples / Illustrations	Groups explained with examples.
Additional Inputs	Linear combination of vectors.
Teaching Aids used	Lecture method white board & markers pen
References cited	Deepti, S. Chand & Vasista.
Student Activity Planned after the teaching	Quiz, Group discussion, problems solved
Activity Planned outside the Class room, if any	Social service, NSS & NCC.
Any other Activity	

Scanned with OKEN Scanner

If $a_1, a_2 \ldots a_n \in F$ then $a_1\alpha_1 + a_2\alpha_2 + \ldots + a_n\alpha_n$ is called a linear combination of the vectors $\alpha_1, \alpha_2, \ldots \alpha_n$.

Linear span:

Let $V(F)$ be a vectorspace and S be a non empty subset of V. Then the set of all linear combinations of finite sets of elements of S is called the linear span of S.

It is denoted by $L(S)$

$$L(S) = \{ a_1\alpha_1 + a_2\alpha_2 + \ldots + a_n\alpha_n \mid \alpha_1, \alpha_2 \ldots \alpha_n \in S, \; a_1, a_2 \ldots a_n \in F \text{ for some } n \in N \}$$

Theorem: If S is a non empty subset of a vectorspace $V(F)$, then $L(S) = \langle S \rangle$.

Ex: If S and T are two sets of a vectorspace $V(F)$ then show that $S \subseteq T \Rightarrow L(S) \subseteq L(T)$.

Hint

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

october-2021

Name of the Department / Subject :	mathematics
Name of the Lecturer :	K.V. naga lakshmi
Course / Group :	III mpcs
Paper :	paper - 3
Name of the Topic	Rings - I
Hours required	20
Learning Objectives	Ring, Commutative Ring, Field
Previous Knowledge to be reminded	Fields, Abelian group, cancellation laws
Topic Synopsis	Divirion Ring: A Ring R is said to be a divirion Ring if $R^* = R - \{0\}$ form a group w.r.t multiplication. Integral domain Field: A Commutative divirion Ring is a Field. problems based on above topic
Examples / Illustrations	Commutative Rings explained with examples.
Additional Inputs	Divirion Ring & Field.
Teaching Aids used	destine method white board & marker pen
References cited	Deepti, S. Chand & Vasishtha.
Student Activity Planned after the teaching	problems solved. Quiz, Group discussion
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

Theorems on Integ...

① In the Ring of integers modulo n, $(Z_n, +, \cdot)$ prove that $m \in Z_n$ is a zero divisor $\Leftrightarrow (m, n) > 1$

② prove that the set M of 2×2 matrices over the set of real numbers is a ring w.r.t matrix addition and multiplication.

③ Let R be a Ring. Then

(i) R has no left zero divisors iff $a, b, c \in R$ $a \neq 0$, $ab = ac \Rightarrow b = c$

(ii) R has no right zero divisors iff $a, b, c \in R$ $a \neq 0$, $ba = ca \Rightarrow b = c$

④ A Ring R has no zero divisors iff Cancellation laws hold in R.

problems based on above topic

Exercise problems. Definition of proper & Improper ideals.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

November-2021

ame of the Department / Subject :	mathematics
ame of the Lecturer :	K.V. Naga Lakshmi
ourse / Group :	III mpcs
aper :	paper - 5
lame of the Topic	vectorspaces - II
ours required	20
earning Objectives	Functions, Domain, codomain
revious Knowledge be reminded	vectorspaces - I
Topic Synopsis	If S and T are two subsets of a vectorspace V(F), then show that $L(S \cup T) = L(S) + L(T)$. linearly dependent vectors: Let V(F) be a vectorspace. A finite subset $\{\alpha_1, \alpha_2, \ldots \alpha_n\}$ of V is said to be linearly dependent if $\exists$ scalars
Examples / Illustrations	linearly dependent & Independent of vectors with examples.
Additional Inputs	You tube classes
Teaching Aids used	Digital classes, white board & marker pen
References cited	Deepthi, S. chand & vanitha.
Student Activity Planned after the teaching	problems solved. S. chand & vanitha
Activity Planned outside the Class room, if any	NCC & NSS.
Any other Activity	

Scanned with OKEN Scanner

$a_1, a_2, \ldots a_n \in F$ not all zero scalars s.t

$a_1\alpha_1 + a_2\alpha_2 + \cdots + a_n\alpha_n = 0$.

which is not linearly dependent is called linearly independent of vectors.

& $a_1\alpha_1 + a_2\alpha_2 + \cdots + a_n\alpha_n = 0$

$\Rightarrow a_1 = a_2 = \cdots = a_n = 0$

problems based on linearly dependent and independent of vectors.

Basis of a vectorspace:

A subset of a vectorspace $V(F)$ is said to be a basis of $V(F)$ if

(i) S is a l.I

(ii) $L(S) = V$

Finite dimensional vectorspace:

The vectorspace $V(F)$ is said to be finite dimensional vectorspace if $\exists$ a Finite subset S of V $\ni$ $L(S) = V$.

Theorems on above definition.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

November-2021

Name of the Department / Subject :	mathematics
Name of the Lecturer :	K.V. Naga Lakshmi
Course / Group :	III mpcs
Paper :	paper-5
Name of the Topic	
Hours required	20
Learning Objectives	Integral domain, Ring with zero divisors. Homomorphism Definition of a Bodean Ring.
Previous Knowledge to be reminded	
Topic Synopsis	Integral domain: A commutative ring with unity and with out zero divisors is called an integral domain. If $Z[i] = \{a+ib / a, b \in Z \; i^2 = -1\}$ then show that $Z[i]$ is an integral
Examples / Illustrations	Integral domain, Ring with zero divisors explain
Additional Inputs	Homomorphism, Images, monomorphism
Teaching Aids used	white board & marker pen. ppt.
References cited	Peepthi, S. Chand & vasistha.
Student Activity Planned after the teaching	problems solved, student seminar, quiz.
Activity Planned outside the Class room, if any	Social service, NCC, NSS
Any other Activity	

Scanned with OKEN Scanner

domain w.r.t addition and multiplication of complex numbers

Theorem: A commutative Ring R with unity is an integral domain iff the cancellation laws hold in R.

Nil potent element:

Let R be a

Range of a Homomorphism:

If f is a homomorphism from a Ring into a ring S then $f(R) = \{ f(a) / a \in R \}$ is called range or image of f. It is denoted by Im f.

Theorem: If f is a homomorphism from a ring R into a ring S then Im f is a subring of S.

Cor: Every homomorphic image of a ring is a ring.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

November - 2021

ame of the Department / Subject :	mathematics
ame of the Lecturer :	K.V. naga lakshmi
ourse / Group :	II MSCs
aper :	paper - 3
ame of the Topic	Groups
ours required	20
earning Objectives	Binary operation, Functions
revious Knowledge be reminded	Functions, sets, product of functions
Topic Synopsis	Binary operation: Let A be a non empty set. Any mapping from $A \times A$ into A is called a binary operation. Semi group: Let S be a non empty set and $*$ be a binary operation on S. $a*(b*c) = (a*b)*c$ $\forall$ $a, b, c \in S$.
Examples / Illustrations	Groups with examples.
Additional Inputs	Binary operations.
Teaching Aids used	white board & marker pen, digital classes
References cited	Deepthi, S. Chand, Vasista.
Student Activity Planned after the teaching	problems solved, student seminar, Quiz.
Activity Planned outside the Class room, if any	NCC & NSC
Any other Activity	

Scanned with OKEN Scanner

Group: An algebraic system $(G, \cdot)$ where G is a non empty set and '$\cdot$' is a binary operation on G, is said to be a group if

1. $a \cdot (b \cdot c) = (a \cdot b) \cdot c \quad \forall\ a, b, c \in G$.
2. $\exists\ e \in G \ni a \cdot e = e \cdot a = a \quad \forall\ a \in G$.
3. $a \in G \Rightarrow \exists\ b \in G \ni a \cdot b = b \cdot a = e$.

problems based on Group

Theorem: ① In a group, inverse of any element is unique.

② If G is a group and $a, b \in G$ then the equations $ax = b$ and $ya = b$ have unique solutions in G.

③ If G is an abelian group then show that $(ab)^n = a^n b^n \quad \forall\ a, b \in G$ where $n \in \mathbb{Z}$.

Subgroup: Let G be a group. A subset H of G is said to be a S.G of G if H is a group w.r.t the operation $\cdot$ of G.

Theorems on subgroups. Cosets. Right coset. Left coset. Lagrange's theorem. Theorems on Right coset & left coset. order of an element

TEACHING PLAN (SYNOPSIS)

December - 2021

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	II M.Sc
per :	paper - 3
me of the Topic	subgroups.
urs required	20
arning Objectives	Groups, Binary operations. Normal subgroups
evious Knowledge be reminded	Groups, Abelian groups. Normal subgroups
Topic Synopsis	Th: Normal subgroups: A non empty complex H of a group G is a subgroup of G iff $a, b \in H \Rightarrow ab^{-1} \in H$. Theorems on normal subgroups. ② If H and K are two subgroups of a group G then $H \cap K$ is also a subgroup of G. ③ Let H and K be two subgroups of a
Examples / Illustrations	subgroups with examples.
Additional Inputs	cosets explained.
Teaching Aids used	white board with marker pen
References cited	Deepthi, S. Chand & Vasishta.
Student Activity Planned after the teaching	problems solved, Group discussion, Quiz
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	Guest lecture & Ramanujan's Birthday Celebration

Scanned with OKEN Scanner

group G. Then HK is a subgroup of G iff $HK = KH$.

Cosets:

① Let H be a subgroup of a group G and $a \in G$, then (i) $a \in H \iff Ha = H$

② Let H be a subgroup of a group G and $a, b \in G$ then $a \in Hb$ $\iff Ha = Hb$

③ Let H be a subgroup of a Group G and $a, b \in G$, then

(i) $Ha = Hb \iff ab^{-1} \in H$

Normal subgroups:

A subgroup H of a Group G is said to be a normal subgroup of G if $g \in G$, $h \in H \Rightarrow ghg^{-1} \in H$.

④ If M and N are two normal subgroups of a group G then MN is also a normal subgroup of G.

Theorems on normal subgroups. Homomorphism. Theorems on Homomorphism. Fundamental theorem of Homomorphism. permutations. Cayley's theorem.

TEACHING PLAN (SYNOPSIS)

December - 2021

me of the Department / Subject :	mathematics
me of the Lecturer :	K. V. Naga Lakshmi
urse / Group :	III mpcs
per :	paper - 5
ame of the Topic	Homomorphism.
urs required	20
arning Objectives	Homomorphism, Monomorphism one - one & on - to functions
evious Knowledge be reminded	
Topic Synopsis	Kernel of a Homomorphism: If f is a homomorphism from a ring R into a ring S then $\{a \in R / f(a) = 0\}$ is called Kernel of f. It is denoted by Ker f. Th: If f is a homomorphism from a Ring R into a ring S then Ker f
xamples / lustrations	Homomorphism, Isomorphism explained with E
dditional Inputs	Epimorphism, Automorphism
eaching Aids used	white board, marker pen, Digital classes.
References cited	Deepthi, S. Chand, Vasistha.
Student Activity Planned after the teaching	problems solved, student seminar, quiz
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	Guest lecture & Ramanujan's Birthday Celebration

Scanned with OKEN Scanner

is an ideal of R.

Fundamental theorem of Homomorphism:

If F is an epimorphism from a Ring R onto a ring S then

$R/\ker F \cong S$.

maximal ideal:

Let R be a ring. A proper ideal M of R is said to be a maximal ideal of R if A is an ideal of R, $M \subseteq A \subseteq R$

$\Rightarrow$ either $M = A$ or $A = R$.

prime ideal:

Let R be a ring. An ideal P of R is said to be a prime ideal if $AB \subseteq P$

$\Rightarrow$ either $A \subseteq P$ or $B \subseteq P$

Vector differentiation:

If $\bar{F} = F_1\bar{i} + F_2\bar{j} + F_3\bar{k}$ then

$$\frac{dF}{dt} = \frac{dF_1}{dt}\bar{i} + \frac{dF_2}{dt}\bar{j} + \frac{dF_3}{dt}\bar{k}$$

Angle between two vectors

$$\cos(\bar{a}, \bar{b}) = \frac{\bar{a} \cdot \bar{b}}{|\bar{a}| \cdot |\bar{b}|}$$

Vector Integration

TEACHING PLAN (SYNOPSIS)

December - 2021

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	III M.S.C
per :	paper - 6.
ame of the Topic	Linear transformation
urs required	20
arning Objectives	Linear operators, kernel
evious Knowledge be reminded	Domain, Codomain, Basis
Topic Synopsis	Basis extension theorem: Every linearly independent subset of a Finite dimensional vectorspace V(F) is either a basis of V or it can be extended to form a basis of V. coordinates of a vectorspace:
xamples / lustrations	Basis of a vectorspace with examples.
dditional Inputs	Coordinates of a vectorspace.
eaching Aids used	white board with marker pen, Digital class
References cited	Deepthi, S. chand, Vasista.
Student Activity Planned after the teaching	problems solved, Group discussion, Quiz
Activity Planned outside the Class room, if any	NCC & NSS.
Any other Activity	Guest lecture & Ramanujan's Birthday Celebration

Scanned with OKEN Scanner

Let V(F) be a finite dimensional vectorspace and $B = \{\alpha_1, \alpha_2, \ldots \alpha_n\}$ be an ordered basis for V.

Then $\alpha = a_1\alpha_1 + a_2\alpha_2 + \ldots + a_n\alpha_n$

Here $a_1, a_2, \ldots a_n$ are called coordinates of α.

Linear transformation:

Let U(F) and V(F) be two vectorspaces over the same field F. The function $T: U \to V$ is said to be a linear transformation if

$$T(a\alpha + b\beta) = a\,T(\alpha) + b\,T(\beta)$$

$\forall\, \alpha, \beta \in U$ and $a, b \in F$.

Linear operators:

Let V(F) be a vectorspace. A linear transformation from V into V is called a linear operator on V.

problems on Linear transformation.
Rank and nullity theorem. problems based on above theorem.

TEACHING PLAN (SYNOPSIS)

Jan - 2022.

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	II M.S.G
per :	paper - 3
me of the Topic	Cyclic groups & Rings - I
urs required	20
arning Objectives	Groups, Rings & cancellation laws, groups & abelian groups.
evious Knowledge be reminded	
Topic Synopsis	cyclic groups. A group G is said to be a cyclic group if $G = \langle a \rangle$ for some $a \in G$. The element a is called a generator of G. Theorems on cyclic groups. classification of cyclic groups. Rings. Definition of Rings. Basic properties of a Ring. Commutative Ring.
xamples / ustrations	Cyclic groups explained with examples.
dditional Inputs	Rings, Integral domain, Field.
eaching Aids used	White board with marker pen
References cited	Deepthi, S. Chand & Vasista.
Student Activity Planned after the teaching	problems solved, Quiz, Group discussion.
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

Devisors of zero.

Integral Domain.

nil potent Element.

unit. Theorems on Integral Domain and Field. Skew Field

problems on Integral Domain, Field. and Skew Field.

characteristic of a Ring.

Theorems on characteristic of a Ring.

Greatest common Divisor.

Definition of Associates, prime elements.

Definition of Sub Ring.

Theorems on subRings.

Definition of Ideals.

principal Ideal.

set of all Integers Z is a principal ideal ring R.

Definition of Quotient Ring.

Theorems on Integral domain, Field and Quotient Ring. Ideals. principal Ideal Ring.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Jan-2022

ne of the Department / Subject :	mathematics
ne of the Lecturer :	K.V. Anga Lakshmi
urse / Group :	III M.P.S
per :	paper- 5
me of the Topic	Linear Algebra. Ring theory & vector calculus
urs required	24.
arning Objectives	Volume Integration. Vector Integration Applications
vious Knowledge be reminded	line Integration and surface Integration.
Topic Synopsis	Volume Integration is denoted by $\int_V F\,dV$. If $\bar{F} = F_1\bar{i} + F_2\bar{j} + F_3\bar{k}$ then $\int_V F\,dV = \bar{i}\int_{V_1} F_1\,dV + \bar{j}\int F_2\,dV + \bar{k}\int F_3\,dV$. Exercise problems on volume Integration.
xamples / ustrations	problems explained with line Integration.
dditional Inputs	surface Integration & volume Integration
eaching Aids used	white board with marker pen.
References cited	S. Chand, Vasista & Deepthi
Student Activity Planned after the teaching	Group discussion, Quiz, Seminars.
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

Applications of Vector Integration:

Gauss's Divergence Theorem: If $\bar{F}$ is a differentiable vector point function and S is a closed surface enclosing a region V, then $\int_S \bar{F}.\bar{N}\, ds = \int_V \text{div } F\, dV$, where N is the outward drawn unit normal vector to S

problems based on Gauss Divergence theorem.

Green's theorem in a plane:

Let S be a closed region in the plane enclosed by a curve C. If P and Q are continuous and differentiable scalar functions of x and y in S, then

$$\int_C P\,dx + Q\,dy = \iint_S \left[\frac{\partial Q}{\partial x} - \frac{\partial P}{\partial y}\right] dx\,dy$$, the line integral being taken along the entire boundary C of S → S is on the left as one advances along C.

Stokes theorem: Let S be a surface bounded by a closed non-intersecting curve C.

$$\int_C \bar{F}\cdot dr = \int \text{Curl } \bar{F}\cdot\bar{N}\, ds$$ where N is the

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Jan-2022

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	III M.S.C
per :	paper- 6.
ame of the Topic	linear Algebra.
urs required	20
arning Objectives	Inner productspaces and matrices, Rank
evious Knowledge be reminded	Inverse of a matrix. product of matrices.
Topic Synopsis	matrices, Finding Rank, Eigenvalues & Eigenvectors Inner productspaces. Cayley-Hamilton's theorem. Let V(F) be a vectorspace where F is either the Field or Real numbers. $\langle\ ,\ \rangle : V \times V \to F$ is defined by (i) $\langle \alpha, \beta \rangle = \overline{\langle \beta, \alpha \rangle}$ (ii) $\langle a\alpha + b\beta, \gamma \rangle = a\langle \alpha, \gamma \rangle + b\langle \beta, \gamma \rangle$ (iii) $\langle \alpha, \alpha \rangle \geq 0$ and $\langle \alpha, \alpha \rangle = 0 \Rightarrow \alpha = \overline{0}$ $\forall\ \alpha, \beta, \gamma \in V$ and $a, b \in F$.
xamples / lustrations	Innerproductspaces explained with examples
dditional Inputs	Norm of a vector, Triangle inequality.
eaching Aids used	Digital classes, white board with marker pen
References cited	S. chand, Vasista, Deepthi
Student Activity Planned after the teaching	Quiz, Group discussion, Seminars.
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

Norm or length of a vector

$\frac{\alpha}{\|\alpha\|} = \frac{(a_1, a_2, a_3)}{\sqrt{a_1^2+a_2^2+a_3^2}}$ is called unit vector of α.

Cauchy schwarz's Inequality:

If α, β are two vectors in an Innerproductsp V(F), then $|\langle \alpha, \beta \rangle| \leq \|\alpha\| \cdot \|\beta\|$

If α, β are two vectors in an Innerproductspa V(F), then $|\langle \alpha, \beta \rangle| = \|\alpha\| \cdot \|\beta\|$ iff α and β are linearly dependent

Triangle Inequality:

If α, β are two vectors in an innerproduct space V(F), then $\|\alpha+\beta\| \leq \|\alpha\| + \|\beta\|$

parallelogram law: If α, β are two vectors in an Inner productspace V(F), then

$$\|\alpha+\beta\|^2 + \|\alpha-\beta\|^2 = 2\|\alpha\|^2 + \|\beta\|^2.$$

orthogonality: Let V(F) be an inner productspace and $\alpha, \beta \in V$. then α is said to be orthogonal to β if $\langle \alpha, \beta \rangle = 0$.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS) march - 2022

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Jayalakshmi
urse / Group :	II M.S.C
per :	paper - 4
me of the Topic	Sequences.
urs required	20
arning Objectives	Real numbers.
evious Knowledge be reminded	upper bound, lower bound, l.ub & g.l.b
Topic Synopsis	Sequence: If A is a nonempty set then a function $S: N \to A$ is called a sequence. Range of a sequence: The set of all terms of a sequence is called the range of the sequence. Convergent sequence: A sequence $\{S_n\}$ is said to be converge to a real number l if for each $\epsilon > 0$ $\exists m \in N \ni \lvert S_n - l \rvert < \epsilon$
xamples / ustrations	Convergent sequence, Divergent sequence with exam
dditional Inputs	Divergent sequence.
eaching Aids used	Digital classes, white board with marker pen
eferences cited	S. chand, Deepthi, Vasishtha.
tudent Activity lanned after he teaching	Quiz Group discussion Seminars.
ctivity Planned utside the Class oom, if any	NCC & NSS
ny other Activity	International mathematics day celebrations.

Scanned with OKEN Scanner

$S_n \to l$ as $n \to \infty$

$\lim_{n\to\infty} S_n = l$

Th: Every convergent sequence is bounded

Divergent sequence:

A sequence $\{S_n\}$ is said to diverge to ∞ if for each $k > 0$ $\exists\ m \in N \ni n \geq m$

$\Rightarrow S_n > k$

$S_n \to \infty$ as $n \to \infty$

$\lim_{n\to\infty} S_n = \infty$

Sandwich Theorem:

Cauchy's 1st Theorem on limits:

If $\lim_{n\to\infty} S_n = l$ then $\lim_{n\to\infty} \frac{S_1 + S_2 + \cdots + S_n}{n} = l$

Cauchy's IInd Theorem on limits

If $\{S_n\}$ is a sequence $\ni S_n > 0\ \forall\ n \in N$ and $\lim \frac{S_{n+1}}{S_n} = l$ then $\lim \sqrt[n]{S_n} = l$.

$\lim \frac{S_{n+1}}{S_n} = l$ then $\lim S_n = 0$ if $|l| < 1$

$S_n \to \infty$ as $n \to \infty$ if $l > 1$

monotonic sequences, Cauchy sequence

A sequence (S_n) is said to be monotonically increasing sequence if $S_n \leq S_{n+1}\ \forall n \in N$

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS) March-2022

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V naga lakshmi
urse / Group :	III M.Sc
per :	7
me of the Topic	Numerical Analysis
urs required	20
rning Objectives	Newtons Forward Formula, Backward Formula.
vious Knowledge e reminded	Gauss backward Interpolation, Forward Interpolation
Topic Synopsis	Newton's - Gregory Forward interpolation Formula $y_n = y_0 + u\Delta y_0 + \frac{u(u-1)}{2!}\Delta^2 y_0 + \cdots$ $+ \frac{u(u-1)\cdots(u-n+1)}{n!}\Delta^n y_0$. $u = \frac{x-x_0}{h}$ Newton's - Gregory backward interpolation Formula
amples / ustrations	Bessels Formula explained with examples
dditional Inputs	stirrling difference Formula
eaching Aids used	Digital class, white board with marker pen
eferences cited	S.Chand, Deepthi, Vasista
tudent Activity lanned after he teaching	Quiz, Group discussion, Seminar
ctivity Planned utside the Class oom, if any	NCC & NSS
ny other Activity	International mathematics day celebrations.

Scanned with OKEN Scanner

$$y = y_n + u\nabla y_n + \frac{u(u+1)}{2!}\nabla^2 y_n + \cdots$$

$$+ \frac{u(u+1)\cdots(u+n-1)}{n!}\nabla^n y_n$$

where $u = \frac{x - x_n}{h}$

problems based on above formula.

