

(3343 / STA M-3301)**BSC (STAT) Degree (Honours) Examinations- 24 OCT 2025**

SEMESTER-III (REGULAR)

(ADMITTED BATCH 2024-25 ONLY)

THEORETICAL DISCRETE DISTRIBUTIONS

TIME: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section –A**Answer any FIVE of the following questions:****5x4=20M**

1. Define discrete uniform distribution and find its mean
2. Find PGF of Binomial distribution.
3. Find the mean of Poisson distribution.
4. Derive CF of Poisson distribution.
5. Define Negative Binomial distribution
6. Find the mean of Negative Binomial distribution.
7. Define Geometric distribution.
8. Find CF of Geometric distribution.
9. Define Hyper Geometric distribution.
10. Find the variance of Hyper Geometric distribution.

Section –B**Answer ALL of the following questions:****5x8=40M**

11. Derive MGF of Binomial distribution and hence or otherwise find Mean and Variance.
OR
12. Define Binomial distribution and derive the Recurrence relation for probabilities of binomial distribution.
13. Show that Poisson distribution is a limiting case of binomial distribution.
OR
14. State and Prove additive property of Poisson distribution.
15. State and Prove additive property of Negative Binomial distribution, underlying the condition of existence.
OR
16. Derive the recurrence relation for probabilities of Negative Binomial distribution.
17. State and Prove Memory less property of Geometric distribution.
OR
18. Define Geometric distribution and find recurrence relation for probabilities.
19. Derive the Mean and Variance of Hyper Geometric distribution.
OR
20. Derive the recurrence relation for the probabilities of Hyper Geometric distribution.

* * *

(3359 / STA M-3302)**BSC (STAT) Degree (Honours) Examinations- 27 OCT 2025****SEMESTER-III (REGULAR)****(ADMITTED BATCH 2024-25 ONLY)****THEORETICAL CONTINUOUS DISTRIBUTIONS**

TIME: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section –A**Answer any FIVE of the following questions:****5x4=20M**

1. Define Rectangular distribution.
2. Find MGF of uniform distribution.
3. Define Exponential distribution.
4. Find Distribution function of Exponential distribution.
5. Define Gamma distribution with one and two parameters.
6. Find the Harmonic Mean of Beta distribution of first kind.
7. Explain the importance of Normal distribution.
8. Find Mean of Normal distribution.
9. Define Standard Normal distribution.
10. Write the applications of Chi-square distribution.

Section –B**Answer ALL of the following questions:****5x8=40M**

11. Derive Mean and Variance of Uniform distribution .
OR
12. Find the first four central moments of uniform distribution over (0,1).
13. Derive MGF of Exponential distribution and hence find the Mean and Variance.
OR
14. State and Prove Memory less property of Exponential distribution.
15. Find the Mean and Variance of Beta distribution of First kind.
OR
16. Explain limiting form of Gamma distribution.
17. Derive MGF of Normal distribution.
OR
18. In Normal distribution, Show that Mean= Median = Mode
19. Derive MGF of Standard Normal distribution and Find Mean and Variance.
OR
20. Define Chi-Square distribution and explain it's properties and applications.

(3375 / STA M-3303)**BSC (STAT) Degree (Honours) Examinations- 12 NOV 2025**

SEMESTER-III (REGULAR)

(ADMITTED BATCH 2024-25 ONLY)

STATISTICAL METHODS

TIME: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section –A**Answer any FIVE of the following questions:****5x4=20M**

1. Explain about Principle of Least Squares.
2. Explain about Fitting of Straight line.
3. Define Rank Correlation.
4. Write a Short note on Scatter diagram.
5. Explain about Coefficient of concurrent deviation.
6. Explain about Probable Error.
7. Write the differences between Correlation and Regression.
8. Show that 'r' is GM of two regression coefficients.
9. Explain the independence of 2 attributes .
10. Explain about Consistency of data.

Section –B**Answer ALL of the following questions:****5x8=40M**

11. Explain about Fitting of Second degree parabola by the method of least squares.

OR

12. Explain about Fitting of Exponential Curve by the method of least squares.

13. Show that Karl Pearson's coefficient of correlation is independent of change of Origin and Scale.

OR

14. Calculate the Rank Correlation coefficient for the following data.

X	10	15	12	17	13	16	24	14	22	20
Y	30	42	45	46	33	34	40	35	39	38

15. Explain about Partial and Multiple correlation coefficient.

OR

16. Explain about (i) Correlation Ratio (ii) Intra Class correlation.

17. Define Regression and Derive the regression line of Y on X.

OR

18. Explain about Angle between Two Regression lines.

19. Show that $Q = 2Y / (1 + Y^2)$.

OR

20. Explain various methods of Measuring Association.

Regd. No: _____

(3391 / STA M-3304)

BSC (STAT) Degree (Honours) Examinations- 31 OCT 2025

SEMESTER-III (REGULAR)

(ADMITTED BATCH 2024-25 ONLY)

INFERENTIAL STATISTICS

VE: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section -A

Answer any FIVE of the following questions:

5x4=20M

1. Explain : a) Unbiasedness. b) Consistency.
2. Explain about Method of Moments.
3. Define: a) Null Hypothesis. b) Alternative Hypothesis.
4. Define: a) Critical Region. b) Level of Significance.
5. Explain the Large sample test for Single Mean.
6. Explain the Large sample test for Single Proportion.
7. Explain the Small sample t- test for Single Mean.
8. Describe about Paired t-test.
9. Explain Run test for Randomness :
10. Explain about Sign test.