Gauss forward interpolation

$$y = y_0 + u\Delta y_0 + \frac{u(u-1)}{2!}\Delta^2 y_{-1} + \frac{(u+1)u(u-1)}{3!}\Delta^3 y_{-1}$$

$$+ \frac{(u+1)u(u-1)(u-2)}{4!}\Delta^4 y_{-2} + \cdots$$

Gauss backward interpolation

$$y = y_0 + u\Delta y_{-1} + \frac{(u+1)u}{2!}\Delta^2 y_{-1} + \frac{(u+1)u(u-1)}{3!}\Delta^3$$

$$+ \frac{(u+2)(u+1)u(u-1)}{4!}\Delta^4 y_{-2} + \cdots$$

Stirling's difference formula:

$$y = y_0 + u\left(\frac{\Delta y_0 + \Delta y_{-1}}{2}\right) + \frac{u^2}{2!}\Delta^2 y_{-1} +$$

$$\frac{u(u^2-1)}{3!}\left(\frac{\Delta^3 y_{-1} + \Delta^3 y_{-2}}{2}\right) + \cdots$$

Bessel's Formula:

$$y = \frac{y_0 + y_1}{2} + \left(u - \frac{1}{2}\right)\Delta y_0 + \frac{u(u-1)}{2!}\left(\frac{\Delta^2 y_{-1} + \Delta^2 y_0}{2}\right)$$

$$+ \frac{u\left(u-\frac{1}{2}\right)(u-1)}{3!}\Delta^3 y_{-1} + \cdots$$

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS) march-2021

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	III B.Sc. cluster 8-A2
per :	paper 8-A2
ame of the Topic	Advanced Numerical Analysis
urs required	20
arning Objectives	Curve Fitting.
evious Knowledge be reminded	least square curve fitting procedures.
Topic Synopsis	Fitting a straight line. let $y = a+bx$ The normal equations are $na + b\Sigma x_i = \Sigma y_i$ $a\Sigma x_i + b\Sigma x_i^2 = \Sigma x_i y_i$ power function non linear curve fitting $y = ax^b$ $Y = A + BX$:
xamples / ustrations	Curve Fitting with least square line
dditional Inputs	Fit a polynomial of second degree
eaching Aids used	Digital classes, white board with marker pen
eferences cited	S.Chand, Vasistha, Deepthi
tudent Activity lanned after he teaching	Quiz, student seminar, Group discussio
ctivity Planned utside the Class oom, if any	NCC & NSS
ny other Activity	International mathematics day celebrations.

Scanned with OKEN Scanner

Here $Y = \log y$

where $A = \log a$, $B = b$ and $X = \log x$

Fit a polynomial of the second degree

$$na + b\Sigma x_i + c\Sigma x_i^2 = \Sigma y_i$$
$$a + b\Sigma x_i^2 + c\Sigma x_i^3 = \Sigma x_i y_i$$
$$a\Sigma x_i^2 + b\Sigma x_i^3 + c\Sigma x_i^4 = \Sigma x_i^2 y_i$$

problems based on above Formula.

Exponential Function

$$nA + B\Sigma x_i = \Sigma Y_i$$
$$A\Sigma x_i + B\Sigma x_i^2 = \Sigma x_i Y_i$$

Numerical Integration

Trapezoidal Rule:

$$\int_a^b y\,dx = \frac{h}{2}\left[(y_0 + y_n) + 2(y_1 + y_2 + \cdots + y_{n-1})\right]$$

Simpsons 1/3rd Rule:

$$\int_{x_0}^{x_n} y\,dx = \frac{h}{3}\left[(y_0 + y_n) + 4(y_1 + y_3 + \cdots + y_{n-1}) + 2(y_2 + y_4 + \cdots + y_{n-2})\right]$$

Simpsons 3/8th Rule:

$$\int_{x_0}^{x_n} y\,dx = \frac{3h}{8}\left[(y_0 + y_n) + 3(y_1 + y_2 + y_4 + \cdots + y_{n-1}) + 2(y_3 + y_6 + \cdots + y_{n-2})\right]$$

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

APRIL - 2022

me of the Department / Subject :	mathematics
me of the Lecturer :	K.V. Naga Lakshmi
urse / Group :	II B.Sc M.S.Cs
per :	paper IV
me of the Topic	Series & continuity
urs required	20
rning Objectives	limits
vious Knowledge e reminded	sequences, upper bound & lower bound
Topic Synopsis	Let $\sum u_n$ be a series. If $s_n = u_1 + u_2 + \cdots + u_n$, $\forall n \in N$. then $\{s_n\}$ is called the sequence of partial sums of the series $\sum u_n$. If $\sum u_n$ converges, then $\lim u_n = 0$ If $\lim u_n \neq 0$ then $\sum u_n$ does not converge. Auxiliary series : The series $\sum \frac{1}{n^p}$
mples / strations	continuity & discontinuity of a fn
itional Inputs	Geometrical series explained.
ching Aids used	Digital classes, white board with marker pen
erences cited	S. Chand, Deepthi, Vasista
dent Activity nned after teaching	Quiz, student seminar, Group discussion
ivity Planned side the Class m, if any	NCC & NSS
y other Activity	

is convergent if $p > 1$ and divergent if $p \leq 1$.

Geometrical series:

(i) $\sum_{n=0}^{\infty} r^n$ converges to $\frac{1}{1-r}$ if $0 \leq r < 1$

(ii) $\sum_{n=0}^{\infty} r^n$ diverges if $r \geq 1$

Comparision Test of Ist type

Comparision Test of IInd type

Limit Comparison Test

problems on above tests.

Continuity: Let A be an aggregate and $a \in A$

A function $F: A \to R$ is said to be continuous at a if to each $\epsilon > 0$, $\exists \delta > 0 \to$

$|x-a| < \delta \Rightarrow |F(x) - F(a)| < \epsilon$.

Bores theorem:

If f is continuous on $[a, b]$ then f is bounded on $[a, b]$

Theorems on continuity & problems on Continuity.

TEACHING PLAN (SYNOPSIS)

APRIL-2022

me of the Department / Subject :	mathematics
me of the Lecturer :	K. V. naga lavanya
urse / Group :	III B.Sc M.S.C
per :	paper VII
me of the Topic	Numerical Analysis
urs required	20
arning Objectives	Solution of Algebraic & Transcendental eq
evious Knowledge be reminded	Analytical method & Graphical method.
Topic Synopsis	Bisection method. Find a real root of the equation $f(x) = x^3 - x - 1 = 0$ by using bisection method. False position method or Regular Falsi method Find a root of the equation $x^2 - x - 2 = 0$ in the range $1 < x < 3$ by using false
xamples / ustrations	Newton-Raphson method with examples
dditional Inputs	Ramanujan's method.
eaching Aids used	Digital classes, white board with marker pe
eferences cited	S. Chand, Deepthi & Vasista.
tudent Activity lanned after ne teaching	Quiz, student seminar, Groupdiscu
ctivity Planned utside the Class oom, if any	NCC & NSS

Scanned with OKEN Scanner

position method.

Find the root of the equation $xe^x = \cos x$ using Regular-falsi method correct to 3 decimal places.

Fixed point method or Fixed point Iteration method.

problems on Iteration method.

Newton - Raphson method

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

Ramanujan's method:

$b_1 = 1$

$b_2 = a_1 = a_1 b_1$

$b_3 = a_1^2 + a_2 = a_1 b_2 + a_2 b_1$

. . . .

. . .

$b_n = a_1 b_{n-1} + a_2 b_{n-2} + \cdots + a_{n-1} b_1$

for $n = 2, 3, \ldots$

problems based on above Ramanujan's method.

TEACHING PLAN (SYNOPSIS)

APRIL-2022

e of the Department / Subject :	mathematics
e of the Lecturer :	K.V. Naga Lakshmi
rse / Group :	II B.Sc cluster
er :	paper & N_2.
e of the Topic	Numerical differentiation.
rs required	20
ning Objectives	Newton's Forward interpolation Formula
ious Knowledge e reminded	Newton's Backward interpolation Formula.
Topic Synopsis	$\left(\frac{dy}{dx}\right)_{x=x_0} = \frac{1}{h}\left[\Delta y_0 - \frac{1}{2}\Delta^2 y_0 + \frac{1}{3}\Delta^3 y_0 + \frac{1}{4}\Delta^4 y_0 + \frac{1}{5}\Delta^5 y_0 - \frac{1}{6}\Delta^6 y_0 + \cdots\right]$ $\left(\frac{d^2y}{dx^2}\right)_{x=x_0} = \frac{1}{h^2}\left[\Delta^2 y_0 - \Delta^3 y_0 + \frac{11}{12}\Delta^4 y_0 - \frac{5}{6}\Delta^5 y_0\right.$ Finding derivatives using Newton's
mples / trations	Stirling Formula finding derivatives
ditional Inputs	Newton's divided difference Formula.
eching Aids used	Digital classes, white board & marker pen
ferences cited	S. Chand, Deepthi, Vasishtha
dent Activity anned after e teaching	Quiz student Seminar, Group discussion
tivity Planned tside the Class om, if any	NCC & NSS
y other Activity	

Scanned with OKEN Scanner

Backward difference formula

$$\left(\frac{dy}{dx}\right)_{x=x_n} = \frac{1}{h}\left[\nabla y_n + \frac{1}{2}\nabla^2 y_n + \frac{1}{3}\nabla^3 y_n + \cdots\right]$$

$$\left(\frac{d^2y}{dx^2}\right) = \frac{1}{h^2}\left[\nabla^2 y_n + \nabla^3 y_n + \frac{11}{12}\nabla^4 y_n + \cdots\right]$$

Derivative using stirlings formula

$$\left(\frac{dy}{dx}\right)_{x=x_0} = \frac{1}{h}\left[\frac{\Delta y_0 + \Delta y_{-1}}{2} - \frac{1}{6}\left(\frac{\Delta^3 y_{-1} + \Delta^3 y_{-2}}{2}\right)\right.$$

$$\left(\frac{d^2y}{dx^2}\right)_{x=x_0} = \frac{1}{h^2}\left[\Delta^2 y_{-1} - \frac{1}{12}\Delta^4 y_{-2} + \cdots\right]$$

Derivative using Newton's divided difference Formula.

problems Finding maximum and minimum values of a tabulated Function.

problems on Numerical differentiation.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

may-2022

ne of the Department / Subject :	mathematics
ne of the Lecturer :	K. V. Naga Lakshmi
rse / Group :	III B.Sc M.S.Cs
er :	paper IV
ne of the Topic	Differentiation
rs required	20
rning Objectives	Left hand derivative & Right hand derivative.
vious Knowledge e reminded	Left hand Continuity & Right hand Continuity
Topic Synopsis	$\lim_{x \to a} \frac{f(x) - f(a)}{x - a} = f'(a)$ Darboux's theorem: If $f: [a,b] \to R$ is such that (i) f is derivable on $[a,b]$ (ii) $f'(a)$, $f'(b)$ have opposite signs then $\exists\ c \in (a,b) \ni f'(c) = 0$
amples / strations	Left hand & Right hand derivatives with exam
ditional Inputs	Darboux theorem explained
aching Aids used	Digital classes, white board & marker pen
ferences cited	S. chand Vasista, Deepthi publications.
udent Activity anned after e teaching	Quiz, student seminar, Group discussion
tivity Planned tside the Class om, if any	NCC & NSS

Scanned with OKEN Scanner

Rolle's theorem

If $f: [a,b] \to R$ is a function &

(i) f is continuous on $[a,b]$

(ii) f is derivable

(iii) $f(a) = f(b)$ then there exists $c \in (a,b)$

s.t $f'(c) = 0$.

Lagrange's mean values theorem or mean value theorem:

If a function $f: [a,b] \to R$ is

i) continuous on $[a,b]$

ii) derivable on (a,b) $\Rightarrow$

$$f'(c) = \frac{f(b) - f(a)}{b-a}$$

Cauchy's mean value theorem:

If $f: [a,b] \to R$, $g: [a,b] \to R$ $\Rightarrow$

(i) f, g are continuous on $[a,b]$

(ii) f, g are derivable on (a,b)

& (iii) $g'(x) \neq 0 \quad \forall x \in (a,b)$ then $\exists$

$c \in (a,b)$ $\Rightarrow$ $\frac{f(b) - f(a)}{g(b) - g(a)} = \frac{f'(c)}{g'(c)}$

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

may - 2022

ne of the Department / Subject :	mathematics
ne of the Lecturer :	K.V. Naga Lakshmi
rse / Group :	III B.Sc M.S.Cs.
er :	paper VII
ne of the Topic	Interpolation - I
rs required	20
ming Objectives	Forward differences, Backward differences.
vious Knowledge e reminded	Errors in polynomial interpolation.
Topic Synopsis	$\Delta f(x) = f(x+h) - f(x)$ $\nabla f(x) = f(x) - f(x-h)$ $E f(x) = f(x+h)$ $E^m \cdot E^n = E^{m+n}$ $\Delta = E - 1$ $\nabla = 1 - E^{-1}$
mples / strations	Forward, Backward difference Formula explained with examples.
ditional Inputs	Finding missing terms
ching Aids used	Digital classes, white board & marker pen
ferences cited	S.chand, Vasista, Deepthi publications.
dent Activity nned after teaching	Quiz, student seminar, Group discussion
tivity Planned tside the Class om, if any	NCC & NSS.
y other Activity	

Scanned with OKEN Scanner

Rolle's theorem:

If $f: [a,b] \to R$ is a function s.t

(i) f is continuous on $[a,b]$

(ii) f is derivable

(iii) $f(a) = f(b)$ then there exists $c \in (a,b)$

s.t $f'(c) = 0$.

Lagrange's mean values theorem or 1st mean value theorem:

If a function $f: [a,b] \to R$ is

i) continuous on $[a,b]$

ii) derivable on (a,b) s.t

$$f'(c) = \frac{f(b) - f(a)}{b-a}$$

Cauchy's mean value theorem:

If $f: [a,b] \to R$, $g: [a,b] \to R$ s.t

(i) f, g are continuous on $[a,b]$

(ii) f, g are derivable on (a,b)

& (iii) $g'(c) \neq 0 \ \forall \ x \in (a,b)$ then $\exists$

$c \in (a,b)$ s.t $\frac{f(b) - f(a)}{g(b) - g(a)} = \frac{f'(c)}{g'(c)}$

Hint

TEACHING PLAN (SYNOPSIS)

may - 2022

ne of the Department / Subject :	mathematics
ne of the Lecturer :	K.V. Naga Lakshmi
rse / Group :	III B.Sc M.S.Cs.
er :	paper VII
ne of the Topic	Interpolation - I
rs required	20
rning Objectives	Forward differences, Backward differences.
vious Knowledge e reminded	Errors in polynomial interpolation.
Topic Synopsis	$\Delta f(x) = f(x+h) - f(x)$ $\nabla f(x) = f(x) - f(x-h)$. $E f(x) = f(x+h)$ $E^m \cdot E^n = E^{m+n}$ $\Delta = E - 1$ $\nabla = 1 - E^{-1}$
amples / strations	Forward, Backward difference Formula explained with examples.
ditional Inputs	Finding missing terms
aching Aids used	Digital class, white board & marker pen
eferences cited	S. Chand, Vasista, Deepthi publications.
udent Activity anned after e teaching	Quiz, Student seminar, Group discussion
tivity Planned itside the Class om, if any	NCC & NSS.
ny other Activity	

Scanned with OKEN Scanner

Rolles

$E\nabla = \Delta$

$\Delta - \nabla =$ $\Delta\nabla$

If

(i) $\delta = E^{1/2} - E^{-1/2}$

(ii) $\mu = \frac{1}{2}(E^{1/2} + E^{-1/2})$

(iii) $\delta = E^{-1/2}\Delta = \Delta E^{-1/2}$.

$\Delta\nabla = \delta^2$

Lag

$\mu^2 = 1 + \frac{1}{4}\delta^2$

mea

$E^{-1/2} = \mu - \frac{1}{2}\delta$.

If

$\mu\delta = \frac{1}{2}(\Delta + \nabla)$

i)

$= \frac{1}{2}\Delta E^{-1} + \frac{1}{2}\Delta$

ii)

Evaluate i) $\Delta \log x$ (ii) $\Delta \tan^{-1} x$

(iii) $\Delta (a + \cos x)$

Cal

Evaluate (i) $\Delta^2 (3e^x)$

If

(ii) $\Delta^2 (a\, b^{cx})$

(i)

(iii) $\Delta^2 \cos 2x$.

(ii)

Differences of a Polynomial

&

Finding missing terms

Kut

TEACHING PLAN (SYNOPSIS)

may - 2022.

ne of the Department / Subject :	mathematics
ne of the Lecturer :	K.V. Naga Lakshmi
rse / Group :	III B.Sc
er :	& A_2
ne of the Topic	Advanced Numerical Analysis
rs required	20
rning Objectives	Solutions of linear system of equations.
vious Knowledge e reminded	Inversion method, CRAMER'S Rule
Topic Synopsis	matrix Inversion method: $AX = B$ $A^{-1} = \frac{1}{\lvert A \rvert}$ Adj A. Then $X = A^{-1}B$. CRAMER'S Rule: $x = \frac{\Delta_1}{\Delta}$ $y = \frac{\Delta_2}{\Delta}$ $z = \frac{\Delta_3}{\Delta}$
amples / strations	LU decomposition method explained with example
ditional Inputs	Gauss Jordan method, Gauss elimination method
aching Aids used	Digital classes, white board & markers pen
ferences cited	S.Chand, Vasistha, Deepthi publications.
dent Activity anned after e teaching	Quiz, student seminar, Group discussion
tivity Planned tside the Class om, if any	NCC & NSS
y other Activity	

Scanned with OKEN Scanner

Gauss Elimination method:

Gauss - Jordan method

$$\begin{bmatrix} a_{11} & a_{21} & a_{31} & b_1 \\ a_{12} & a_{22} & a_{32} & b_2 \\ a_{13} & a_{23} & a_{33} & b_3 \end{bmatrix}$$

It can be reduced to $\begin{bmatrix} 1 & 0 & 0 & \alpha \\ 0 & 1 & 0 & \beta \\ 0 & 0 & 1 & \gamma \end{bmatrix}$

LU decomposition method:

$$AX = B$$

$$A = LU$$

$$LY = B$$

$$UX = Y$$

Gauss - Jacobi method

Exercise problems

Gauss - Seidel method

$$a_{11}x_1 + a_{12}x_2 + \cdots + a_{1n}x_n$$

$$a_{21}x_1 + a_{22}x_2 + \cdots + a_{2n}x_n$$

$$\cdots \quad \cdots$$

$$\cdots \quad \cdots$$

$$a_{n1}x_1 + a_{n2}x_2 + \cdots + a_{nn}x_n$$

Exercise problems on Gauss - Jacobi, Gauss - Seidel method.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

June 2022

e of the Department / Subject :	Mathematics
e of the Lecturer :	K. V. Naga Lakshmi
rse / Group :	II B.Sc
er :	IV
e of the Topic	Real Analysis
s required	20
ning Objectives	Integration.
ious Knowledge e reminded	$U(P,f)$, $L(P,f)$ $\int_a^b f(x)\,dx$ $\int_a^b f(x)\,dx$
Topic Synopsis	$U(P,f) = \sum_{r=1}^{n} M_r \delta_r$ $L(P,f) = \sum_{r=1}^{n} m_r \delta_r$. $w(P,f) = U(P,f) - L(P,f)$ $\int_a^b f(x)\,dx = \sup\{L(P,f) / P \in \mathcal{P}[a,b]\}$
mples / trations	Darboux theorem explained
itional Inputs	Necessary & sufficient condition for R-Integrab
ching Aids used	Digital classes, white board & marker pen
erences cited	S. chand, Vasistha, Deepthi publications.
dent Activity nned after teaching	Quiz, student seminar, Group discussion
tivity Planned tside the Class om, if any	NCC & NSS
y other Activity	

Scanned with OKEN Scanner

$$\overline{\int_a^b} f(x)\,dx = \inf\{U(P,f) / P \in \phi[a,b]\}$$

$$\therefore \overline{\int_a^b} f(x)\,dx = \overline{\int_a^b} f(x)\,dx = \int_a^b f(x)\,dx$$

Darboux theorem:

$$U(P,f) < \int_a^b f(x)\,dx + \epsilon$$

$$L(P,f) > \int_a^b f(x)\,dx - \epsilon \quad \text{for each}$$

$P \in \phi[a,b]$ with $\|P\| < \delta$.

Th: If $f \in R[a,b]$ and m, n are the infimum and supremum of f on $[a,b]$ then $m(b-a) \le \int_a^b f(x)\,dx \le n(b-a)$

Necessary and sufficient condition for R-integrable.

Th: If f is continuous on $[a,b]$ then f is R-integrable on $[a,b]$

Hint

TEACHING PLAN (SYNOPSIS)

June-2022

e of the Department / Subject :	mathematics
e of the Lecturer :	K. V. Naga Lakshmi
se / Group :	III B.Sc
er :	VII
e of the Topic	Numerical Analysis
s required	20
ning Objectives	Errors in numerical computations.
ious Knowledge e reminded	Absolute Error, Relative Error & percentage error.
Topic Synopsis	Absolute Error $E_A = \lvert X - x \rvert$ limiting Error Δx $E_A = \lvert X - x \rvert \leq \Delta x$. $x - \Delta x \leq X \leq x + \Delta x$.
amples / strations	Errors explained with examples
ditional Inputs	Absolute error, relative error explained.
aching Aids used	Digital classes, white board & marker pen
ferences cited	Schand, Vasishtha, Deepthi publications.
udent Activity anned after e teaching	Quiz, student seminar, Group discussion.
tivity Planned itside the Class om, if any	NCC & NSS
ny other Activity	

Scanned with OKEN Scanner

Relative Error:

$$E_R = \delta = \frac{E_A}{|X|}$$

Percentage Error

$$E_p = E_R \times 100$$

General Error Formula

$$E_R = \frac{\Delta u}{u} = \frac{\partial u}{\partial x_1}\Delta x_1 + \frac{\partial u}{\partial x_2}\Delta x_2 + \cdots + \frac{\partial u}{\partial x_n}\Delta x_n$$

Applications of Errors to the Fundamental operations of Arithmetic

Errors and their computations.

Rounding off Numbers.

Significant digits.

numbers and their accuracy

$$E = \Delta = X - x.$$

Errors in a Series Approximation

$$f(x_{i+1}) = f(x_i) + h f'(x_i) + \frac{h^2}{2} f''(x_i) + \frac{h^n}{n!} f^n(x_i) + O(h^{n+1})$$

TEACHING PLAN (SYNOPSIS)

June-2022

ame of the Department / Subject :	mathematics
ame of the Lecturer :	K.V. Naga Lakshmi
ourse / Group :	III B.Sc
aper :	8.2
ame of the Topic	Advanced Numerical Analysis
ours required	20
earning Objectives	Numerical solution of ordinary Differential
revious Knowledge be reminded	Taylor series method
Topic Synopsis	$y(x) = 1 + x y_0' + \frac{x^2}{2} y_0'' + \frac{x^3}{3!} y_0''' + \frac{x^4}{4!} y_0^{iv} + \frac{x^5}{5!} y_0^{v} + \cdots$ picards method : $y^{(n)} = y_0 + \int_{x_0}^{x} F(x, y^{(n-1)}) \, dx$ with $y^0 = y_0$
Examples / Illustrations	Taylor series method explained with examples
Additional Inputs	R-K method, milne's method.
Teaching Aids used	Digital classes, white board & marker pen
References cited	S. Chand, Vasistha, Deepthi publications.
Student Activity Planned after the teaching	Quiz, student seminar, Group discussion
Activity Planned outside the Class room, if any	NCC & NSS
Any other Activity	

Scanned with OKEN Scanner

$$y_{n+1} = y_n + h f(x_n, y_n)$$

for $n = 0, 1, 2, \ldots$

modified Euler's method:

Runge - kutta method:

$$K_1 = h f(x_0, y_0)$$

$$K_2 = h f\left(x_0 + \frac{h}{2}, y_0 + \frac{K_1}{2}\right)$$

$$K_3 = h f\left(x_0 + \frac{h}{2}, y_0 + \frac{K_2}{2}\right)$$

$$K_4 = h f(x_0 + h, y_0 + K_3)$$

$$K = \frac{1}{6}\left[K_1 + 2(K_2 + K_3) + K_4\right]$$

milne's method:

$$f(x, y) = f_0 + n \Delta f_0 + \frac{n(n-1)}{2} \Delta^2 f_0 + \ldots$$

Here $f_0 = f(x_0, y_0)$

$f_1 = f(x_0 + h, y_1)$

$f_2 = f(x_0 + 2h, y_2)$

$f_3 = f(x_0 + 3h, y_3)$

Scanned with OKEN Scanner

ॐ

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)
2021- 2022

Name of the Lecturer डा॰ उपद्रष्टा वेङ्कटरमणमूर्तिः

Department of संस्कृतम

Dr. U.V. RAMANA MURTHY
LECTURER IN SANSKRIT

नवम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा.. उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम् बि.ए ; बि.काम् ; बि.यस्.सि
Paper :	III
Name of the Topic	वसिष्ठाश्रमगमनम्
Hours required	6
Learning Objectives	कालिदासस्य काव्यनाटकादीनि, तथैव रघुवंशसारांशः
Previous Knowledge to be reminded	कालिदासस्य राष्ट्रीयता, व्यक्तित्वं च
Topic Synopsis	कविकुलगुरुः, दीपशिखा कालिदासः संस्कृत-भाषायां खण्डकाव्यद्वयं (मेघसन्देशः, ऋतुसंहारः), महाकाव्यद्वयं (रघुवंशम्, कुमारसम्भवम्), रूपकत्रयम् (अभिज्ञान शाकुन्तलम्, विक्रमोर्वशीयम्, मालविकाग्निमित्रम्) च व्यरचयत्। रघुवंशमहाकाव्ये दिलीपं तः आरभ्य अग्निवर्णपर्यन्तं त्रयोविंशति राज्ञां चरितं वर्णितवान्। सन्तानरहितः दिलीपः स्व पत्न्या सुदक्षिणया सह स्व कुलगुरोः वसिष्ठाश्रमं प्रति गमन समये – अद्भुतं वर्णनं कृतमस्ति कालिदासेन
Examples / Illustrations	आवश्यकानि उदाहरणानिं प्रस्तुतीकरणम्
Additional Inputs	प्रकृति सम्बन्धानि अन्यानि काव्यनाटकादीनि
Teaching Aids used	संगणकम्, कृष्णफलकम्
References cited	यु ट्युब् / विकीपीडिया द्वारा
Student Activity Planned after the teaching	वसिष्ठाश्रमगमनम् पाठस्य सारांशः
Activity Planned outside the Class room, if any	कालिदासस्य अन्य रचनानां सङ्ग्रहणम्
Any other Activity	संस्कृत श्लोकशिक्षणम्

दिसम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम् बि.ए/बि.काम्/बि.यस्.सि
Paper :	III
Name of the Topic	संस्कृतव्याकरणम् — शब्दाः - अलङ्काराः
Hours required	6
Learning Objectives	पाठ्यपुस्तके विद्यमानानि
Previous Knowledge to be reminded	वाक्यनिर्माणसामर्थ्यम् / भिन्नभिन्न अलङ्काराणां ज्ञानम्
Topic Synopsis	हलन्तशब्दाः — पुंलिङ्ग, स्त्रीलिङ्ग, नपुंसकलिङ्ग सप्तविभक्तयः / प्रथमाविभक्तितः सप्तमीविभक्तिपर्यन् एकवचनम्, द्विवचनम्, बहुवचनम् च / उपमालङ्कारः - अनन्वयालङ्कारः दृष्टान्तालङ्कारः - उत्प्रेक्षालङ्कारः अर्थान्तरन्यासालङ्कारः - दीपकालङ्कारः अलङ्कारस्य लक्षणम् — सोदाहरणं पूर्वकं च
Examples / Illustrations	आवश्यकानां शब्दानाम् प्रस्तुतीकरणम्
Additional Inputs	एतेषां सम्बद्धानां शब्दानां तथैव अलङ्काराणां च शिक्षणम्
Teaching Aids used	सङ्गणकम्, कृष्णफलकम्
References cited	यूट्यूब, विकीपीडिया द्वारा
Student Activity Planned after the teaching	शब्दानां रटनम् - ~~कण्ठ~~ कण्ठस्थीकरणम् अलङ्काराणां श्लोकानां च लेखनम् च
Activity Planned outside the Class room, if any	अन्य सम्बद्धानां शब्दानां ज्ञापनम् अलङ्काराणाम् उदाहरणानि सूचयन् पाठनम्
Any other Activity	अलङ्काराणां लक्षणश्लोकानां कण्ठस्थीकरणम्

K.V. Sastha 29/8/22

2022
जनवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयं सत्रम्
Paper :	III
Name of the Topic	शिष्यानुशासनम्
Hours required	6
Learning Objectives	तैतिरीयोपनिषद् - अरण्यकाङ्गः - शिक्षावल्ली
Previous Knowledge to be reminded	दशोपनिषदां सुप्रसिद्धता - प्राधान्यं च
Topic Synopsis	गुरुकुले विद्याभ्यासस्समनन्तरं गृहं प्रति गच्छतः शिष्याणां प्रति गुरुः एवमुपदिशति - सत्यं वद - धर्मं चर - मातृदेवो भव - पितृदेवो भव - आचार्यदेवो भव - अतिथिदेवो भव - स्वाध्यायात् न प्रमदितव्यम् - धर्मान्न प्रमदितव्यम् - कुशलान्न प्रमदितव्यम् - भूत्यै न प्रमदितव्यम् - सत्यान्न प्रमदितव्यम् - देवपितृकार्यभ्यां न प्रमदितव्यम् - स्वाध्यायप्रवचनाभ्यां न प्रमदितव्यम् ---- इत्यादि।
Examples / Illustrations	छात्रेभ्यः उपयुज्यमानानि आवश्यकानि भिन्न भिन्न उदाहरणानि
Additional Inputs	एकैकस्य उपदेशस्य विषये नैकान्युदाहरणानि दत्त्वा प्रेरणोत्पादनम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया द्वारा
Student Activity Planned after the teaching	शिष्यानुशासनम् विषयस्य सारांशः
Activity Planned outside the Class room, if any	उपनिषदां मुख्योद्देशः, प्रयोजनं च
Any other Activity	उपनिषद्वाक्यानां कण्ठस्थीकरणम्

2022
जनवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	आर्षपादुकाभिषेकः
Hours required	6
Learning Objectives	वाल्मीकिमहर्षेः श्रीमद्रामायणम्
Previous Knowledge to be reminded	वाल्मीकिमहर्षेः, रचना, शैली, -आदिकविः
Topic Synopsis	आदिकवि बिरुदाञ्चितः श्रीमद्वाल्मीकि महर्षिः आदिकाव्यं रामायणं व्यरचयत। बाल-अयोध्य-अरण्य-किष्किन्ध-सुन्दर-युद्ध-उत्तर काण्डाः सप्त। चतुर्विंशति सहस्रं श्लोकाः। आरम्भे विद्यमानाः शतं श्लोकाः बालरामायणम् अथवा सङ्क्षेपरामायणमिति व्यवह्रियते।
Examples / Illustrations	त्रेतायुगस्य वैशिष्ट्यम्। रामकथा इतिवृत्तम्
Additional Inputs	वाल्मीकेः प्रभावान्नृगुणं शताधिकाः कवयः अद्यापि रामायणानि लिखन्तीति अहो महत्।
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब् - विकीपीडिया द्वारा
Student Activity Planned after the teaching	रामचन्द्रस्य आदर्शगुणाः
Activity Planned outside the Class room, if any	रामायणे विद्यमानानां प्रसिद्धाः गुणाः
Any other Activity	प्रसिद्धानां श्लोकानां कण्ठस्थीकरणम्

(फरवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीय सत्रम् / बि॰ए / बि॰काम् / बि॰ यस॰ सि
Paper :	III
Name of the Topic	संस्कृत साहित्येतिहासः / प्रत्ययाः
Hours required	6
Learning Objectives	भिन्न भिन्न कवीनां विषयः / षड् प्रत्ययाः
Previous Knowledge to be reminded	वाक्य निर्माणम् / कवीनां विषये ज्ञानम्
Topic Synopsis	पाणिनिः - अष्टाध्यायी कौटिल्यः - अर्थशास्त्रम् शङ्कराचार्यः - जगन्नाथ पण्डितरायः कृत्प्रत्ययाः - क्त्वा ल्यप् तुमुन् क्त क्तवतु तव्य शतृ शानच्
Examples / Illustrations	आवश्यकानामुदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	अन्येषामुदाहरणानां कथनमभ्यासं च
Teaching Aids used	संगणकम् - कृष्णफलकम्
References cited	यूट्यूब् - विकीपीडिया
Student Activity Planned after the teaching	कवीनां जीवनशैली - प्रत्यय प्रयोगः
Activity Planned outside the Class room, if any	कवीनां सन्देशाः तेषां काव्यानां पठनम्
Any other Activity	कवीनां, काव्यानां च विषये वर्गीकरणम्

फिब्रवरि

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपदेष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	यक्षप्रश्नाः
Hours required	6
Learning Objectives	व्यासमहर्षेः कृतीः / वेदविभाजनम् / महाभारतम्
Previous Knowledge to be reminded	वेदव्यासमहर्षेः जगद्गुरुत्वम्
Topic Synopsis	पराशरः — सत्यवती-पुत्रः पाराशरः बादरायणः - कृष्णद्वैपायनः - जगद्गुरुः / इतिहासः - महाभारतम् — अष्टादशपर्वाणि एकलक्षं श्लोकाः / ~~xxx~~ अधर्मपरायणानां कौरवाणाम् उपरि धर्मपरायणानां पाण्डवानां विजयः / परोपकारः पुण्याय पापाय परिपीडनम् /
Examples / Illustrations	आवश्यकानाम् उदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	महाभारताधारेण रचिताः भिन्नाः ग्रन्थाः, रचितानि अनेकानि नाटकानि /
Teaching Aids used	सङ्गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	कवीनां जीवनशैली — सुभाषितानि
Activity Planned outside the Class room, if any	संस्कृतसाहित्ये पर्यावरणपरिरक्षणम्
Any other Activity	सुभाषितानां कण्ठस्थीकरणम् / सम्भाषणम्

मार्च

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	मेवाडराज्यस्थापनम्
Hours required	6
Learning Objectives	श्रीमत्प्रतापराणायणमहाकाव्यम्
Previous Knowledge to be reminded	ओमेटिपरीक्षित शर्मणां देशभक्तिः। संस्कृतसेवा
Topic Synopsis	राजस्थान् वीरभूमिः। महम्मदीयानाम् आक्रमणम् महाराणाप्रतापसिंहः। साहसम् त्यागः। मेवाडराज्यस्थापनार्थं सोदरद्वयस्य साहसोपेतं कार्यम्। गृहं गृहं प्रति गमनम्। प्रजासु देशभक्ति-पूरणम्। शत्रुभिः सार्धं युद्धकरणम्। विजय-प्राप्तिः। मेवाडराज्यस्थापनम्।
Examples / Illustrations	छात्रेभ्यः आवश्यकानाम् उदाहरणानां कथनम्।
Additional Inputs	विदेशीयानामाक्रमणकाले भारतीयवीरैः कृतः त्यागः।
Teaching Aids used	सङ्गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	देशधर्मसंस्कृतीनां रक्षणार्थं जीवितसमर्पितानाम् नैकानां जीवनगाथाः।
Activity Planned outside the Class room, if any	असेतुभारतम् — वीरभूमिदर्शनम्।
Any other Activity	धीराणां, वीराणां जीवनाध्ययनम्।

एप्रियल

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	प्रथमसत्रम्
Paper :	I
Name of the Topic	व्याकरणम्
Hours required	6
Learning Objectives	पाणिनिमहर्षेः अष्टाध्यायी -
Previous Knowledge to be reminded	अक्षराणाम् उत्पत्तिः। माहेश्वरसूत्राणि - वर्णाः - पदानि
Topic Synopsis	शब्दाः — अजन्त पुंलिङ्ग - स्त्रीलिङ्ग - नपुंसकलिङ्ग शब्दाः धातवः — परस्मैपदि, आत्मनेपदि धातवः लट् - लङ् - लोट् - विधिलिङ् - लृट् सन्धयः — अच् सन्धयः सवर्णदीर्घ / गुण / यणादेश / वृद्धि समासाः — अव्ययीभाव / पूर्वरूप सन्धयः तत्पुरुष समासः, कर्मधारय समासः द्विगु समासः - द्वन्द्व समासः
Examples / Illustrations	आवश्यकानां शब्दानां, धातूनां, सन्धीनां, समासानां च कथनम्।
Additional Inputs	सरलभाषया व्याकरणांशानां बोधनम्
Teaching Aids used	श्रव्यकम् — दृश्यफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	भिन्नभिन्न वाक्यनिर्माणार्थं शब्दानां, धातूनां च उत्तमतया अभ्यासः।
Activity Planned outside the Class room, if any	प्रकृतिरक्षणम् - पर्यावरणपरिरक्षणम्
Any other Activity	व्याकरणांशानां कण्ठस्थीकरणम् - लेखनं च।

जून

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपदृष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II
Name of the Topic	इन्दुमती स्वयंवरः — शिष्येभ्यो दीक्षाप्रदानम्
Hours required	6
Learning Objectives	महाकविः — कविकुलगुरुः — कालिदासः
Previous Knowledge to be reminded	रघुवंशमहाकाव्यम्
Topic Synopsis	कविकुलगुरुः — दीपशिखा कालिदासः महाकाव्यद्वयम् — रघुवंशम् — कुमारसम्भवम् खण्डकाव्यद्वयम् — ऋतुसंहारः — मेघसन्देशः रूपकत्रयम् — अभिज्ञानशाकुन्तलम् — मालविकाग्निमित्रम् — विक्रमोर्वशीयम् अजमहाराजः — विदर्भराजसोदरी इन्दुमती सखी — इन्दुमत्याः सुनन्दा अज इन्दुमत्योः विवाहः
Examples / Illustrations	राष्ट्रकवेः कालिदासस्य वैशिष्ट्यम्
Additional Inputs	सभायां कथम् उपवेष्टव्यम्? कथं व्यवहर्तव्यम्? कथं भाषणं करणीयम्? इत्यादयः अनेकविषयाः
Teaching Aids used	श्यामपटकम् — वृक्षफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	कविकुलगुरुः कालिदासः राष्ट्रियकविः
Activity Planned outside the Class room, if any	कालिदासस्य वैशिष्ट्यम् — भिन्नभिन्नविषयाः
Any other Activity	अनुष्टुप् वृत्तम् — त्रयोदश श्लोकाः

जुलै

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम् / बिए / बिकाम / बि.यस.सि
Paper :	II गङ्गावतरणम् - वन्दे काश्मीरभारतम्
Name of the Topic	गङ्गावतरणम् - वन्दे काश्मीरभारतम्
Hours required	6 2
Learning Objectives	भोजस्य चम्पूरामायणम् / काश्मीरम् - डा॥ द्युलिपाल
Previous Knowledge to be reminded	भोजमहाराजस्य वैशिष्ट्यम् / अखण्डभारतम्
Topic Synopsis	चम्पूरामायणम् / सगरः - अश्वमेधयागः - अश्वापहरणम् - पुत्राणां कपिलमहर्षेः नेत्राग्निना भस्मीकरणम् - गङ्गा - स्वर्गलोकात् भूलोकः, भूलोकात् पातालः, भगीरथयत्नः - तपः - गङ्गावतरणम् - भागीरथी - वन्दे काश्मीरभारतम् - डा॥ द्युलिपाल रामकृष्णमहोदयः - सुन्दरमयं काश्मीरम् - भारतमातुः मुकुटायमानम् - जम्मू - काश्मीरम् - लद्दाखः - राजा हरिसिंहः - स्वतन्त्रभारतम् - सर्वासां संस्थानां विलीनम् - अखण्डभारतम् /
Examples / Illustrations	आवश्यकानाम् उदाहरणानां प्रस्तुतीकरणम्
Additional Inputs	अखण्डभारत / पुण्यभूमिभारत चित्रम् ॥
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	संस्थानानि / काश्मीरप्रदेशस्य विशेषाः
Activity Planned outside the Class room, if any	अन्यरामायणानां संङ्कलनम् / भारतस्य मानचित्रम्
Any other Activity	अखण्डभारतस्य भौगोलिकस्वरूपम्

अगस्त

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II अवन्तीसुन्दरीकथा - चारुदत्तचरितम् ~~व्याकरणम्~~
Name of the Topic	गद्यभागः - अवन्तीसुन्दरीकथा - चारुदत्तचरितम्
Hours required	6 . 6
Learning Objectives	दण्डि महाकवेः - दशकुमारचरितम्
Previous Knowledge to be reminded	दण्डिनः पदलालित्यम्
Topic Synopsis	मगधराजः - राजहंसः - मित्रद्वयम् - त्रयः मन्त्रिणः मालवराजः मानसारः - आक्रमणम् - राजहंसस्य पलायनम् वने वासः - राजवाहन जननम् - दशकुमाराणां जननम् अत्यन्तरमणीयवर्णनम् - राजवाहनस्य, स्वमित्रैः सह भिन्न भिन्न सन्दर्भेषु प्रवृत्ताः विषयाः। चारुदत्त चरितम् - भासनाटकचक्रम् - महालिङ्ग-शास्त्री ब्राह्मणः, दरिद्रः - गणिका वसन्तसेना - परस्परानुरागः राजश्यालकः शकारः - मैत्रं मैत्रेयः - परिचारिका रदनिका परिचारिका मदनिका - ~~शर्व~~ वसन्तसेनायाः आभरणरक्षणम् धैर्यम् - विपर्यया रत्नावलीदानम् - चारुदत्तस्य सौशील्यम्।
Examples / Illustrations	मानवजीवने आवश्यकानां शीलादीनां गुणानां कथनम् दण्डिमहाकवेः ललितपदानां निर्मितिः।
Additional Inputs	प्राचीनकाले एव आधुनिकविषयाणां कथनं, पात्रचित्रणम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम् - पाठ्यपुस्तकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	भासमहाकविः - नाटककर्तृषु सर्वप्रथमः दण्डिमहाकविः - ग्रन्थत्रयम्
Activity Planned Outside the Class Room, if any	भासमहाकवेः नाटकरचनाकौशल्यम्। नाटकनियमाः
Any other Activity	दशकुमारचरितम् - आदर्शगुणाः - सौशील्यादि गुणाः चारुदत्तचरितम् -

TEACHING PLAN (SYNOPSIS)

सेप्टेम्बर

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	द्वितीयसत्रम्
Paper :	II
Name of the Topic	व्याकरणम् - शब्दाः - ~~[illegible]~~ - ~~[illegible]~~ धातवः सन्धयः - समासाः
Hours required	06
Learning Objectives	विभक्तिवल्लरी - संस्कृतसाहित्येतिहासः
Previous Knowledge to be reminded	अन्तर्मध्यमिक इण्टर्मीडियट् मध्ये पठितानां शब्दानां स्मारणम्
Topic Synopsis	- हलन्त ~~&~~ शब्दाः - पुंलिङ्ग / स्त्रीलिङ्ग / नपुंसकलिङ्ग - ~~[illegible]~~ - ~~&~~ धातवः - परस्मैपदि धातवः / आत्मनेपदि धातवः प्रथमपुरुष - मध्यमपुरुष - उत्तमपुरुष एकवचनम् द्विवचनम् बहुवचनम् - सन्धयः - श्चुत्व सन्धिः / ष्टुत्व सन्धिः / जश्त्व सन्धिः अनुनासिक सन्धिः / उम्मुडागम सन्धिः / तल सन्धिः विसर्ग सन्धिः - समासाः - अव्ययीभाव समासः - तत्पुरुष समासः कर्मधारय समासः - द्विगु समासः - द्वन्द्व समासः
Examples / Illustrations	पाठ्य पुस्तके विद्यमानाः शब्दाः, धातवः - सन्धयः - समासाः तेषाम् उदाहरणानि
Additional Inputs	एतेषां सम्बद्धानाम् उदाहरणानां शिक्षणम्
Teaching Aids used	सङ्गणकम् / कृष्णफलकम्
References cited	युट्युब / विकीपीडिया
Student Activity Planned after the teaching	शब्दानां, धातूनां, सन्धीनां, समासानां च उदाहरणानां ~~&~~ पठनम् - लेखनम् - कण्ठस्थीकरणम् /
Activity Planned outside the Class room, if any	वर्ण-पद-वाक्य ज्ञानम् - वाक्य निर्माणं च /
Any other Activity	सर्वेषाम् उदाहरणानां कण्ठस्थीकरणम् / नूतनानां लेखनम्

अक्टोबर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयसत्रम्
Paper :	II
Name of the Topic	हलन्तशब्दाः -
Hours required	06
Learning Objectives	पाणिनिमहर्षेः अष्टाध्यायी - सिद्धान्तकौमुदी
Previous Knowledge to be reminded	अन्तर्माध्यमिकस्तरे वर्षद्वयेऽपि पठिताः शब्दाः
Topic Synopsis	शब्दाः DECLENSIONS अजन्तशब्दाः - हलन्तशब्दाः पुंलिङ्गशब्दाः - स्त्रीलिङ्गशब्दाः - नपुंसकलिङ्गशब्दाः एकवचनम् द्विवचनम् बहुवचनम् जलमुच् शब्दः भिषज् शब्दः मरुत् शब्दः, भगवत् शब्दः, भवत् शब्दः पचत् शब्दः, आत्मन् शब्दः, गुणिन् शब्दः युष्मद् शब्दः, अस्मद् शब्दः
Examples / Illustrations	आवश्यकानां शब्दानां प्रस्तुतीकरणम्
Additional Inputs	एतेषां सम्बद्धानां शब्दानां शिक्षणम्
Teaching Aids used	कृष्णफलकम् - यूट्यूब वीडियो - स्मार्टफोन
References cited	यूट्यूब - विकीपीडिया द्वारा
Student Activity Planned after the teaching	शब्दानां रटनम् - कण्ठस्थीकरणं - लेखनम्
Activity Planned outside the Class room, if any	अन्य सम्बद्धानां शब्दानां ज्ञापनम्
Any other Activity	पत्राणि निर्मातुं प्रयत्नः - अभ्यासः

TEACHING PLAN (SYNOPSIS) नवम्बर

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॥ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	तृतीयसत्रम्
Paper :	II
Name of the Topic	मध्यमव्यायोगः
Hours required	6
Learning Objectives	भासमहाकविः — नाटककर्तृषु सर्वप्रथमः
Previous Knowledge to be reminded	भासनाटकचक्रम्
Topic Synopsis	नाटकान्तं हि साहित्यम्। दशविधरूपकाः। त्रयोदशनाटकानि। रामायणमहाभारतादिकथाश्रिताः। महाभारतकथाश्रितः मध्यमव्यायोगः। द्यूतक्रीडायां पराजिताः पाण्डवाः वने वसन्ति स्म। हिडिम्बा उपवासनिमित्तं नरमानेतुं स्वपुत्रं घटोत्कचं प्रेषितवती। ~~केश~~ सपुत्रदारः केशवदासं अवरोधयति। मध्यमपुत्रम् "मध्यम" इति आह्वयति। भीमसेनः आगच्छति। केशवदासं रक्षितुं भीमः सिद्धो भवति। हिडिम्बा स्वपतिं दृष्ट्वा आनन्दमनुभवति। वीरं पुत्रं, पत्नीं दृष्ट्वा भीमः सन्तुष्टः भवति।
Examples / Illustrations	भासमहाकवेः रूपकरचना वैशिष्ट्यम्
Additional Inputs	साहित्येतिहासे रूपकस्य प्राधान्यम्। वैदिकार्या ~~महत्व~~ अदर्शनीयाः विषयाः।
Teaching Aids used	स्लाइड्स्-गणकम् — कृष्णफलकम्
References cited	यूट्यूब — विकीपीडिया
Student Activity Planned after the teaching	भीमसेनस्य आर्तत्राणपरायणता। घटोत्कचस्य मातृभक्तिः। ब्राह्मणपरिवारवैशिष्ट्यम्।
Activity Planned outside the Class room, if any	भासमहाकविः — रूपकरचनाचातुर्यम्
Any other Activity	भारतं पञ्चमो वेदः

डिसम्बर

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	संस्कृतम्
Name of the Lecturer :	डा॰ उपद्रष्टा वेङ्कटरमण मूर्तिः
Course / Group :	~~II~~ तृतीयसत्रम्
Paper :	II
Name of the Topic	सङ्कल्पबलम्
Hours required	6
Learning Objectives	आचार्य गुल्लपल्लि श्रीरामकृष्णमूर्तिः
Previous Knowledge to be reminded	संस्कृतसाहित्येतिहासः
Topic Synopsis	महात्मा गान्धी - दक्षिणाफ्रिकां प्रति परिवारेण वासः - कस्तूरिबा गान्धेः अनारोग्यं - वैद्यानां सूचना - मद्यपान - मांसाहार स्वीकरणम् - गान्धेः तिरस्करणम् - आधुनिक युवतीयुवकाः मद्यपानं न स्वीकुर्युः - मांसाहारं च न स्वीकुर्युः। आयुर्वेद औषधीनां द्वारा कस्तूरिबा गान्धेः स्वस्थता।
Examples / Illustrations	आचार्याणां पाण्डित्यप्रतिभा वैशिष्ट्यानि
Additional Inputs	आयुर्वेदवैद्यस्य औन्नत्यम्
Teaching Aids used	सङ्गणकम् - कृष्णफलकम्
References cited	यूट्यूब - विकीपीडिया
Student Activity Planned after the teaching	आयुर्वेद वैद्यस्य विषये। धन्वन्तरिः ~~आयुर्वेद~~ आयुर्वेद पितामहः
Activity Planned outside the Class room, if any	सुश्रुतः - चरकः - वाग्भटः
Any other Activity	आयुर्वेदम् - भारतीयता

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II MPCS
Paper :	wave optics
Name of the Topic	Polarisation
Hours required	10
Learning Objectives	Transverse nature of light; Nicol's Prism; $\frac{1}{4}$ wave & $\frac{1}{2}$ wave plate; Laurent $\frac{1}{2}$ Shade Polarimeter
Previous Knowledge to be reminded	Plane of Polarisation; Plane of Vibration;
Topic Synopsis	Polarisation: If the vibrations of light waves are confined to a single plane then the light is known as plane polarised. The transverse nature of light is confirmed by the Polarisation Property of light. Nicol's Prism: The optic axis Principal Section: The direction which is parallel to the line joining the vertices of Calcite crystal where the 3 obtuse angles meet.
Examples / Illustrations	Sunglasses are Polaroids 3-D glasses
Additional Inputs	Polarimeter
Teaching Aids used	Animation videos, PDF, Board, Wacom Tablet
References cited	OPTICS – J K. Sharma & K. K. SARMAR
Student Activity Planned after the teaching	Assignment, Specific Rotation is practically found for sugar solution using Polarimeter.
Activity Planned outside the Class room, if any	stylus Project.
Any other Activity	—

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021-2022

Name of the Lecturer B. NAGAMANI

Department of PHYSICS

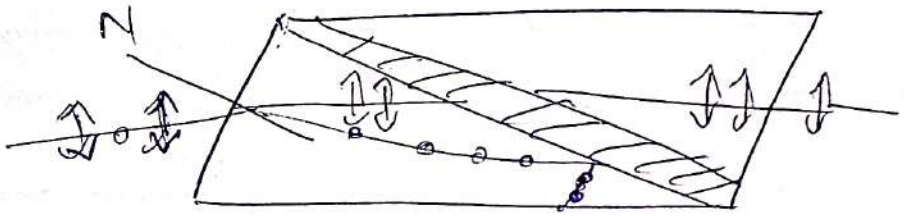
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II MPCS
Paper :	wave optics
Name of the Topic	Polarisation
Hours required	10
Learning Objectives	Transverse nature of light; Nicol's Prism; Half wave & quarter wave plate, Laurent Half Shade Polarimeter
Previous Knowledge to be reminded	Plane of Polarisation; Plane of Vibration;
Topic Synopsis	Polarisation : If the vibrations of light waves are confined to a single plane then the light is known as plane polarised. The transverse nature of light is confirmed by the Polarisation Property of light. Nicol's Prism : The optics Axis Principal Section : The direction which is parallel to the line joining the vertices of Calcite crystal where the 3 obtuse angles meet.
Examples / Illustrations	Sunglasses are Polaroids 3-D glasses
Additional Inputs	Polarimeter
Teaching Aids used	Animation videos, PDF, Board, Wacom Tablet
References cited	OPTICS – JK. Sharma & K.K. SARMAR
Student Activity Planned after the teaching	Assignment, Specific Rotation is practically found for sugar solution using Polarimeter.
Activity Planned outside the Class room, if any	Stylus Project.
Any other Activity	—

Principal section: The plane containing the optic axis and to the 2 opposite faces is known as Principal section.

Nicol's prism: The Principal section of calcite is cut at the diagonal and those 2 parts are attached with a transparent material called Canada Balsam.

Principle: Due to double refraction the light ray split into o-ray & e-ray.



By total internal Reflection o-ray is totally internally reflected.

$\mu_o = 1.658$

$\mu_e = 1.48$

$\mu_{Canada\ Balsam} = 1.55$

e-ray emerges through this Nicol's prism because $\mu_e <$ Nicol prism acts as both Polariser and Analyzer.

Half wave plate: If the phase angle between o-ray & e-ray is 180° for the given thickness of quartz plate is known as half wave plate.

Quarter wave plate: The thickness of quartz plate is such that o-ray & e-ray is $\frac{\pi}{2}$ then the quartz plate is called Quarter wave plate.

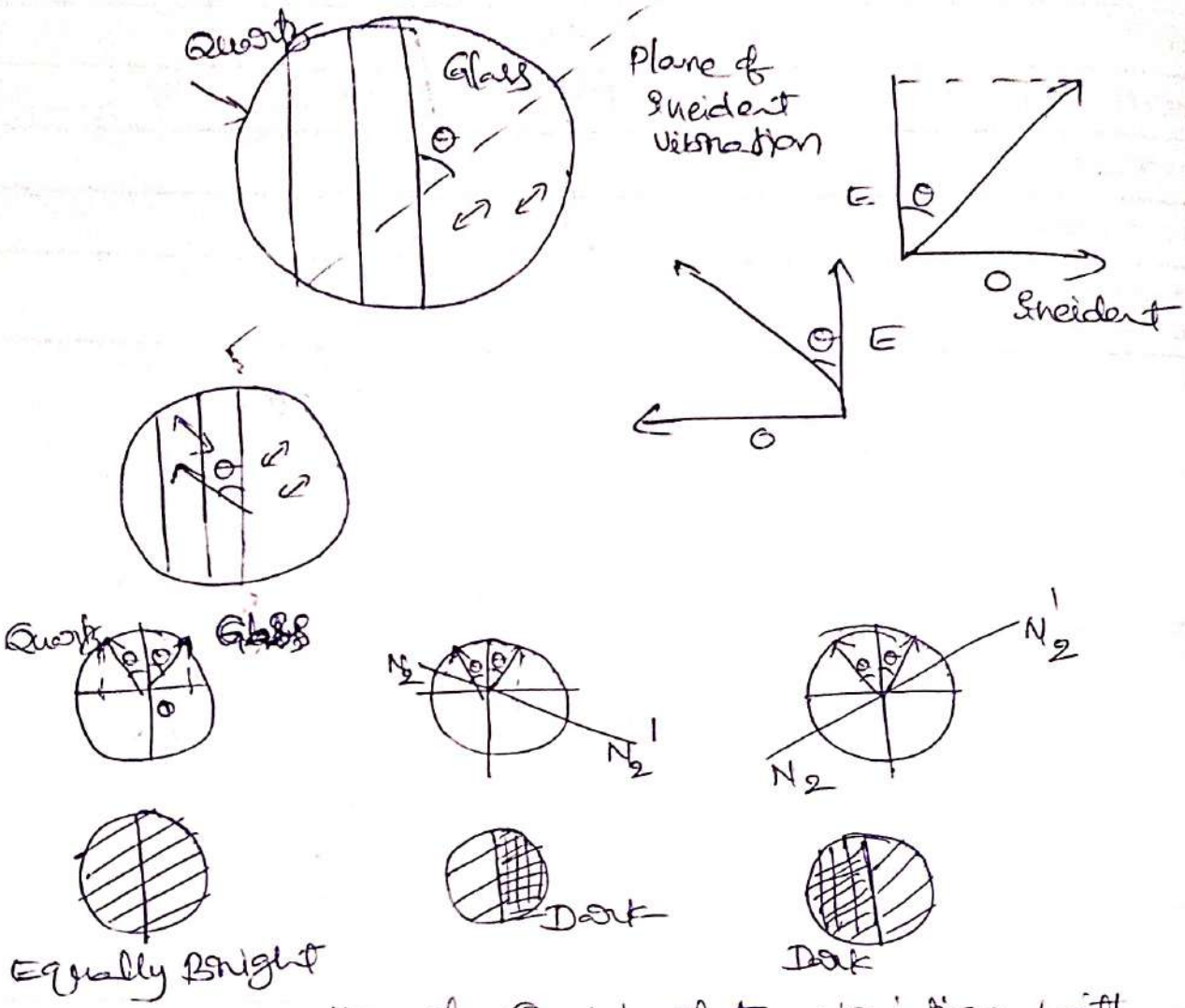
$$t = \frac{\lambda}{4(\mu_e - \mu_o)}$$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II MPCS
Paper :	Wave optics
Name of the Topic	Polarisation, optical Activity, analysis of Polarised light
Hours required	05
Learning Objectives	optical Activity, Analysis of Polarised light
Previous Knowledge to be reminded	Polarised, Analyzer
Topic Synopsis	Laws of Rotation of Plane of Polarisation (1) Angle of Rotation of Plane of Polarisation, $\theta \propto$ length of medium traversed. $\theta \propto l$ (2) total amount of rotation Produced is through several media is the algebraic sum of the rotations due to the seperate media $\theta = \theta_1 + \theta_2 + \cdots = \Sigma \theta_i$ 3) angle of Rotation is directly proportional to the conc. of the solution. $\theta \propto c$
Examples / Illustrations	Saccharimeters,
Additional Inputs	finding specific Rotation of Sugar solution at given conc. we can know whether it crystallises (or) not.
Teaching Aids used	Board, Animation ful Half Shade Polarimeter
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

optical Activity: When light is passed through calcite like crystals, due to the structure of crystal the light is rotated through an angle,

$$\text{Specific Rotation} = s = \frac{\theta}{lc}$$



1) For a particular position of Q-W plate, variation with zero minima ⇒ elliptically Polarised.
↳ Q-W plate is gradually rotated and for each position of Q-W plate,

2) non-zero minimum intensity occurs for Principal Plane of nicol inclined to optic axis of Q-W Plate.
↓ mixture of elliptical and unpolarised light.

3)

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	Thermodynamics
Paper :	III Semester, II Year B.Sc (MPCs)
Name of the Topic	Kinetic Theory of Gases
Hours required	8
Learning Objectives	Transport Phenomenon,
Previous Knowledge to be reminded	Kinetic Theory of Gases, $E = \frac{3}{2}KT$
Topic Synopsis	The Probable no. of molecules having velocities in Rel. a Certain velocity Range $\frac{dn}{n} = \left(\frac{m}{2\pi KT}\right)^{3/2} e^{-\frac{1}{2}\frac{mv^2}{KT}} e^2 dc$ Maxwell's Postulates 1) density of gas is uniform 2) The velocity of g.s molecules varies from $(0, \infty)$
Examples / Illustrations	Graphical Illustration of Probable, RMS Velocities
Additional Inputs	Probable no. of molecules having an energy Range between $(E, E+dE)$.
Teaching Aids used	Board, Pdf
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment,
Activity Planned outside the Class room, if any	
Any other Activity	

expression for Mean free Path:

Let 'v' be the velocity of moving molecules in 1 sec and it collide with all the molecules whose centers lie in a cylinder of radius σ and length v. within a volume $(\pi\sigma^2 v)$

∴ no. of collisions made by a moving molecule in 1 sec $= N = \pi\sigma^2 v\eta$

∴ distance traveled by a molecule in 1 sec $= \lambda = \frac{\text{total distance traversed in 1 sec}}{\text{no. of collisions by a molecule in one sec.}}$

$$\lambda = \frac{v}{\pi\sigma^2 v\eta}$$

$$\lambda = \frac{1}{\pi\sigma^2\eta}$$

Probable mean free path $\lambda = \frac{1}{\sqrt{2}\pi\sigma^2\eta}$

Pressure, $P = \frac{1}{3}\rho\bar{v}^2$

$$\bar{v}^2 = \frac{3KT}{m}$$

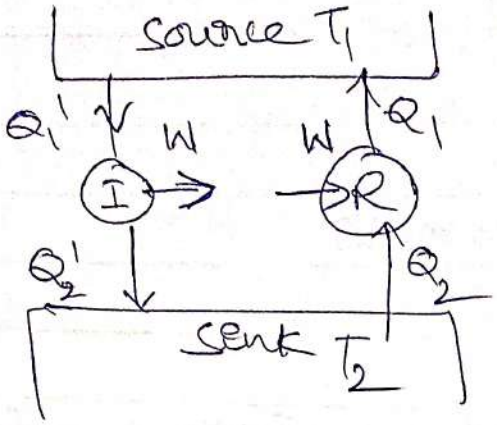
$$\therefore P = \frac{1}{3}\rho\left(\frac{3KT}{m}\right) \Rightarrow \frac{m}{\rho} = \frac{KT}{P}$$

$$\therefore \lambda = \frac{KT}{\sqrt{2}\pi\sigma^2 P} \Rightarrow \boxed{\begin{array}{l}\lambda \propto T \\ \lambda \propto \frac{1}{P}\end{array}}$$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II MPCs
Paper :	Heat & Thermodynamics
Name of the Topic	Thermodynamics
Hours required	8
Learning Objectives	System & Surroundings, Carnot engine effeciency
Previous Knowledge to be reminded	1st law of Thermodynamics
Topic Synopsis	work done in Isothermal Process: $\int dw = \int P dV = \int \frac{K}{V} dV = K \log_e\left(\frac{V_2}{V_1}\right) = RT_1 \log_e \frac{V_2}{V_1}$ work done in Adiabatic Process $\int dw = \int P dV = \int \frac{K}{V^\gamma} dV$ $= K \log_e \left(\frac{V_2}{V_1}\right)^{1-\gamma}$ $W = \frac{R(T_1 - T_2)}{1-\gamma} \log_e \left(\frac{V_2}{V_1}\right)$
Examples / Illustrations	Entropy increases in the universe. A broken mirror cannot get its original shape even by using the same energy reversibly
Additional Inputs	Carnot engine effeciency - Unified calculations.
Teaching Aids used	Board, Diagrams
References cited	Unified Physics
Student Activity Planned after the teaching	Assignments
Activity Planned outside the Class room, if any	Projects Assigned.
Any other Activity	

Carnot's theorem



2 engines I and R working between the temperatures T_1 (source) & T_2 (sink)

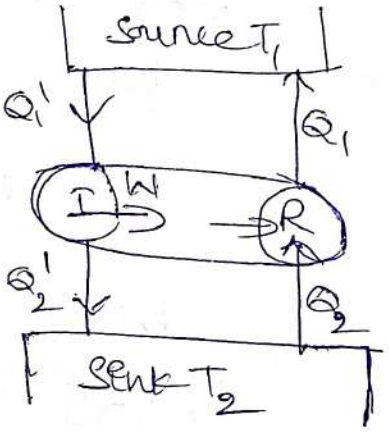
$$\eta_I > \eta_R$$

Engine 'R' absorbs Q_1 amount of heat from the source at T_1 and reject Q_2 amount of heat at T_2.

Engine R absorbs Q_1 amount of heat from the source at T_1 and reject Q_2 amount of heat at T_2

According to the assumption I is more efficient than R.

$$\frac{Q_1' - Q_2'}{Q_1'} > \frac{Q_1 - Q_2}{Q_1}$$



$$\frac{W}{Q_1'} > \frac{W}{Q_1}$$

$$Q_1 > Q_1'$$

$$Q_1' - Q_2' = Q_1 - Q_2 \quad (a)$$

Now because $Q_1 > Q_1'$

$$\therefore Q_2 > Q_2'$$

$$Q_2 - Q_2' = Q_1 - Q_1'$$

Suppose the engines are coupled together so that 'I' drive R backwards and suppose they use same source and sink.

The combination form a self acting machine.

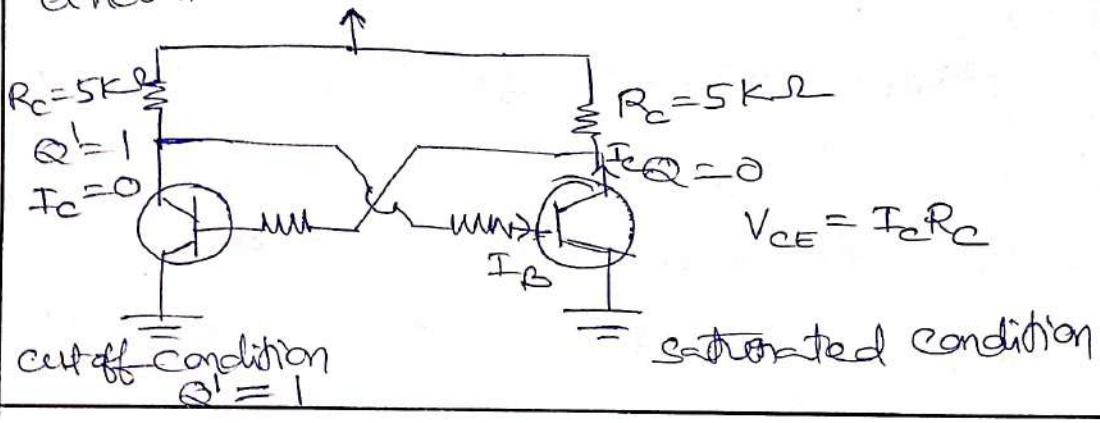
I absorbs Q_1' amount of heat from source and rejects Q_2' amount of heat to the sink. R absorbs Q_2 amount of heat from the sink and gives up Q_1 amount of heat to the source.

Gain of heat by the source at $T_1 = Q_1 - Q_1'$

Loss of heat by the sink at $T_2 = Q_2 - Q_2'$

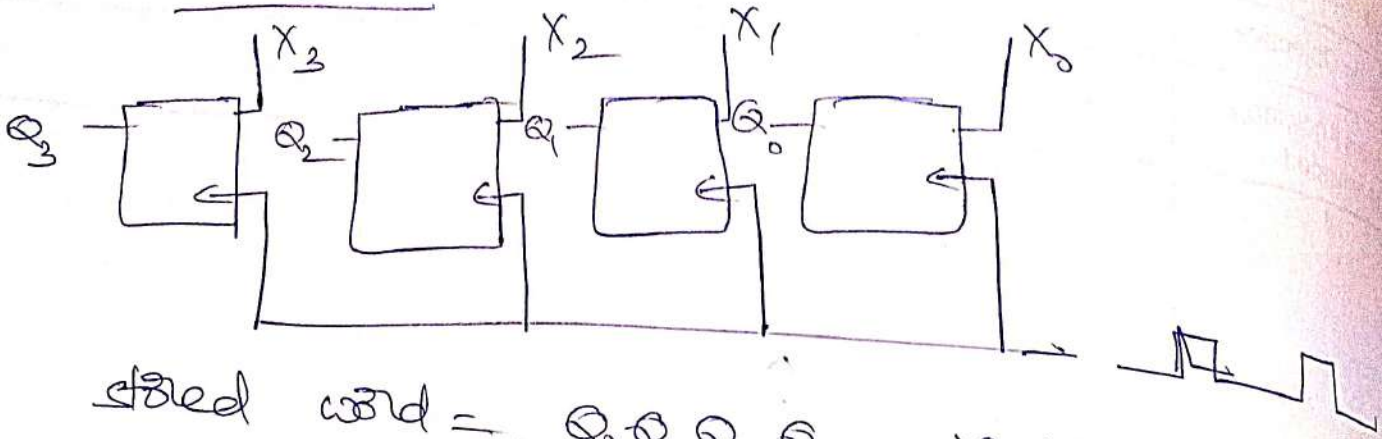
External work done on the system = 0

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics | Electronics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	B.Sc (MECs) — III Semester
Paper :	Digital Electronics
Name of the Topic	Sequential circuits
Hours required	08
Learning Objectives	flipflops, Registers & counters
Previous Knowledge to be reminded	Logic Gates.
Topic Synopsis	R-S flipflop Transistor is Basic element in electronic circuit: 
Examples / Illustrations	
Additional Inputs	T flipflop, J-K flipflop.
Teaching Aids used	Pdf.
References cited	⑥ Digital Electronics — Malvino
Student Activity Planned after the teaching	Assignments
Activity Planned outside the Class room, if any	
Any other Activity	

The coupled engine forming a self-acting machine unaided by any external agency, transfer heat continuously from a body at low temperature to a body at high temperature.
If can be concluded that, no engine can be more efficient than a perfectly reversible Engine working between the same temperatures.

Buffer Register :



stored word = $Q_3 Q_2 Q_1 Q_0 = X_3 X_2 X_1 X_0$

$Q = X$

The i/p sets the D-flipflop edge triggered the clock pulsed is applied

$Q = X$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	III Semester – MPCs
Paper :	Heat & Thermodynamics
Name of the Topic	Applications of Thermodynamic Potentials
Hours required	04
Learning Objectives	$C_p - C_v = R$; $\frac{C_p}{C_v} = \gamma = \frac{E_S}{E_T}$
Previous Knowledge to be reminded	Thermodynamic laws.
Topic Synopsis	$\frac{E_S}{E_T} = \frac{-V\left(\frac{\partial P}{\partial V}\right)_S}{-V\left(\frac{\partial P}{\partial V}\right)_T}$ $\frac{E_S}{E_T} = \frac{\left(\frac{\partial P}{\partial T}\right)\left(\frac{\partial T}{\partial V}\right)_S}{\left(\frac{\partial P}{\partial S}\right)_T\left(\frac{\partial S}{\partial V}\right)_T} = \frac{\left(\frac{\partial S}{\partial V}\right)_P}{\left(\frac{\partial T}{\partial V}\right)_P} \frac{\left(\frac{\partial P}{\partial S}\right)_V}{\left(\frac{\partial P}{\partial T}\right)_V}$ $\frac{E_S}{E_T} = \frac{T\left(\frac{\partial S}{\partial T}\right)_P}{T\left(\frac{\partial S}{\partial T}\right)_V} = \frac{\left(\frac{\partial Q}{\partial T}\right)_P}{\left(\frac{\partial Q}{\partial T}\right)_V} = \frac{C_p}{C_v}$
Examples / Illustrations	$C_p - C_v = R$ from gas expansion in a cylinder filled with a piston.
Additional Inputs	Joule-Kelvin effect.
Teaching Aids used	Board, Pdf.
References cited	Unified Physics
Student Activity Planned after the teaching	Assignments.
Activity Planned outside the Class room, if any	– Project work –
Any other Activity	

difference between specific Heats

$$C_p = \left(\frac{\partial Q}{\partial T}\right)_p \qquad C_v = \left(\frac{\partial Q}{\partial T}\right)_v$$

$$C_p - C_v = T\left(\frac{\partial S}{\partial T}\right)_p - T\left(\frac{\partial S}{\partial T}\right)_v$$

$$S(V, T)$$

$$dS = \left(\frac{\partial S}{\partial V}\right)_T dV + \left(\frac{\partial S}{\partial T}\right)_V dT$$

$$\left(\frac{\partial S}{\partial T}\right)_p = \left(\frac{\partial S}{\partial V}\right)_T \left(\frac{\partial V}{\partial T}\right)_p + \left(\frac{\partial S}{\partial T}\right)_V$$

$$\left(\frac{\partial S}{\partial T}\right)_p - \left(\frac{\partial S}{\partial T}\right)_V = \left(\frac{\partial S}{\partial V}\right)_T \left(\frac{\partial V}{\partial T}\right)_p$$

$$C_p - C_v = \left(\frac{\partial P}{\partial T}\right)_V \left(\frac{\partial V}{\partial T}\right)_p$$

$$PV = RT \Rightarrow \left(\frac{\partial P}{\partial T}\right)_V = \frac{R}{V}$$

$$PV = RT \Rightarrow \left(\frac{\partial V}{\partial T}\right)_P = \frac{R}{P}$$

$$\therefore \quad C_p - C_v = \left(\frac{R}{V}\right)\frac{R}{P} = \frac{R^2}{PV} = \frac{R(PV)}{PV}$$

$$C_p - C_v = R$$

Clausius-Clapeyron equation:

$$\left(\frac{\partial P}{\partial T}\right)_V = \left(\frac{\partial S}{\partial V}\right)_T$$

$$T\left(\frac{\partial P}{\partial T}\right)_V = T\left(\frac{\partial S}{\partial V}\right)_T = \left(\frac{\partial Q}{\partial V}\right)_T = \left(\frac{L}{V_2 - V}\right)_T$$

$$\left(\frac{\partial P}{\partial T}\right)_V = \frac{L}{T(V_2 - V_1)}$$

Suppose $\left(\frac{\partial P}{\partial T}\right)_V$ = +ve quantity & $V_2 > V_1 \Rightarrow$ as Pres... Increase... Boiling Point in...

Let $\left(\frac{\partial P}{\partial T}\right)_V$ = -ve quantity $V_2 < V_1 \Rightarrow$ AS Pressure...

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	B.Sc – MPCS – III Semester
Paper :	Thermodynamics
Name of the Topic	Kinetic theory of Gases
Hours required	08
Learning Objectives	Mean free Path, coefficient of viscosity, diffusion, thermal conductivity
Previous Knowledge to be reminded	degrees of freedom of gas molecules, Kinetic energy of gas molecules.
Topic Synopsis	Mean free Path (λ): distance travelled by a molecule bet. 2 successive collisions. Let 'd' be the diameter of molecule and the distance travelled by molecule in 1 sec 'v' Consider a cylinder of diameter 2d & length v' In it all the molecules are at rest and only single molecule is moving and collides with all others. n = no. of molecules per unit volume
Examples / Illustrations	To derive mean free path equation, we will consider one molecule is moving & all others are at rest.
Additional Inputs	Maxwell's-Boltzmann distribution law is the bridge between classical & Quantum mechanics
Teaching Aids used	Board
References cited	unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	Project

No. of collisions Per Sec $\bar{V}$ = no. of molecules in cylinder of volume $\pi d^2 V$

$\therefore$ free Path 'λ' = V × (time) = $\frac{V}{\text{no. of collisions Per Sec}}$

$$\lambda = \frac{V}{\pi d^2 V n} = \frac{1}{\pi d^2 n}$$

$$\lambda_{mean} = \frac{1}{\sqrt{2}\pi d^2 n}$$

coefficient of Viscosity : Let a layer of gas molecules is represented as MN in y-direction. Above and below it at a mean-free Path λ assume layers 'AB' and 'CD'.

velocity of molecules in MN layer is u

then in AB & CD layers $\left(u+\lambda\frac{du}{d\lambda}\right)$ & $\left(u-\lambda\frac{du}{d\lambda}\right)$.

$\therefore$ The change in momentum in MN layer due to transport of molecules from 'AB' and 'CD' layers

change in momentum = $m\left(u+\lambda\frac{du}{d\lambda}\right) - m\left(u-\lambda\frac{du}{d\lambda}\right)$

no. of molecules moving in ±y-direction = $\frac{1}{6}n\bar{V}$

$\therefore$ change in momentum = $\frac{1}{6}n\bar{V}m\,2\lambda\frac{du}{d\lambda}$

change in momentum = $\frac{1}{3}mn\bar{V}\lambda\frac{du}{d\lambda}$

'η' is defined as tangential force per unit area per unit velocity gradient.

$$\eta = \frac{\frac{1}{3}mn\bar{V}\lambda\frac{du}{d\lambda}}{\frac{du}{d\lambda}} = \frac{1}{3}mn\bar{V}\lambda$$

$$\eta = \frac{1}{3}mn\bar{V}\frac{1}{\sqrt{2}\pi d^2 V n} = \frac{m}{\sqrt{2}\pi d^2}$$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. NAGAMANI
Course / Group :	III Sem MPCs
Paper :	Thermodynamics & Radiation Physics
Name of the Topic	Transport phenomena
Hours required	04
Learning Objectives	Thermal conductivity coefficient, Diffusion coeff(n)
Previous Knowledge to be reminded	Thermal conduction, Diffusion
Topic Synopsis	Thermal conduction : AB, MN and CD are in +ve y-direction temperature increases as we move from AB to CD through MN. 'n' is the number of molecules per unit volume and $\bar{v}$ is their average speed. no. of molecules crossing the plane MN upwards (or) downwards per unit area per sec $= \frac{1}{6} n\bar{v}$ 'E' be the energy of each molecule in the plane MN and $\frac{dE}{dz}$ is energy gradient.
Examples / Illustrations	Gaseous system is assumed as layers to define its properties.
Additional Inputs	M-B distribution law of energy.
Teaching Aids used	Board
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Project
Any other Activity	—

energy of each molecule in AB layer $= E - \lambda \frac{dE}{dy}$

" " " in EF layer $= E + \lambda \frac{dE}{dy}$

Net energy transferred in AB layer $= 2\lambda \frac{dE}{dy}$

$\therefore$ Thermal conductivity coefficient $K = \frac{Q}{\frac{dT}{dy}} = \frac{1}{3} m n \bar{c} c_v \lambda$

$K = \frac{1}{3} \rho \bar{c} c_v \lambda$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. Nagamani
Course / Group :	I MPC
Paper :	Mechanics, waves & oscillations
Name of the Topic	central force
Hours required	07
Learning Objectives	central force definition, conservative fore, characteristics of central force, kepler's laws
Previous Knowledge to be reminded	Gravitational force, conservative nature.
Topic Synopsis	central force : The force which acts towards a fixed point and is function of distance from the point is called central force. $F = f(r)\hat{r}$ Ex: Gravitational force, e-m force. characteristics : 1. curl of central force is zero. 2. $-\nabla U = F_{central}$ 3. $\nabla \times (\nabla U) = 0$ 4. $\tau = \frac{dL}{dt} = 0 \Rightarrow L = \text{constant}$
Examples / Illustrations	Kepler's laws simulations are shown
Additional Inputs	
Teaching Aids used	Board, Video shared
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Project
Any other Activity	

Equation of motion under a central force

$r = \frac{1}{u}$

$$\frac{dr}{dt} = -\frac{1}{u^2}\frac{du}{dt} = -\frac{1}{u^2}\frac{du}{d\theta}\frac{d\theta}{dt} = -\frac{1}{u^2}\frac{du}{d\theta}\left(\frac{h}{r^2}\right) = -h\frac{du}{d\theta}$$

$$\frac{d^2r}{dt^2} = -h\frac{d^2u}{d\theta dt} = -h\frac{d^2u}{d\theta^2}\left(\frac{d\theta}{dt}\right) = -h\frac{d^2u}{d\theta^2}\left[\frac{h}{r^2}\right]$$

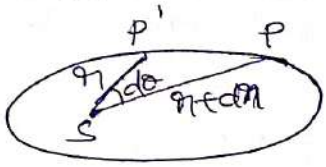
$$\frac{d^2r}{dt^2} = -h^2u^2\frac{d^2u}{d\theta^2}$$

radial acceleration $a_r = -h^2u^2\frac{d^2u}{d\theta^2} - r\left(\frac{d\theta}{dt}\right)^2$

$$a_r = -h^2u^2\frac{d^2u}{d\theta^2} - r\frac{h^2}{r^4} = -h^2u^2\frac{d^2u}{d\theta^2} - h^2u^3$$

$$\frac{d^2u}{d\theta^2} + u = \frac{P}{h^2u^2} \quad \text{——(4)}$$

Kepler's 2nd law & 3rd law



$$T = \frac{\text{area swept in one revolution}}{\text{areal velocity}}$$

$$T = \frac{\pi ab}{\frac{h}{2}}$$

semi latus rectum $= l = \frac{b^2}{a} = \frac{h^2}{\mu}$

$$\frac{b^2}{a} = \frac{h^2}{\mu} \Rightarrow h = b\sqrt{\frac{\mu}{a}}$$

$$\therefore T = \frac{2\pi ab}{b\sqrt{\frac{\mu}{a}}} \Rightarrow T \propto a^{\frac{3}{2}}$$

Kepler's 1st law:

$$e = \frac{Ah^2}{\mu} = \left[1 + \frac{2Eh^2}{m\mu^2}\right]^{\frac{1}{2}}$$

$e < 1$ (or) $E < 0$ orbit is ellipse

$e = 1$ or $E = 0$ orbit is parabola

$e > 1$ or $E > 0$ orbit is hyperbola

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II MPC – III Semester
Paper :	Mechanics, Waves & Oscillations, Thermodynamics
Name of the Topic	Carnot engine and its efficiency
Hours required	07
Learning Objectives	carnot engine efficiency, Carnot theorem, entropy
Previous Knowledge to be reminded	1st law of thermodynamics, temperature & heat concepts
Topic Synopsis	Carnot theorem: No heat engine operating on a cycle between 2 heat reservoirs at different fixed temperatures can be more efficient than a reversible engine. Two reversible heat engines operating bet. 2 heat reservoirs at different fixed temperatures will have the same efficiency.
Examples / Illustrations	Automobile engines (combustion engine) are examples of Heat engine
Additional Inputs	Carnot engine is a reversible heat engine
Teaching Aids used	Board, Pdf (notes)
References cited	unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	

Consider 2 reservoirs working bet., 2 temp T_1 & T_2
Engine 'I' takes in heat Q_1, rejects heat Q_2 and does work W_1

$$W_1 = Q_1 - Q_2$$

The reversible engine takes Q_1' heat & rejects Q_2' and does work W_1'

$$\therefore W_1' = Q_1' - Q_2'$$

Both the engines work bet. same temp and are adjusted to produce equal amount of work. i.e

$$W_1 = W_1' \Rightarrow Q_1 - Q_2 = Q_1' - Q_2'$$

$$\eta_I > \eta_R$$

$$\Rightarrow \frac{W_1}{Q_1} > \frac{W_1'}{Q_1'} \Rightarrow \underline{Q_1' > Q_1}$$

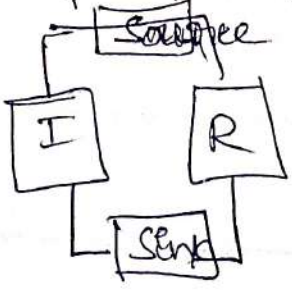
$$\Rightarrow \underline{Q_2' > Q_2}$$

more effecient reversible engine will extract less amount of heat from source, and rejects less " " " to sink than less effecient reversible engine.

The magnitude of heat and work transfer for the reversible heat engine will remain same, but their directions will be reversed, when it works as a heat pump.

combining engine I and heat pump R as one system, $\Rightarrow$ for the combined system the heat energy transfer $Q_2' - Q_2 = Q_1' - Q_1$ from low temperature heat reservoir to high temp. heat reservoir, which violates 2nd law of Thermodynamics.

$\therefore$ The assumption $\eta_I \Rightarrow \eta_R$ is wrong.



TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	I B.Sc (MPC) – I Semester
Paper :	Mechanics, waves & oscillations
Name of the Topic	Special theory of Relativity
Hours required	8
Learning Objectives	Absolute reference frame, Michelson-Morley experiment, ~~Galilean transformation, Einstein mass energy equivalence~~ Relation, Length contraction, time dilation
Previous Knowledge to be reminded	
Topic Synopsis	Position is relative, time is also relative, motion is always relative. Galilean transformations $x' = x - Vt$ $u' = u - V$ $a' = a \Rightarrow F = F'$ The basic laws of Physics are identical in all inertial reference frames.
Examples / Illustrations	Galilean Rain drops – Ball motion.
Additional Inputs	Relative motion ⇔ Isolated motion in space
Teaching Aids used	Board, Youtube video
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Precession of equinoxes: The equitorial plane of the earth makes an angle 23.5° with the plane of rotation around the Sun.

The line joining the intersection of these two planes is called the line of equinoxes.

During one complete revolution round the Sun in one year the earth crosses this line twice at 21st March and 22nd September.

The 1st point is called vernal equinox and the 2nd one is called autumnal equinox.

The earth is not a perfect sphere.

The lower part of the earth is slightly closure than the upperhalf.

This results a difference in the force of attraction. This difference acts as an external torque causing Precession of the axis of the rotation of the earth.

Due to this, the equinoxes processes.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	I B.Sc (MPC) – 1st semester
Paper :	Mechanics, Waves & oscillations
Name of the Topic	Simple & damped Harmonic Motion
Hours required	08
Learning Objectives	Simple harmonic, damped harmonic oscillations
Previous Knowledge to be reminded	SHM equation
Topic Synopsis :	$F \propto -x \Rightarrow F = -kx$ $m\frac{d^2x}{dt^2} + kx = 0$ $\frac{d^2x}{dt^2} + \omega^2 x = 0$ $x = Ae^{\alpha t} \Rightarrow \frac{dx}{dt} = A\alpha e^{\alpha t}$ $\frac{d^2x}{dt^2} = A\alpha^2 e^{\alpha t}$ $A\alpha^2 e^{\alpha t} + \omega^2 A e^{\alpha t} = 0$ $A e^{\alpha t}(\alpha^2 + \omega^2) = 0$
Examples / Illustrations	Damped Harmonic oscillations – simple Pendulum in air
Additional Inputs	Pendulum motion in oil; Gravitational acceleration
Teaching Aids used	Board
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Project
Any other Activity	

$\Rightarrow \alpha^2 = -\omega^2 \qquad \Rightarrow \alpha = \pm i\omega$

$\therefore x = A_1 e^{+i\omega t} + A_2 e^{-i\omega t}$

Damped Harmonic oscillator

$F_{restoring} = -kx \qquad F_{damped} = -\eta \frac{dx}{dt}$

$m\frac{d^2x}{dt^2} + \eta\frac{dx}{dt} + kx = 0$

$x = Ae^{\alpha t}$

$\frac{d^2x}{dt^2} + 2b\frac{dx}{dt} + \omega^2 x = 0$

$A\alpha^2 e^{\alpha t} + 2b\alpha A e^{\alpha t} + \omega^2 A e^{\alpha t} = 0$

$A e^{\alpha t}\left[\alpha^2 + 2b\alpha + \omega^2\right] = 0$

$\alpha = \frac{-2b \pm \sqrt{4b^2 - 4\omega^2}}{2} = -b \pm \sqrt{b^2 - \omega^2}$

$\therefore x = A_1 e^{(-b+\sqrt{b^2-\omega^2})t} + A_2 e^{(-b-\sqrt{b^2-\omega^2})t}$

Case i) $b^2 > \omega^2$

$\Rightarrow x = A_1 e^{(-b+\sqrt{b^2})t} + A_2 e^{-2bt}$

So the displacement decreases exponentially with time.

Case ii) $b^2 = \omega^2 \qquad \sqrt{b^2-\omega^2} \to h$

$x = A_1 e^{(-b+h)t} + A_2 e^{(-b-h)t}$

$= A e^{-bt}\left[A_1 e^{ht} + A_2 e^{-ht}\right]$

$x = e^{-bt}\left[A_1[1+ht+\dots] + A_2[(-ht)\right]$

$x = e^{-bt}\left[ht[A_1 - A_2] + [A_1 + A_2]\right] = e^{-bt}[p + qt]$

Let $A_1 + A_2 = p \qquad t(A_1 - A_2) = q$

Case iii) $b^2 < \omega^2 \qquad \sqrt{b^2-\omega^2} = i\sqrt{(\omega^2-b^2)}$

$\therefore x = A_1 e^{(b+i\sqrt{\omega^2-b^2})t} + A_2 e^{(-b-i\sqrt{\omega^2-b^2})t}$

Let $\sqrt{\omega^2-b^2} = \beta$

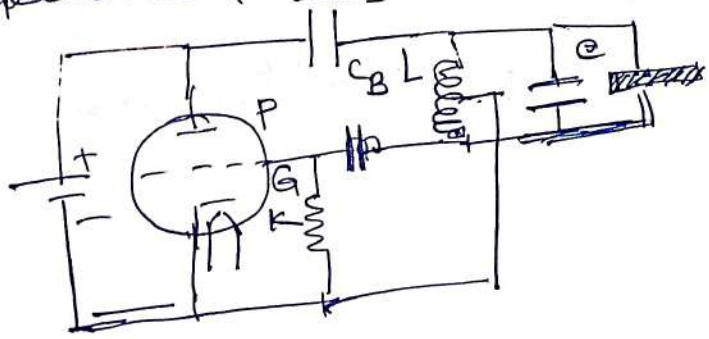
$= e^{-bt}\left[A_1 + A_2\right] + e^{i\sqrt{\omega^2-b^2}\,t}\left[A_1 - A_2\right]$

$= e^{-bt}\left[A_1 e^{i\beta t} + A_2 e^{-i\beta t}\right] = e^{-bt}\left[A_1(\cos\beta t + i\sin\beta t) + A_2[\cos\beta t - i\sin\beta t]\right]$

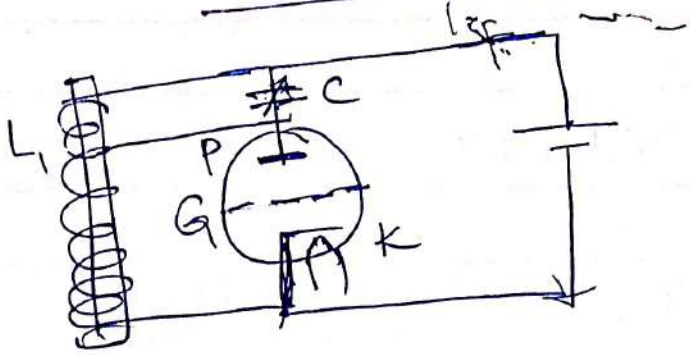
$= e^{-bt}\left[A_1 + A_2\right]\cos\beta t + [A_1 - A_2]\sin\beta t$

$x = e^{-bt}[\sin(\beta t + \phi$

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	I Semester
Paper :	Mechanics, waves & oscillations
Name of the Topic	Ultrasonics
Hours required	06
Learning Objectives	Piezoelectric Method, Magnetostriction Method detection methods of ultrasonics
Previous Knowledge to be reminded	Resonance
Topic Synopsis	Piezoelectric effect (Reverse): when electric field is applied to quartz like crystals to opposite faces; it expands to that direction along mechanical axis it oscillates.  quartz plate
Examples / Illustrations	Piezoelectric effect used in light gas to produce spark (electric)
Additional Inputs	Triode, Transistor biasing
Teaching Aids used	Video (Kundt's tube)
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	—

Magnetostriction Method



At resonance, the frequency of magnetic rod is same as the frequency of L,C circuit then required frequency high energy ultrasonics are generated.

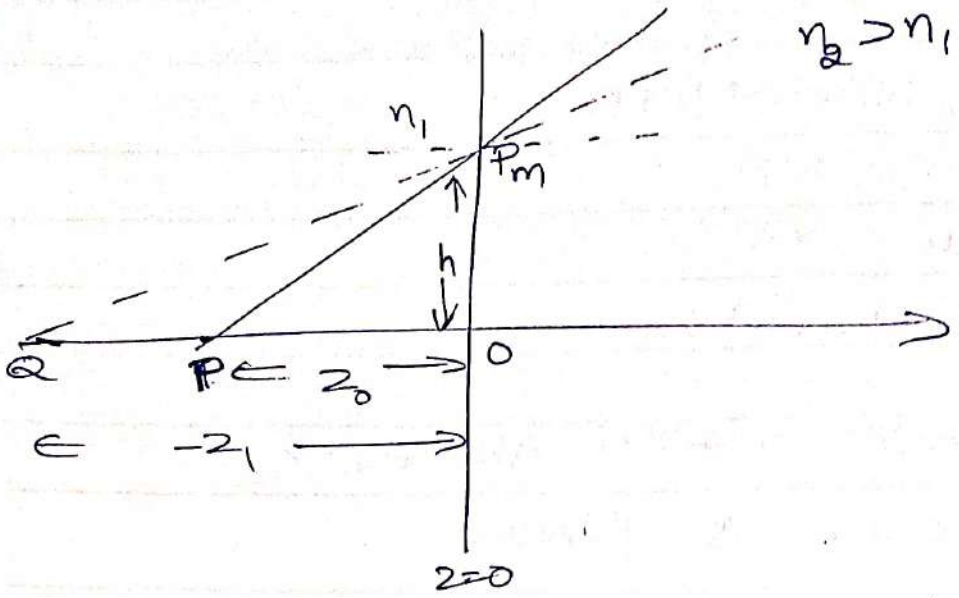
$$n = \frac{1}{2\pi}\frac{1}{\sqrt{LC}}$$

P. B Sahu
22/11/2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II Sem, MPC
Paper :	wave optics
Name of the Topic	Aberrations
Hours required	8
Learning Objectives	chromatic, spherical Aberrations
Previous Knowledge to be reminded	lens makers formula.
Topic Synopsis	$\frac{1}{f} = (\mu-1)\left(\frac{1}{R_1}-\frac{1}{R_2}\right)$ $\frac{1}{f_R} = (\mu_R-1)\left(\frac{1}{R_1}-\frac{1}{R_2}\right)$ $\frac{1}{f_V} = (\mu_V-1)\left(\frac{1}{R_1}-\frac{1}{R_2}\right)$ $\frac{f_R f_V}{f^2} = \left(\frac{\mu_R-\mu_V}{\mu-1}\right)\left(\frac{1}{f_2}\right) = \frac{\omega}{f}$
Examples / Illustrations	Images of aberrations in photos.
Additional Inputs	
Teaching Aids used	Video (youtube)
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	

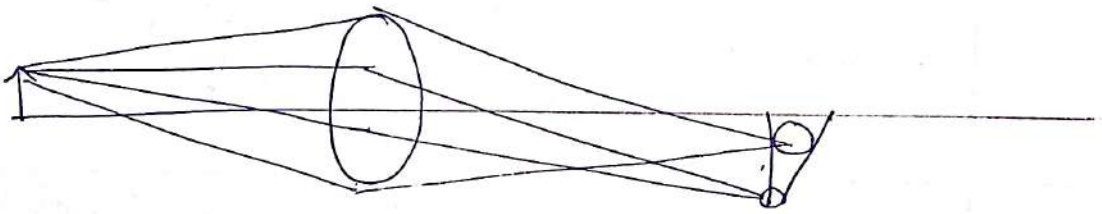
Spherical Aberration due to a Plane Refracting Surface



Let 'P' be a point object and the plane surface be situated at z=0. Suppose 'P

Let a ray P_m be incident on the refracting surf of height 'h'.

coma



coma arises due to an off-axis point. After passing through the lens, as circular discs with decreasing radius, which gives comet like structure.

Removal of coma:

$$\frac{R_1}{R_2} = -\frac{1}{9}$$

Abbe Sine condition

$$n_1 y_1 \sin\theta_1 = n_2 y_2 \sin\theta_2$$

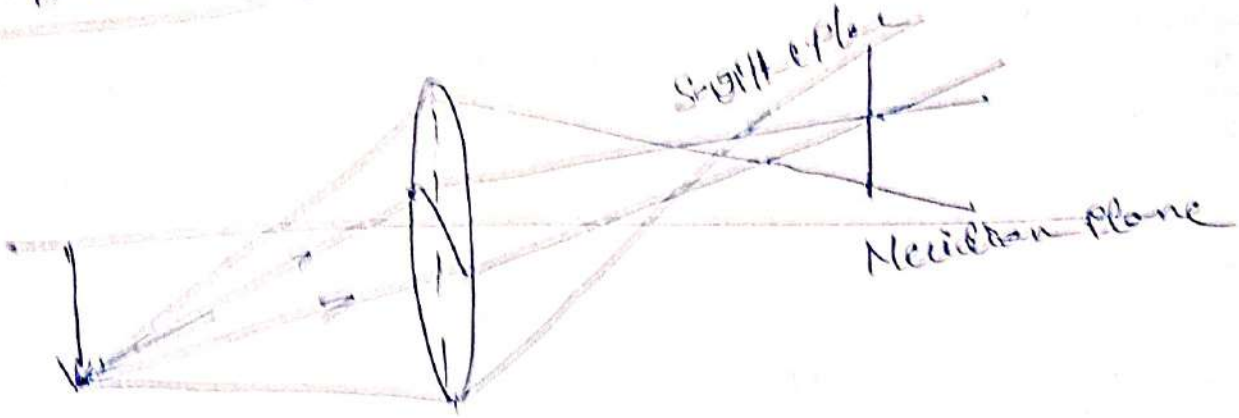
$$\frac{y_2}{y_1} = \left(\frac{n_1}{n_2}\right)\left(\frac{\sin\theta_1}{\sin\theta_2}\right)$$

J. Gulati

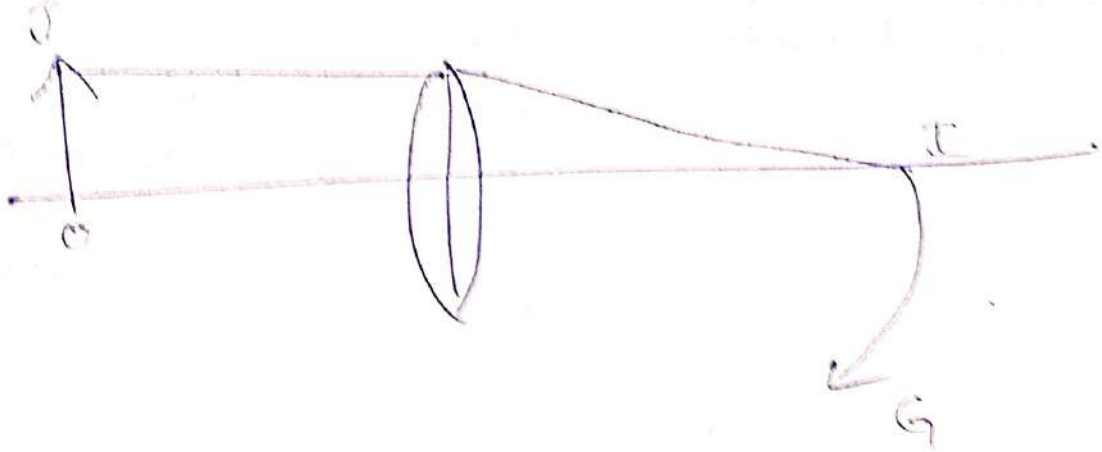
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	B. NAGAMANI / PHYSICS
Name of the Lecturer :	
Course / Group :	II Sem MPC
Paper :	Wave optics
Name of the Topic	Aberrations
Hours required	04
Learning Objectives	coma, Astigmatism, curvature, Distortion.
Previous Knowledge to be reminded	Angle of deviation
Topic Synopsis	Astigmatism : Image is obtained due to off-axis object points. In coma, the spreading of image fibre normal to the lens axis. In Astigmatism, image spreads along the lens axis.
Examples / Illustrations	Astigmatism has advantage & we can view the image clearly both in horizontal & Vertical directions.
Additional Inputs	Advantages of Astigmatism to study a body structure
Teaching Aids used	Pictures, Video shared
References cited	Unified Physics, NPTEL lecture
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	

Astigmatism



Coma



TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. Nagamani
Course / Group :	MBC, MBF
Paper :	Solar energy
Name of the Topic	Solar Radiation
Hours required	04
Learning Objectives	Sun as a source of energy.
Previous Knowledge to be reminded	energy, conservation of energy
Topic Synopsis	Nuclear fusion : takes place in the Sun $_1H^1 + {}_1H^1 \longrightarrow {}_2He^4 +$ energy About 30% of the Solar energy that reaches earth is reflected back into space.
Examples / Illustrations	Nuclear fusion C-N cycle
Additional Inputs	Nuclear Reactions, Sun structure
Teaching Aids used	Diagrams
References cited	Anatomy of the Sun — NASA (.gov)
Student Activity Planned after the teaching	Prepare for the exams
Activity Planned outside the Class room, if any	—
Any other Activity	—

Solar Radiation

Sun is the primary source of energy. Solar energy stored food through photosynthesis process in plants, → Later the plants remains & the animals remains which eat plants is converted into coal & oil. The sun also causes evaporation of water, causes rain, which replenishes lakes, which drive hydroelectric power. Wind energy is also because of solar energy.

Solar Radiation classification

1) Direct Radiation
2) Indirect Radiation.

Solar Radiation at the earth's surface

The atmosphere on the earth depends on the amount of energy coming from the Sun. This energy is spread phenomena such as scattering, reflection, absorption and energy transformation.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. Nagamani
Course / Group :	MBC, MBF
Paper :	Solar energy
Name of the Topic	classification of Solar Radiation
Hours required	4
Learning Objectives	Direct Radiation, Indirect Radiation
Previous Knowledge to be reminded	Radiation definition
Topic Synopsis	Direct Radiation means, the solar radiation travelling on a st. line from the Sun to surface of the earth in the absence of earth atmosphere. Diffuse Radiation: is the sunlight, that is scattered by molecules & particles in the atmosphere.
Examples / Illustrations	solar cooker working
Additional Inputs	solar thermal energy devices
Teaching Aids used	PDF
References cited	Renewable energy — B H Khan
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	—

1) Direct Radiation has a definite direction, but
2) diffuse radiation follows more scattered path.

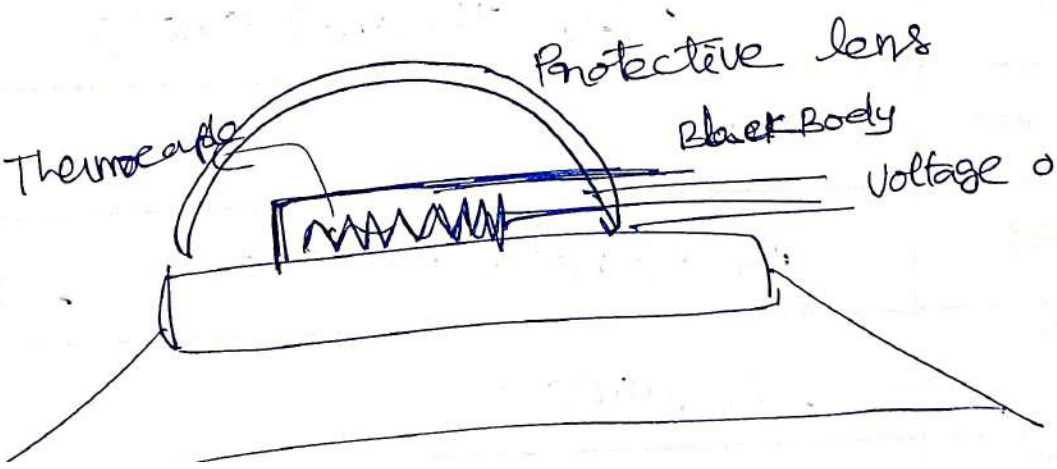
→ Shadows are produced only when direct Radiation is blocked.

When sky is clear 85% is direct Radiation when sun lowers in the sky, diffuse Radiation keeps increasing until it reaches 40% when the Sun is 10° above the horizon.

Pyranometer

It is a type of actenometer used for measuring solar irradiance on a planar surface and is designed to measure the solar radiation flux density in wavelength region (0.3 μm to 3 μm)

SI unit of irradiance are w/m².



TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	B. Nagamani
Course / Group :	II MPCS
Paper :	Wave optics
Name of the Topic	Interference
Hours required	10
Learning Objectives	conditions for Interference, Lloyd's mirror, Newton Rings expt, Michelson Interferometer
Previous Knowledge to be reminded	Interference phenomenon,
Topic Synopsis	Bright Band condition is $\Delta = n\left(\frac{\lambda}{2}\right)$ Dark Band condition is $\Delta = (2n+1)\frac{\lambda}{2}$ Stoke's law: when a reflected light ray is backed by a denser media it suffers an additional phase angle π
Examples / Illustrations	Young's double slit expt, water waves Interference
Additional Inputs	optical Bench, Coherent waves (concept)
Teaching Aids used	Board, Youtube Video
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	

Thermopile: uses a thermocouple to notice dissimilarity in temperature bet. 2 surfaces. The labelled active surface is a black surface in flat shape and it is exposed to the atmosphere.

Glass Dome: limits the spectral wavelength from 300 nm – 2800 nm. from 180° degrees of view.
It protects thermopile sensed from rain, wind. etc.

Occulation Disc:
used to measure the diffuse radiation from the panel surface.

Working Principle:
It depends on the difference in temperature measurement between 2 surfaces like dark & cle
The voltage which is generated from the thermopile is calculated with the help of Potentiometer. using electronic integrated circ of Radiation is calibrated.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	SD
Paper :	Solar energy
Name of the Topic	Pyranometer
Hours required	04
Learning Objectives	Thermopile pyranometer, photodiode baled Pyranometer
Previous Knowledge to be reminded	Thermocouple
Topic Synopsis	Pyranometer is classified in 2 types 1) thermopile pyranometer 2) Photodiode baled pyranometer. Thermopile pyranometer : measures flux density from 180° angle.
Examples / Illustrations	Thermopile
Additional Inputs	solar photovoltaic devices
Teaching Aids used	PDF
References cited	B.H Khan — Renewable energy Resources
Student Activity Planned after the teaching	writing Notes
Activity Planned outside the Class room, if any	—
Any other Activity	

Pyranometer used to measure the flux density of the solar radiation from a 180° angle.

It measures 280 nm — 2800 nm with a largely level spectral sensitivity.

Photodiode based Pyranometers

Silicon pyranometer detects the spectral 400 nm — 900 nm.

This changes the optical frequency of solar spectrum to connect at high speed.

The change is influenced through the temp. with rise in current.

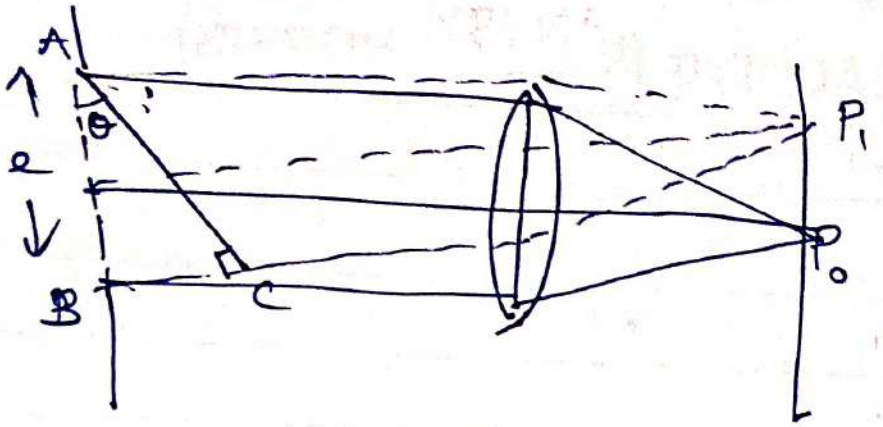
It is done by using diodes with exact spectral response.

Application

1.) Solar intensity can be measured
2) climatological & Meteorological studies
3) PV system design
4) Locations of the greenhouse can be established.
5) Insulation required buildings can be identified.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. Nagamani
Course / Group :	II Sem MPCs
Paper :	wave optics
Name of the Topic	Diffraction
Hours required	10
Learning Objectives	Diffraction : Single slit, circular aperture, double slit, Grating, Fare Plate
Previous Knowledge to be reminded	Diffraction phenomena & conditions
Topic Synopsis	Diffraction : when light falls on the obstacle whose size is comparable with the wavelength of light, then the light bends around the obstacle and enters in the geometrical shadows. If the width of the slit is comparable to the λ of light, fringes are formed due to the superposition of bent waves around the corners of an obstacle.
Examples / Illustrations	The seperation bet. threads in a cloth acts as Grating
Additional Inputs	Diffraction with water ripples
Teaching Aids used	PDF, VIDEO
References cited	Unified Physics, VIDEO
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	—
Any other Activity	



$$BC = AB \sin\theta = e \sin\theta = \frac{2\pi}{\lambda}$$

The width of the slit is divided into 'n' equal parts.

$\therefore$ Phase difference $= \frac{2\pi}{\lambda}(e \sin\theta)$

Let the width of the slit is divided into 'n' equal parts and the amplitude of wavefront for each part is 'a'

$$\frac{1}{n}(\text{Phase difference}) = \frac{1}{n}\left(\frac{2\pi}{\lambda} e \sin\theta\right) = d$$

$$R = \frac{a \sin\left(\frac{nd}{2}\right)}{\sin\left(\frac{d}{2}\right)}$$

P. Sultan

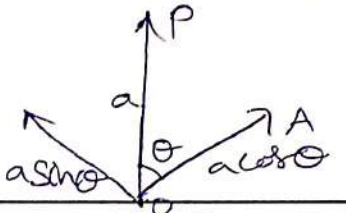
Zone Plate :

The focal length of zone plate $f_n = \frac{r_n^2}{n\lambda}$

r_n = radius of the n^{th} zone

In zone plate, alternate zones are darkned to improve the intensity of diffracted light

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	B. NAGAMANI
Course / Group :	II sem MPC
Paper :	Wave optics
Name of the Topic	Polarisation
Hours required	10
Learning Objectives	Polarisation concept, Nicols prism, Analysis of circularly & elliptic - By Polarised light, double Refraction
Previous Knowledge to be reminded	Polarisation concept, Double Refraction
Topic Synopsis	Brewsters law $\mu = \tan P = \frac{\sin P}{\cos P} = \frac{\sin P}{\sin r}$ $\cos P = \sin r$ $\sin(90-P) = \sin r$ $90-P = r \Rightarrow P+r = 90^\circ$ Hence at $i = p$ (Brewsters angle) both reflected & refracted rays are at right angle to each other. Malus law : $I_a = a^2 \cos^2\theta$  OP = a is the amplitude of the incident Plane Polarised light.
Examples / Illustrations	Polarisers are used in 3-D film glasses.
Additional Inputs	3-D Pictures making
Teaching Aids used	Simulations
References cited	PhET Simulation
Student Activity Planned after the teaching	Assignments
Activity Planned outside the Class room, if any	Projects — spectrograph, Bulb Projector
Any other Activity	

Nicol's prism : Nicol prism is used to produce Plane Polarised light. Nicol eliminated the ordinary beam by utilizing the phenomenon of total internal reflection at the thin film of Canada balsam seperating the 2 pieces of Calcite. This device is known as Nicol prism.

$\mu_o = 1.658$ $\mu_{Canada\ Balsam} = 1.5$

$\mu_e = 1.486$

∴ For o-ray Canada balsam is rarer medium & it escapes

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics — October-21
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	B.Sc (MPC) TM & EM
Paper : (5)	Electricity, Magnetism and Electronics
Name of the Topic	1. Electric field intensity and Potentials & D
Hours required	12 hrs (7 hrs)
Learning Objectives	Knowledge, Understanding and Practical skill.
Previous Knowledge to be reminded	Electricity, Electric field, coulombs law.
Topic Synopsis	Gauss's law :- Total normal electric flux ϕ_E over a closed surface is $\frac{1}{\epsilon_0}$ times the total charge Q enclosed with in the surface. $\phi_E = \oint E \cdot ds = \frac{Q}{\epsilon_0}$. Differential form :
Examples / Illustrations	Given when necessary.
Additional Inputs	Deduction of coulomb's law from Gauss law.
Teaching Aids used	Board and chalk, PPT, ICTs
References cited	Unified Physics, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignments
Activity Planned outside the Class room, if any	–
Any other Activity	–

Electric field intensity due to uniformly Charged sphere. 1) ~~charge~~ point out side the sphere

2) ~~point~~ on the surface

3) point inside the sphere.

Electric potential: It is defined as the work done by an external agent in carrying a unit positive test charge from infinity to that point against the electric force of the field.

$$V = \frac{W}{q} \text{ volts}$$

Equipotential surfaces:

Potential due to i) a point charge

ii) uniformly charged sphere

=

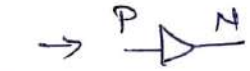
TEACHING PLAN (SYNOPSIS)

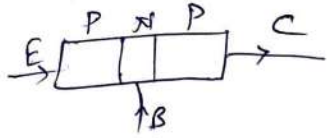
ıe of the Department / Subject :	Physics — October-21
e of the Lecturer :	T.V.Vakula Priya
se / Group :	B.Sc (MPC) EM & TM
r :	(5) Electricity, Magnetism and Electronics
Name of the Topic	Dielectrics
Hours required	5 hrs
Learning Objectives	Knowledge, Understande, Practical Skill, application
Previous Knowledge to be reminded	Types of materials Based on Electric property.
Topic Synopsis	Electric Dipole moment: Molecular polarizability: Polarization and Polarizability: Electric Displacement D, Relation between D, E and P Dielectric constant and Susceptibility.
Examples / Illustrations	Given when necessary
Additional Inputs	Atomic view of Dielectrics
Teaching Aids used	PPT's, Board and chalk, ICT's.
References cited	Unified Physics, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignment & Group discussion
Activity Planned outside the Class room, if any	-
Any other Activity	-

P. Silan

TEACHING PLAN (SYNOPSIS)

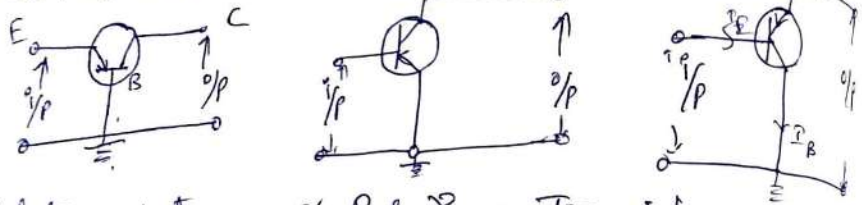
November-21

Name of the Department / Subject :	Physics
Name of the Lecturer :	T. V. Vakula Priya
Course / Group :	B.Sc (MPC) TM & EM
Paper :	Paper - 5
Name of the Topic	Basic Electronics
Hours required	12 hrs.
Learning Objectives	knowledge, understanding & Practical Skill
Previous Knowledge to be reminded	Types of materials, current, voltage, Resistance.
Topic Synopsis	Semiconductors :- A substance which has resistivity in between Conductors and insulators is known as semiconductor. P-N Junction Diode →  Zener Diode → I-V characteristics of P-N Diode & Zener Diode.
Examples / Illustrations	Given when necessary.
Additional Inputs	Super conductors & materials.
Teaching Aids used	PPT, Board & Chalk, ICTs.
References cited	Unified Physics, Telugu Academy, Halliday & Resnic, ICTs.
Student Activity Planned after the teaching	Student seminar
Activity Planned outside the Class room, if any	Project work.
Any other Activity	

PNP Transistor — 

NPN Transistor — ϕ

CB, CE and CC configurations:



Relation between α, β & γ — Transistor (CE)

Characteristics.

Determination of h-parameters.

=

P. Silar

1/4/21

TEACHING PLAN (SYNOPSIS)

December-21

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V. Vakula Priya
Course / Group :	III MPC EM & TM
Paper :	5 & I and 5
Name of the Topic	Electric & magnetic fields
Hours required	
Learning Objectives	Knowledge, Understanding, Application
Previous Knowledge to be reminded	Electric fields, magnetic fields & it lines. Amperes law.
Topic Synopsis	Biot-Savarts Law - Explaination and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect & its applications (No derivation - only formulas).
Examples / Illustrations	Given when ever necessary
Additional Inputs	Relation between Electrical and magnetic fields. Soft Hard Rule.
Teaching Aids used	Board & chalk, PPTs, & ICT
References cited	Unified Physics, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignments.
Activity Planned outside the Class room, if any	
Any other Activity	

Electromagnetic Induction:-

Faradays law,
Lenz's law
Self and mutual Inductance
Coefficient of coupling
Calculation of self inductance of a long solenoid
Energy stored in magnetic field.

= P. Sultan

2/12/21 Dept I/c Principal

TEACHING PLAN (SYNOPSIS)

December-21

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	I B.Sc (MPCs) EM
Paper :	I - Mechanics, Waves and oscillations
Name of the Topic	Mechanics of Particles.
Hours required	8 hrs
Learning Objectives	Knowledge, Understanding & Application
Previous Knowledge to be reminded	force, Energy, Power etc.
Topic Synopsis	Review of Newtonic laws of motion. motion of variable mass system motion of a rocket multi stage rocket Concept of impact parameter. Scattering cross. section Rutherford scattering (concept only).
Examples / Illustrations	Given when ever necessary.
Additional Inputs	Types of motions,
Teaching Aids used	PPT, ICT's and Boards chalk
References cited	Unified physics, principles of mechanics.
Student Activity Planned after the teaching	Assignments.
Activity Planned outside the Class room, if any	
Any other Activity	

2/12/21 I/c P. Sultan Principal

TEACHING PLAN (SYNOPSIS)

January-22

of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	I B.Sc (MPCs) EM
Paper :	I Mechanics & waves and oscillations
Name of the Topic	Mechanics & Ultrasonics, Damped ~~waves~~
Hours required	6+
Learning Objectives	Knowledge, understanding, application
Previous Knowledge to be reminded	Simple Harmonic motion, waves.
Topic Synopsis	Simple Harmonic motion & Examples. Wave - Chacs of wave Types of Wavel. Ultrasonics General properties of ultrasonic waves Production of ultrasonic waves
Examples / Illustrations	Given when ever necessary
Additional Inputs	SONAR - complete structure.
Teaching Aids used	PPT, ICTs, Board & Chalk, Digital Board
References cited	Unified Physics, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignment, Mid-1
Activity Planned outside the Class room, if any	To observe different oscillations & vibrations
Any other Activity	

① Piezoelectric method
② Magnetostriction Method.

Detection of Ultrasonics
① Kundt's tube method
② Sensitive flame method
③ Thermal Detectors

Applications of Ultrasonics.
Sear's method of finding the velocity of Ultrasonics in liquid

Undamped oscillations

Simple Harmonic oscillator and solution of the differential equation.

Damped harmonic oscillator & its Differential Equation.

Sig. of the Lecturer

Sig. of the Dept I/c

Sig. of the Principal

TEACHING PLAN (SYNOPSIS)

January-22

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula priya
Course / Group :	III MPC (EM & TM)
Paper :	V Electricity, Magnetism & Electronics
Name of the Topic	Electro magnetic Induction & Alternating current
Hours required	9+
Learning Objectives	Knowledge, understanding, skills.
Previous Knowledge to be reminded	oersted expt, Electric & magnetic fields.
Topic Synopsis	Faraday's law lenz's law self & mutual Inductance coefficient of coupling Calculation of self inductance of a long solenoid. Energy stored in magnetic field. Transformer -
Examples / Illustrations	Given when ever necessary
Additional Inputs	Types of Transformers & Applications.
Teaching Aids used	PPTs, Board & chalk.
References cited	Unified physics, Vikas, Telugu Academy, ICTs.
Student Activity Planned after the teaching	Assignment, mid-2
Activity Planned outside the Class room, if any	Live Projects Assigned.
Any other Activity	

Alternating currents and Electromagnetic waves

A.C & DC currents & voltages.

LR & CR CKts.

vector diagrams.

LCR series & parallel CKts.

Resonant CKt & Q-factor.

Sig. of the I/C

Sig. of the Principal

TEACHING PLAN (SYNOPSIS)

February-22

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	B.Sc MPC TM & EM
Paper :	V
Name of the Topic	Maxwell's Equations
Hours required	4 Hr.
Learning Objectives	Knowledge, understanding
Previous Knowledge to be reminded	Electric magnetic waves, conduction current.
Topic Synopsis	Displacement current. Maxwell's equations - Integral and Differential forms. Maxwell's wave equation. Transverse nature of Electromagnetic waves Poynting theorem.
Examples / Illustrations	Given when ever necessary
Additional Inputs	Hertz Experiment (production of EM waves)
Teaching Aids used	PPTs, Board & chalk, ICTs.
References cited	Unified, Vikas, Telugu Academy, Internet
Student Activity Planned after the teaching	Semester End Exams
Activity Planned outside the Class room, if any	
Any other Activity	

Sig. of the I/C

Sig. of the Principal

TEACHING PLAN (SYNOPSIS)

February-22

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	B.Sc II MPCs (EM)
Paper :	I Mechanics, Waves & Oscillations
Name of the Topic	Forced oscillations, Mechanics of Rigid bodies
Hours required	10 +
Learning Objectives	Knowledge, Understanding
Previous Knowledge to be reminded	Rotatory motion, Angular velocity, Torque.
Topic Synopsis	Rigid body Rotational Kinematic relations Equation of motion for a rotating body, Angular momentum and moment of Inertia Tensor, Euler equations Precession of a Spinning top Precession of the Equinoxes.
Examples / Illustrations	Given when ever necessary.
Additional Inputs	Precession of Atom and Nucleus in magnetic field.
Teaching Aids used	PPT's, Board & chalk, ICTs
References cited	Unified Physics, Telugu Academy, Halliday & Resnick, Internet
Student Activity Planned after the teaching	Assignment, Mid & Exam
Activity Planned outside the Class room, if any	To observe forced oscillations.
Any other Activity	

Forced oscillations:

Forced Harmonic oscillator

Differential equations of forced oscillator and solution.

Resonance

Logarithemic Decrement

Relaxation time

Quality factor.

=

1/2/22
Sig. of the Lecturer

Sig. of the Y/c

Sig. of the Principal

March - 22.

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	T. Vivekela Priya
Course / Group :	B.Sc CMPC
Paper :	VII A Renewable energy
Name of the Topic	Renewable Energy
Hours required	10+ hrs
Learning Objectives	Knowledge, understanding, application, skill.
Previous Knowledge to be reminded	Energy, Types of Energy
Topic Synopsis	Energy Conversion Chemical Energy Electrical Energy Nuclear Energy Radiant Energy. Non-renewable Energy resources: Renewable Energy resources. Advantages & Disadvantages of non renewable Energy resources.
Examples / Illustrations	Given when ever necessary.
Additional Inputs	Mechanism & principle behind solar Energy.
Teaching Aids used	PPTs, ICTs, Board & chalk.
References cited	Telugu Academy, Unified Physics, Internet
Student Activity Planned after the teaching	Assignments, Slip test.
Activity Planned outside the Class room, if any	
Any other Activity	

Y/c Signature

Sig. of the Principle

TEACHING PLAN (SYNOPSIS)

March - 2022

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakeela Priya
Course / Group :	II B.Sc (MPCs) EM
Paper :	IV
Name of the Topic	Electricity, Magnetism & Electronics (Electrostatics)
Hours required	8 +
Learning Objectives	Knowledge, Understanding, application
Previous Knowledge to be reminded	Electric field, Electric lines of forcel.
Topic Synopsis	Electrostatics : Gauss's law & its proof. Differential form of Gauss law. Electric field intensity due to (i) uniformly charged solid sphere and (ii) an infinite conducting sheet of charge. Electrical Potential - equipotential surfaces Potential due to a (i) dipole (ii) uniformly charged sphere.
Examples / Illustrations	Given when ever necessary.
Additional Inputs	Coulombs law & its Derivation.
Teaching Aids used	PPT's, ICT's and Board & chalk.
References cited	Unified physics, Telugu Academy, Internet
Student Activity Planned after the teaching	Assignment, Student
Activity Planned outside the Class room, if any	-
Any other Activity	-

Sig. of the Yc

Sig. of the principal

TEACHING PLAN (SYNOPSIS)

April-2022

Name of the Department / Subject :	PHYSICS
Name of the Lecturer :	T. V. Vakula Priya
Course / Group :	III B.Sc (MPC)
Paper :	VII - A
Name of the Topic	Renewable Energy, Energy Sources
Hours required	10+
Learning Objectives	Knowledge, Skill
Previous Knowledge to be reminded	Energy, Power, Horse power.
Topic Synopsis	Energy sources – Common forms of energy conventional & Non conventional Energy resources Environmental Aspects of Energy :- Green house effect. Global warming Consequences of global warming Various Pollutants and their harmful Effect Pollution due to thermal station.
Examples / Illustrations	Given when necessary.
Additional Inputs	Chloro, flouro carbons & its Effects.
Teaching Aids used	PPT, Board & Chalk, Internet ICTs.
References cited	Unified, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignment & Live projects.
Activity Planned outside the Class room, if any	Practical projects to be made.
Any other Activity	

Sig of Lecturer

Sig of Dept I/c

Sig of the Princip

TEACHING PLAN (SYNOPSIS)

April - 2022

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	II B.Sc (MPCs)
Paper :	IV. Electricity, Magnetism and Electronics
Name of the Topic	Dielectrics
Hours required	8+
Learning Objectives	Knowledge, understanding & Application.
Previous Knowledge to be reminded	Conductors, Insulators.
Topic Synopsis	Dielectrics — polar & non polar Dielectrics Effect of electric field on dielectrics Dielectric strength. Capacitance of a parallel plate capacitor with dielectric slab. Electric displacement D, electric polarization P, Relation btw D, E & P. Dielectric constant & susceptibility. Electric fields in cavities of dielectrics.
Examples / Illustrations	(Polarization of light) Given when necessary
Additional Inputs	Polarization of light
Teaching Aids used	PPT's, Board & chalk.
References cited	Unified, Telugu Academy, ICTS
Student Activity Planned after the teaching	Assignment.
Activity Planned outside the Class room, if any	
Any other Activity	

11/4/22

Sig. of H.O.D

Sig. of Principal

May-22

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	T. V. Vakula Priya
Course / Group :	II B.Sc (MPCs)
Paper :	Paper - 5 Electricity, Magnetism & Electron
Name of the Topic	Electromagnetic Induction
Hours required	8 +
Learning Objectives	Knowledge, understanding, Skill
Previous Knowledge to be reminded	Oersted expt, Electromagnetic Induction Expts
Topic Synopsis	Faraday's laws Lenz's law Self & mutual Induction Self - Inductance of a long solenoid, mutual Inductance of two coils Energy stored in magnetic field Eddy currents and EM damping - Skindepth
Examples / Illustrations	Given when necessary
Additional Inputs	Electromagnetic damping.
Teaching Aids used	PPT's, Board & chalk & ICTs.
References cited	Unified physics, Vikas, Telugu Academy, Internet, Youtube.
Student Activity Planned after the teaching	Assignments, Mid-1
Activity Planned outside the Class room, if any	Project work
Any other Activity	P. Sai P.S Sahu 29/8/2022

Sig. of the I/c

Sig. of the Principal

May-22

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	III B.Sc (MPC)
Paper :	VII A Renewable Energy
Name of the Topic	Energy storage Devices, Solar Energy
Hours required	10+
Learning Objectives	Understanding, knowledge, skill
Previous Knowledge to be reminded	Sun as source of Energy, Capacitors.
Topic Synopsis	Energy storage methods Chemical Energy storage methods. Electromagnetic Energy storage method. Electrostatic Energy storage method. Solar Energy: solar Radiation Terrestrial & extra terrestrial radiations.
Examples / Illustrations	Given when necessary
Additional Inputs	Storage devices in various sectors.
Teaching Aids used	Board & chalk, ICTs, PPTs.
References cited	Unified, TeluguAcademy, Vikas & Internet.
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	Project works.
Any other Activity	

Solar Radiation Geometry
Flat Plate collector
Solar Heating system
Solar cooker - Solarcell.

Sig. of the Lecturer

P. Sulari
Sig of the I/c

Sig of the Principal

TEACHING PLAN (SYNOPSIS)

June - 2022

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula Priya
Course / Group :	II B.Sc (MPCs
Paper :	Paper - 5 - Electricity, Magnetism & Electronics
Name of the Topic	Magnetostatics
Hours required	08 +
Learning Objectives	knowledge, understanding
Previous Knowledge to be reminded	Magnetism, Relation btw Electricity & magnetism
Topic Synopsis	Biot-Savarts law and its applications. (i) circular loop (ii) solenoid Divergence and curl of magnetic field, Amperes circuital law & its applications Hall Effect and applications. Ballistic Galvanometer.
Examples / Illustrations	Given when necessary.
Additional Inputs	Different Galvanometers & Ammeters.
Teaching Aids used	PPTs, Board & chalk, ICTs, Internet.
References cited	Unified, Telugu Academy, Vikas & Internet.
Student Activity Planned after the teaching	Assignments, Student seminars mid-2
Activity Planned outside the Class room, if any	Live projects & Practicals.
Any other Activity	

P. Sulari
Sig of the I/c

Sig of the Principal

June-2022

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula priya
Course / Group :	III B.Sc (MPC) (TM & EM)
Paper :	VII A. Renewable Energy
Name of the Topic	Solar, Hydrogen & wind Energy.
Hours required	12+ Hrs
Learning Objectives	Knowledge, Understand.
Previous Knowledge to be reminded	Solar energy, solar Radiation.
Topic Synopsis	Sun as a source of energy Terrestrial and Extra Terrestrial radiation. Solar Radiation Geometry Flat plate collector., solar cooker, solar cell. Wind Energy: origin of winds. Wind energy conversions Components of wind Turbines. Chacs of wind turbine.
Examples / Illustrations	Given when necessary
Additional Inputs	Measurement of Solar Radiation
Teaching Aids used	Board & chalk, PPTs, ICTs
References cited	Unified, Vikas, Telugu Academy, Internet.
Student Activity Planned after the teaching	Assignments, Student Seminar & Mid-2
Activity Planned outside the Class room, if any	Live Projects & Practicals.
Any other Activity	

Hydrogen Energy:

Hydrogen as Energy carrier
Hydrogen production (Electrolysis of water)
Hydrogen storage options
Uses of Hydrogen as fuel.

Sig. of the Lecturer Sig. of the I/c Sig. of the Principal

TEACHING PLAN (SYNOPSIS)

June - 2022

Name of the Department / Subject :	Physics
Name of the Lecturer :	T.V.Vakula priya
Course / Group :	I B.Sc (MPCA & DSCS)
Paper :	I S.D (Solar Energy)
Name of the Topic	Solar radiation
Hours required	16+
Learning Objectives	Knowledge, understanding
Previous Knowledge to be reminded	Sun as a source of Energy
Topic Synopsis	Solar Radiation, Solar radiation at the earth's surface. measurement of solar Radiation. Pyrheliometer, Pyrnometer, sunshine recorder., Prediction & availability Solar Energy - Importance, Storage, Solar pond.
Examples / Illustrations	Storage devices. Given when necessary
Additional Inputs	.Storage devices
Teaching Aids used	Board & chalk, PPTs, ICTs
References cited	Solar Energy text book & ICTs.
Student Activity Planned after the teaching	Assignment.
Activity Planned outside the Class room, if any	
Any other Activity	

Sig. of the Lecturer Sig. of the I/c Sig. of the Principal

S.R.R. & C.V.R. GOVT. DEGREE COLLEGE

(AUTONOMOUS)

NAAC accredited with 'B+' Grade

Machavaram, VIJAYAWADA - 520 004.

TEACHING PLAN (SYNOPSIS)

2021 - 2022

Name of the Lecturer V. Umalakshmi

Department of Physics

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

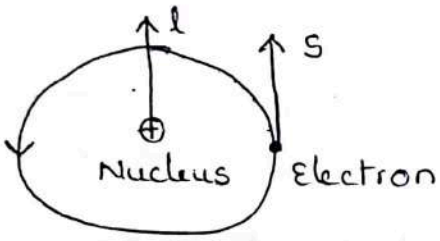
Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.Cs
Paper :	Modern Physics
Name of the Topic	Atomic Physics & Molecular Physics
Hours required	6+6 hours
Learning Objectives	To understand the concept of Space quantization, Spinning electron and raman effect
Previous Knowledge to be reminded	Bohr's atomic model, Sommer field's model
Topic Synopsis	Introduction to Atomic Physics. Vector atom model 1) Space quantization 2) Spinning Electrons Orbital angular momentum $P_l = \sqrt{l(l+1)} \cdot \frac{h}{2\pi}$ where $l = 0, 1, 2, \ldots$ etc $(n-1)$ l 0 1 2 3 4 5 s p d f g h
Examples / Illustrations	Raman Spectroscopy images of different Compounds
Additional Inputs	Stark effect (basic idea), Selection rules
Teaching Aids used	Board & chalk, PPT
References cited	B.Sc Physics, Vol 4, Telugu Akademy
Student Activity Planned after the teaching	Assignment, LMS video
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

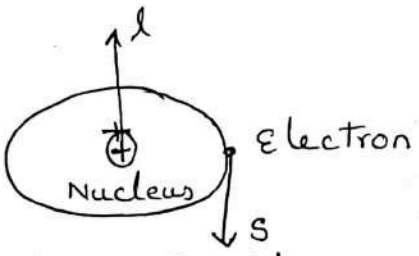
Maximum number of electrons $2(2l+1)$ Sub-shell

$P_S = \sqrt{S(S+1)}\ \frac{h}{2\pi}$ $\quad S = \frac{1}{2}, S = -\frac{1}{2}$

$P_j = \sqrt{j(j+1)}\ \frac{h}{2\pi}$ $\quad j = l+s, l-s$



Parallel
$j = l+s$



Anti - Parallel
$j = l-s$

Quantum numbers $n, l, s, j, m_l, m_s, m_j$

Stern - Gerlach Experiment

L - S Coupling

$L = (l_1 + l_2 + \cdots)$

$S = (s_1 + s_2 + \cdots)$

$J = L+S$

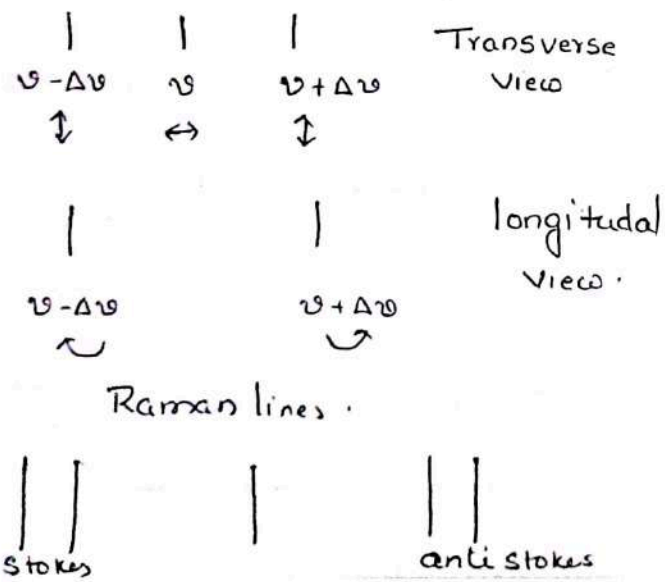
J - J coupling

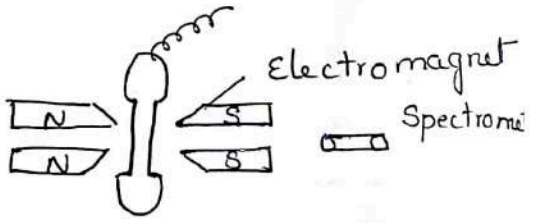
$j_1 = l_1 + s_1, \ j_2 = l_2 + s_2, \ldots$

$J = (j_1 + j_2 + \cdots) = \Sigma j$

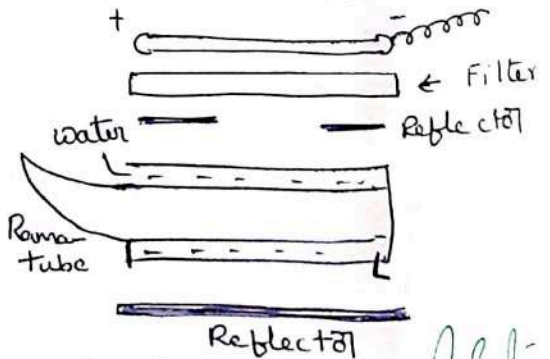
Zeman effect concept

~~Raman~~ Effect





Raman Effect



Application of raman effect

P. Sahu

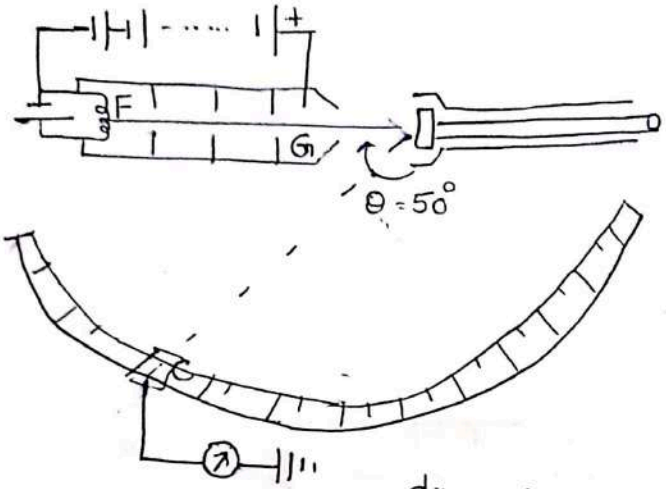
Scanned with OKEN Scanner

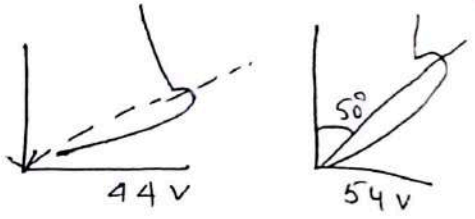
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	B.Sc (M.P.C.S)
Paper :	Modern Physics
Name of the Topic	Matter Waves & Uncertainty Principle
Hours required	12.
Learning Objectives	Concept of matter waves & Uncertainty
Previous Knowledge to be reminded	Plank's theory, Wave properties of light
Topic Synopsis	De-Broglie's hypothesis of Matter Waves $\lambda = \frac{h}{mv} = \frac{h}{p}$ different Expressions a) $\lambda = \frac{h}{\sqrt{2mE}}$ b) $\lambda = \frac{h}{\sqrt{2mqV}}$ c) $\lambda = \frac{h}{\sqrt{3mKT}}$ d) $\lambda = \frac{12.26}{\sqrt{V}}$ A° for electron when $V=0$, $\lambda=\infty$ $V=\infty$ $\lambda=0$
Examples / Illustrations	Electron microscope
Additional Inputs	Complimentary Principle of Bohr
Teaching Aids used	Black board, PPT
References cited	B.Sc Physics vol 4 Telugu Akademy
Student Activity Planned after the teaching	Assignment B.Sc Physics vol 4 Telugu Akademy
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

Davission and Germer's Electron diffraction Experiment





$$\lambda = \frac{12.26}{\sqrt{54}} = 1.67 \text{Å}$$

Wave velocity $\frac{dx}{dt} = \frac{\omega}{K} = v_p$ $\quad v_g = v_p - \lambda \frac{dv_p}{d\lambda}$

Group velocity $v_g = \frac{d\omega}{dp}$

Uncertainty Principle

$\Delta p \cdot \Delta x \approx h$ $\qquad$ $\Delta x \cdot \Delta p \geq \frac{h}{2\pi}$

$\Delta E \cdot \Delta t \approx h$ $\qquad$ $\Delta t \cdot \Delta E \geq \frac{h}{2\pi}$

$\Delta J \cdot \Delta \theta \approx h$

Applications of Uncertainty Principle

1) Non-existence of Electrons and Existence of protons & neutrons in nucleus.

2) Binding energy of an electron in atom.

Experimental illustrations of consequence of uncertainity principle

i) Determination of position of a paretick by Gamma ray microscope.

2) Diffraction by a Single slit

P. Gilani

Scanned with OKEN Scanner

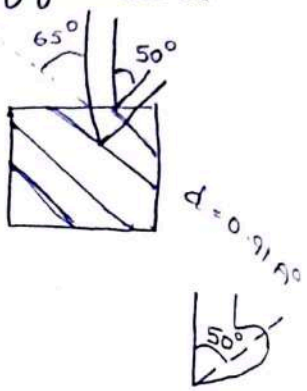
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	III MPCS
Paper :	Modern Physics
Name of the Topic	Quantum (Wave) Mechanics
Hours required	12.
Learning Objectives	to understant the energy levels of electrons
Previous Knowledge to be reminded	Wave nature of light & matter
Topic Synopsis	Wave properties, De-Broglie's hypothesis of matter waves $\lambda = \frac{h}{mv} = \frac{h}{p}$ $\lambda = \frac{h}{\sqrt{2mE}}$ $\lambda = \frac{h}{\sqrt{2mqV}}$ $\lambda = \frac{h}{\sqrt{2m(3/2)KT}}$
Examples / Illustrations	electronic energy levels
Additional Inputs	Bohr's principle of complementary
Teaching Aids used	Board & chalk, virtual lab
References cited	Unified Physics, Vol-6
Student Activity Planned after the teaching	Assignment & Test
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

Properties of matter waves

Davission and Germer's electron diffraction Experiment



$$\lambda = \frac{12.26}{\sqrt{V}}\ A^\circ$$

$$\theta = \frac{180^\circ - 50^\circ}{2} = 65^\circ$$

① Wave velocity $\frac{dx}{dt} = \frac{\omega}{K} = v_p$

② Group velocity $v_g = \frac{d\omega}{dp}$ $\qquad v_g = v_p - \lambda \frac{dv_p}{d\lambda}$

Uncertainty Principle

$$\Delta x \cdot \Delta p \geq \frac{h}{2\pi}$$

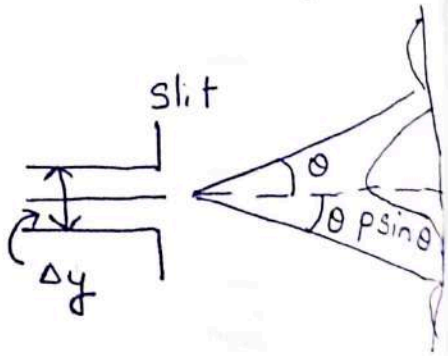
$$\Delta E \cdot \Delta t \approx h$$

$$\Delta J \cdot \Delta \theta = h$$

determination of the position of a particle by Gamma Ray microscope

$$\Delta x \approx \frac{\lambda}{2\sin\theta}$$

Diffraction by a Single Slit



$$\Delta y = \frac{\lambda}{\sin\theta}$$

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	III MPCs
Paper :	Modern Physics
Name of the Topic	Nuclear Physics
Hours required	12.
Learning Objectives	the structure of nuclie, radioactivity
Previous Knowledge to be reminded	Proton, neutron properties
Topic Synopsis	General Properties of Nuclei Basic ideas of nucleus - Size, mass, charge density (matter energy), binding energy, angular momentum, parity, magnetic moment, electric moments, Liquid drop model Shell model magic numbers
Examples / Illustrations	Solar System
Additional Inputs	Semi emperical formula (Concept only)
Teaching Aids used	Black board, PPT
References cited	Unified Physics vol 6
Student Activity Planned after the teaching	Assignment, test
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

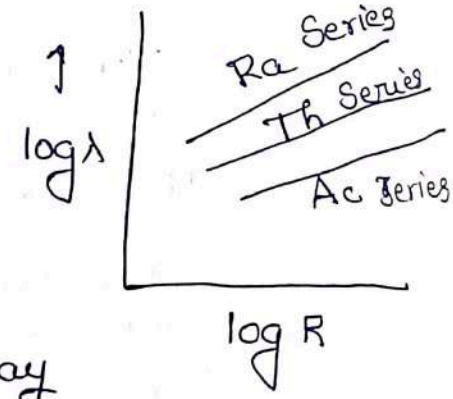
Radioactivity decay

Range of α particles

Range - Energy relation (Geiger's law)

$R = a v^3$

$R = b E^{3/2}$



α - decay

Geiger - Nuttal law

$$\log \lambda = A + B \log R$$

Gamow's theory of α-decay

$$\lambda = \left(\frac{v}{2r_0}\right) P$$

β - decay

emission of electron (β^-)

the positron Emission (β^+)

Electron capture

Nutrino hypothesis.

P. Sulai

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCS
Paper :	Modern Physics
Name of the Topic	Crystal Systems & Superconductivity
Hours required	12.
Learning Objectives	To know the crystal structure & superconductivity
Previous Knowledge to be reminded	Melting temperature
Topic Synopsis	Amorphous and crystalline materials difference between Amorphous and crystalline materials, unit cells, Crystal Systems, Miller indices. [h k l] Monoclinic, triclinic, cubic, Orthohedral, Rhombohedral, Tetrahedral Systems.
Examples / Illustrations	Maglev trains
Additional Inputs	XRD Analysis
Teaching Aids used	Black board, Youtube Video
References cited	Unified Physics vol 6
Student Activity Planned after the teaching	Assignment test
Activity Planned outside the Class room, if any	
Any other Activity	

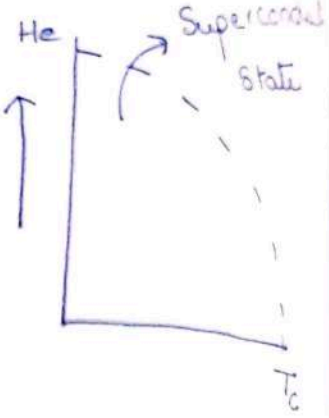
Scanned with OKEN Scanner

Bragg's law

$2d \sin\theta = n\lambda$.

diffraction of x rays by crystals.

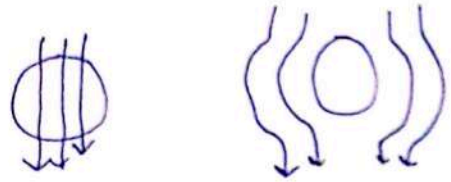
Super conductivity :-



Critical temparature

$$H_e(T) = H_e(0)\left[1 - \frac{T^2}{T_c^2}\right] \rightarrow (1)$$

Meissner effect :-



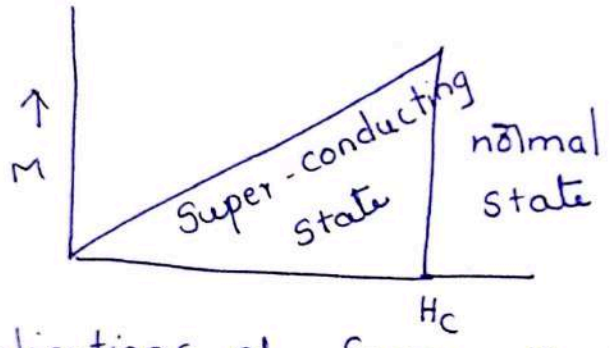
Isotope effect

$T_c M^{\alpha} = \text{Constant}$

Type - 1 Super conductors

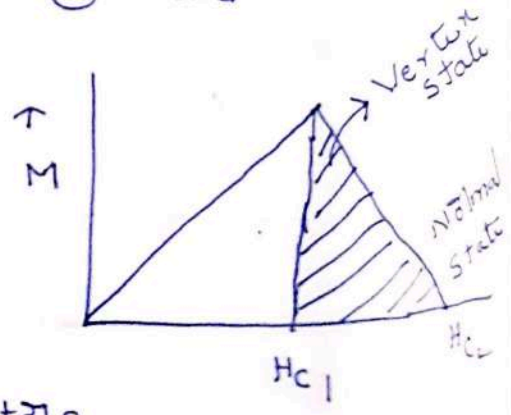
① Soft

②



Type - 2 Superconductors

② Hard



Applications of Super Conductors

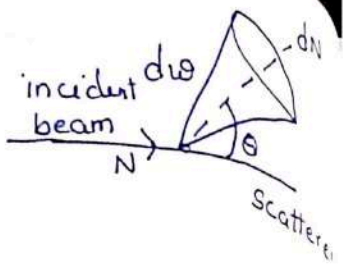
Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	V. Umalakshmi, Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.Co
Paper :	Mechanics, Waves and Oscillations
Name of the Topic	Mechanics of Particle and Rigid bodies
Hours required	12
Learning Objectives	Apply mechanical aspects to Rocket & Top motion
Previous Knowledge to be reminded	laws of linear motion, Basics of collisions
Topic Synopsis	Review of Newton's laws of motion. Motion of variable mass system $M\frac{dv}{dt} = F_{ext} + F_{reaction}$ Motion of a Rocket $M\frac{dv}{dt} = -u\frac{dM}{dt} - Mg$ -① $v = v_0 - u\log_e\frac{M}{M_0} - gt$ -② Multistage Rocket
Examples / Illustrations	Iss Rocket launching video
Additional Inputs	Gyroscope
Teaching Aids used	Black board, PPT
References cited	unified Physics vol 1
Student Activity Planned after the teaching	Assignment test
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

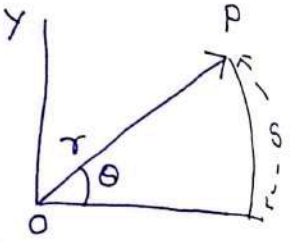
Scattering cross section $\sigma_{sc} = \frac{dN}{N}$



Rutherford Scattering

$$N = \frac{Q n t z^2 e^4}{16 \pi^2 \varepsilon_0^2 r^2 m^2 v_0^4 \sin^4 \phi/2}$$

Rotational kinematics relations :-



$\theta = \frac{S}{r}$ radians

$\omega = \frac{d\theta}{dt}$ rad/sec

$\alpha = \frac{d\omega}{dt}$

$\omega = \omega_0 + \alpha t \; ; \; \theta = \omega_0 t + \frac{1}{2} \alpha t^2 \; ; \; \omega^2 = \omega_0^2 + 2\alpha\theta$

$v = r\omega$ $\qquad L = I\omega$

$I = 2 K.E / \omega^2$ $\qquad \tau = I \frac{d\omega}{dt}$

Euler's Equation

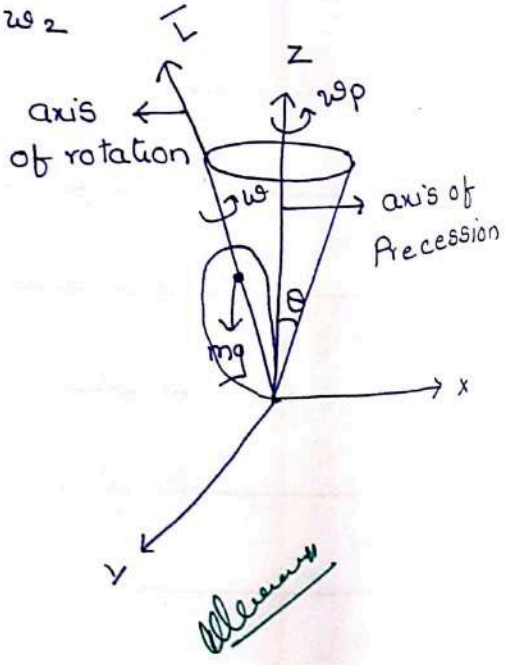
$$\tau_1 = I_1 \frac{d\omega_1}{dt} + (I_3 - I_2)\omega_2\omega_3$$

$$\tau_2 = I_2 \frac{d\omega_2}{dt} + (I_1 - I_3)\omega_1\omega_3$$

$$\tau_3 = I_3 \frac{d\omega_3}{dt} + (I_2 - I_1)\omega_1\omega_2$$

Spinning Top.

$$\omega_p = \frac{mgr}{I\omega}$$



P. Silan

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.Ca
Paper :	Mechanics, Waves and Oscillations
Name of the Topic	Motion in a Central Field
Hours required	12.
Learning Objectives	Understand Kepler's laws and motion of Satellite
Previous Knowledge to be reminded	Polar Coordinates, curl of vector
Topic Synopsis	Central forces. $F = \hat{r}\, f(r)$ Ex:- Gravitational force $F_{12} = -G\frac{m_1 m_2}{r^2}\hat{r}$; $f(r) = \frac{1}{r^2}$ Central forces are conservative. $\nabla \times \bar{F} = 0$ $V = \frac{dr}{dt}\hat{r} + r\cdot\frac{d\theta}{dt}\hat{\theta}$ $a = a_r\hat{r} + a_t\hat{\theta}$
Examples / Illustrations	Indian Satellite launching videos
Additional Inputs	coriolis force
Teaching Aids used	Board & chalk, PPT
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

radial acceleration $= \frac{d^2r}{dt^2} - r\left(\frac{d\theta}{dt}\right)^2$

$r^2 \frac{d\theta}{dt} = h$

$\frac{d^2u}{d\theta^2} + u = \frac{P}{h^2u^2}$

Kepler's law

i) $\epsilon = \frac{Ah^2}{\mu}\left[1 + \frac{2Eh^2}{m\mu^2}\right]^{1/2}$

ii) $\frac{dA}{dt} = \frac{h}{2}$ - Constant

iii) $T^2 \propto a^3$

Motion of Satellites

Satellite: - types

orbital velocity $V = R\sqrt{\frac{g}{r}}$

$T = \frac{2\pi (R+h)^{3/2}}{R\sqrt{g}}$

$L = \sqrt{GMm^2r} = \text{Const}$

Geostationary Satellites

Geosynchronous Satellites.

Scanned with OKEN Scanner

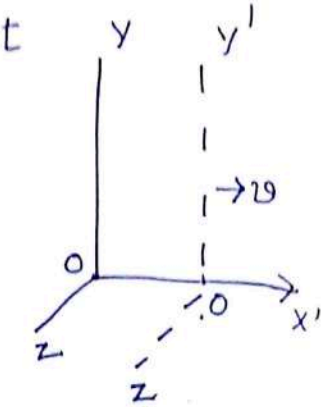
TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCa
Paper :	Mechanics, Waves and Oscillations
Name of the Topic	Relativistic Mechanics
Hours required	12
Learning Objectives	Understanding postulates of Special theory
Previous Knowledge to be reminded	Newtonian Mechanics
Topic Synopsis	Introduction to relativity, Frames of reference, Gallilean transformations $x' = x - vt$ $\quad x = x' + vt$ $y' = y$ $\quad y = y'$ $z' = z$ $\quad z = z'$ $t' = t$ $\quad t = t'$ Postulates of the special theory of relativity
Examples / Illustrations	Twin paradox
Additional Inputs	Addition of velocities
Teaching Aids used	PPT
References cited	Unified Physics
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

Michelson - Morley experiment

negative result



Lorentz's transformation

$$x' = K(x - vt)$$
$$x = K(x' + vt')$$
$$t' = K\left[t + \frac{x}{v}\left(1 - \frac{1}{K^2}\right)\right]$$

$$x' = \frac{x - vt}{\sqrt{1 - \frac{v^2}{c^2}}} \quad ; \quad t' = \frac{t - (vx/c^2)}{\sqrt{1 - v^2/c^2}}$$

length contraction

$$l = l'\sqrt{1 - v^2/c^2}$$

Time dilation

$$\Delta t' = \frac{\Delta t}{\sqrt{1 - v^2/c^2}}$$

Variation of mass

$$m = \frac{m_0}{\sqrt{1 - v^2/c^2}}$$

P. Silan

P.B Sall
29/8/2022

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCa
Paper :	Mechanics, Waves and Oscillations
Name of the Topic	Oscillators
Hours required	12
Learning Objectives	Examine the Phenomenon of SHM
Previous Knowledge to be reminded	Properties of Waves.
Topic Synopsis	Simple harmonic Oscillator and Solutions of the differential equation, Damped harmonic oscillator. Forced harmonic oscillator (no derivation) their differential equations and Solutions Resonance, logorithmic decrement, Relaxation time, Quality factor.
Examples / Illustrations	Sceing
Additional Inputs	types of Resonance
Teaching Aids used	Black board & chalk.
References cited	Telugu Academy Physics - I
Student Activity Planned after the teaching	listening & Watching IMS Videos.
Activity Planned outside the Class room, if any	↑ ↓ Assignment
Any other Activity	

Scanned with OKEN Scanner

Fourier theorem and evaluation of the Fourier coefficients

Analysis of Periodic wave function

- Square wave
- Triangular wave.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCa
Paper :	Mechanics, Waves & Oscillations
Name of the Topic	Strings and their behaviour
Hours required	12
Learning Objectives	understand the nature ultrasonics
Previous Knowledge to be reminded	Properties of waves, types of waves
Topic Synopsis	Transverse wave propagation along a stretched string. General solution of wave equation and its significance, Modes of vibration of stretched string clamped at ends, overtones and Harmonics Ultrasonics, General properties of ultra sonics
Examples / Illustrations	A Sonometer
Additional Inputs	Non destructive Testing
Teaching Aids used	Black board & chalk
References cited	Unified Physics 1
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

Production of ultrasonics

by Piezoelectric methods

magnetostriction methods

Detection of ultrasonics

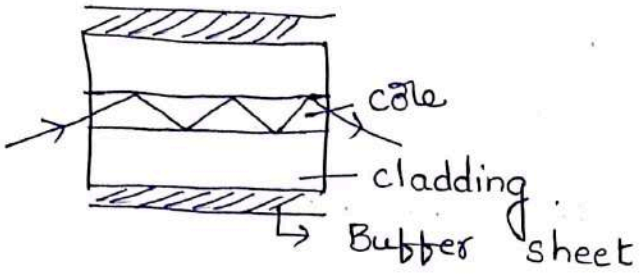
Application of ultrasonics.

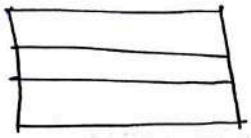
Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

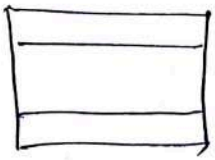
Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCa
Paper :	Wave Optics
Name of the Topic	Laser's and its applications
Hours required	12
Learning Objectives	To understand the working & applications of LASERS
Previous Knowledge to be reminded	Coherence
Topic Synopsis	Introduction Spontaneous emission, Stimulated emission, Population inversion, Laser principle, Einstein Coefficient (concept only) Types of lasers He-Ne laser Ruby laser Application of laser.
Examples / Illustrations	Hologram
Additional Inputs	CO_2 laser
Teaching Aids used	Black board & chalk
References cited	Unified Physics - 1
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner



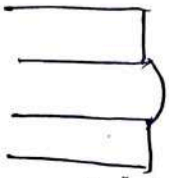


• SMF



MMF

Step Index



~~Multi Mode~~ b
graded index

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.Ca
Paper :	Wave Optics
Name of the Topic	Fibre Optics
Hours required	6
Learning Objectives	To examine the working principle of Optical fiber
Previous Knowledge to be reminded	Total internal reflection
Topic Synopsis	Introduction to Fibres. different types of optical Fibres ↳ step index & graded inder ↳ SMF & MMF Principle's of Optical fibre Communication Advantages of optical communication
Examples / Illustrations	Internet cables.
Additional Inputs	Numerical Aparture
Teaching Aids used	Black board & chalk
References cited	Unified Physics - 1
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

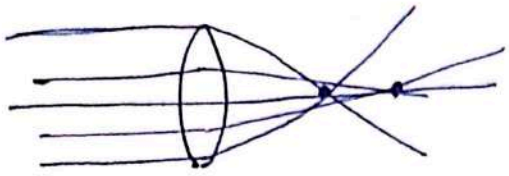
V. Umal

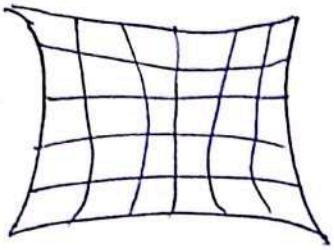
Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

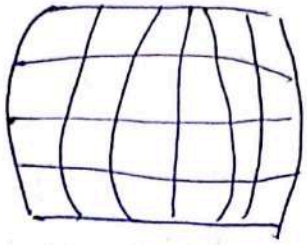
Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.Ca.
Paper :	Wave Optics
Name of the Topic	Abberations
Hours required	6.
Learning Objectives	To know the cause and rectifications of image abberation
Previous Knowledge to be reminded	lens - focal length
Topic Synopsis	Introduction. Abberations Monochromatic — Chromatic ↳ Spherical ↳ Chromatic abberation ↳ Coma ↳ Astigmatism ↳ Curvature of field ↳ distortion
Examples / Illustrations	Blurred images.
Additional Inputs	Pixel
Teaching Aids used	Black board & chalk
References cited	Unified Physics 1
Student Activity Planned after the teaching	Assignment
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner





Pin - cushion



Barrel - type

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics & Electronics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	MPCa
Paper :	Wave Optics
Name of the Topic	Polarization
Hours required	12
Learning Objectives	To know the Production & detection of Polarization
Previous Knowledge to be reminded	Wave Properties, Concept of Polarization
Topic Synopsis	Polarized light Methods of Production of Plane polarized light, Double Refraction, Brewster's law, Mallus law, Nicol law Acting as polarizer and Analyzer, Quater Wave plate, Half Wave plate, plane, Circularly and Elliptically polarized light
Examples / Illustrations	Polaroid glasses
Additional Inputs	L-type & D-type
Teaching Aids used	Black board & chalk, PPT
References cited	Unified Physics I
Student Activity Planned after the teaching	Assignment Internal test
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

Production and detection

Optical activity

determination of Specific Rotation

Basic Principle of LCDs.

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject :	Physics
Name of the Lecturer :	V. Umalakshmi
Course / Group :	M.P.C.S
Paper :	Solar Energy
Name of the Topic	Solar Radiation
Hours required	6
Learning Objectives	Acquire knowledge on Solar radiation & Storage principles
Previous Knowledge to be reminded	Nuclear reaction, Light properties.
Topic Synopsis	Sun as a source of energy, Solar radiation, Solar radiation at the Earth's surface, Measurement of Solar radiation Pyroheliometer pyranometer Sunshine recorder prediction of availabe solar radiation Solar energy - Importance, Storage of
Examples / Illustrations	Ancient Sun dail
Additional Inputs	DNI calculation
Teaching Aids used	E-book
References cited	Text book on Solar Energy APCCE
Student Activity Planned after the teaching	Observing Sunpath.
Activity Planned outside the Class room, if any	Visit Solar Sunpath website.
Any other Activity	

Scanned with OKEN Scanner

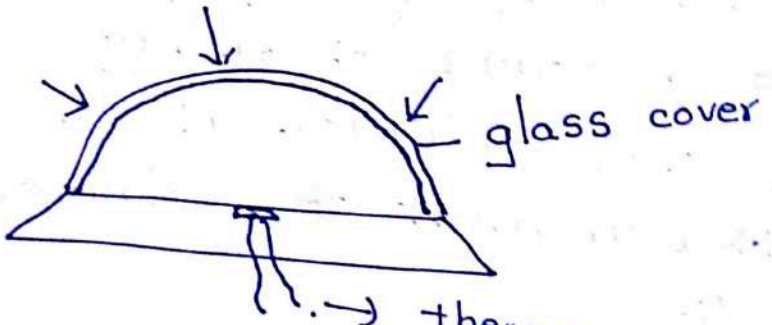
Storage of Solar energy

→ Electrochemical Storage

→ Batteries

→ Mechanical storage - Flywheel

→ Solar pond



Pyranometer

Scanned with OKEN Scanner

TEACHING PLAN (SYNOPSIS)

Name of the Department / Subject	Physics & Electronics
Name of the Lecturer	V. Umalakshmi
Course / Group	M.P.C.S
Paper	Solar Energy
Name of the Topic	Solar Thermal Systems
Hours required	10
Learning Objectives	Get familiarized with various collecting techniques of solar thermal systems
Previous Knowledge to be reminded	Characteristics of materials
Topic Synopsis	Principle of conversion of Solar radiation into heat, collectors used for solar thermal conversion : Flat Plate collectors : Concentrating collectors → parabolic dish type → Parabolic trough type
Examples / Illustrations	Largest solar cooker in the world
Additional Inputs	Frensel collectors
Teaching Aids used	E-book, PPT
References cited	Solar Energy G.D Roy
Student Activity Planned after the teaching	Assignment, Test
Activity Planned outside the Class room, if any	
Any other Activity	

Scanned with OKEN Scanner

→ Central tower type

Solar thermal Power plant

Solar cookers

→ Box type

→ panel type

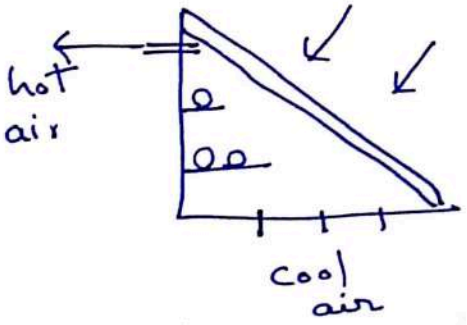
→ concentrating disch type

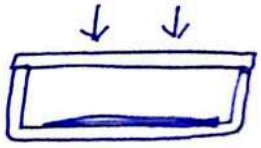
Solar Hot water Systems

→ Natural Circulation

→ Forced "

Solar dryer





Scanned with OKEN Scanner