Section -B

Answer ALL of the following questions:

5x8=40M

11. Explain the Criteria of Good Estimator.
OR
12. Find the MLE for the parameters of Normal Population.
13. Explain Type-I and Type-II errors and also Power of test.
OR
14. State and Prove Neymann-Pearson Lemma.
15. Explain the Large sample test for difference of Two Proportions.
OR
16. Explain the Large sample test for difference of Standard deviations.
17. Define Chi-Square distribution and explain the Chi-square for goodness of fit.
OR
18. Explain t-test for equality of two means.
19. Explain Median test.
OR
20. Explain Advantages and Disadvantages of Non parametric tests.

* * *

Regd. No: _____

(3392 / AI M-3304)

BSC (AI) Degree (Honours) Examinations- 31 OCT 2025

SEMESTER-III (REGULAR)

(ADMITTED BATCH 2024-25 ONLY)

INFERENTIAL STATISTICS (AI)

ME: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section –A

Answer any FIVE of the following questions:

5x4=20M

1. Explain : a) Unbiasedness. b) Consistency.
2. Explain the Concept of Confidence interval.
3. Define: a) Null Hypothesis. b) Alternative Hypothesis.
4. Define: a) Critical Region. b) Level of Significance.
5. Explain the Small sample t- test for Single Mean.
6. Describe about Paired t-test.
7. Explain F-test for Variances.
8. Define F-distribution and write it's properties.
9. Explain Run test for Randomness .
10. Explain about Sign test.

Section –B

Answer ALL of the following questions:

5x8=40M

11. Explain the Criteria of Good Estimator.
OR
12. Find the MLE for the parameters of Normal Population.
13. Explain Type-I and Type-II errors and also Power of test.
OR
14. Explain the Large sample test for difference of Two Proportions.
15. Explain t-test for equality of two means.
OR
16. Explain the Chi-square test for independence of attributes.
17. Explain ANOVA one-way classification.
OR
18. Explain ANOVA two-way classification.
19. Explain Median test.
OR
20. Explain Advantages and Disadvantages of Non parametric tests.

* * *

Regd. No: _____

(3313 / STA M-3305)

BSC (DATA SC) Degree (Honours) Examinations- 03 NOV 2025

SEMESTER-III (REGULAR/SUPPLY)

(ADMITTED BATCHES 2023-24 & 2024-25 ONLY) MINOR PAPER

STATISTICAL METHODS & PROBABILITY DISTRIBUTIONS

TIME: 3 Hrs

Max. Marks: 60

Pass Marks: 24

Section-A

Answer any FIVE questions

5 x 4 = 20M

1. Define coefficient of determination and its interpretation
2. Define probable error and its properties
3. Define probability density function
4. Define distribution function and state its properties
5. Derive the m.g.f of Binomial distribution
6. Find $P(X=6)$, if the value of the mean is 3.4 for poisson distribution
7. Explain uniform distribution
8. Obtain mean and variance for Exponential distribution
9. Define Standard normal distribution
10. Explain the importance of Normal distribution

Section-B

Answer all the following questions:

5 x 8 = 40 marks

11. Explain Correlation ratio and intra class correlation

(OR)

12. Explain Partial and multiple correlation coefficients

13. Define expectation of a random variable and its properties

(OR)

14. Explain Cumulant generating function and its properties

15. Obtain M.G.F, mean and variance for poisson distribution

(OR)

16. Explain Geometric distribution and its lack of memory property

17. Obtain mean, variance and distribution function for uniform distribution

(OR)

18. Explain Exponential distribution and its memoryless property

19. Define Normal distribution and State its properties

(OR)

20. Explain area property of normal distribution .

Regd. No: _____

(5444/ STA M-5305)

B.SC (DATA SC) Degree (Honours) Examinations- 30 OCT 2025

SEMESTER-V (REGULAR)

(ADMITTED BATCH 2023-24 ONLY)

APPLIED STATISTICS (M)

TIME: 3 Hrs

Max Marks:60

Pass Marks : 24

SECTION-A

Answer any FIVE of the following

(5x4=20 M)

1. Define Time series. Write its Uses.
2. Explain Irregular variations in Time series.
3. Explain the Method of Simple Averages.
4. Explain Deseasonalisation.
5. Write limitations of Index Numbers
6. Explain the methods of constructing CLI.
7. Explain Base Shifting.
8. Write a short note on Wholesale Index number.
9. Write the uses of Vital Statistics.
10. Explain Growth Rates.

SECTION-B

Answer ALL the following

(5x8=40 M)

11. Explain the components of Timeseries.

(OR)

12. Explain the method of Least Squares to measure trend.

13. Explain the method of Link relatives.

(OR)

14. Explain the method of Ratio to Trend to measure seasonal variations.

15. Explain Problems in construction of Index numbers.

(OR)

16. Explain criteria of good index number.

17. Explain the fixed and chain-based index number.

(OR)

18. Explain Deflating and splicing.

19. Explain various measures of Fertility.

(OR)

20. Explain the complete Life- Table.

Regd. No: _____

(5464/ STA M-5306)

B.SC (DATA SC) Degree (Honours) Examinations- 01 NOV 2025

SEMESTER-V (REGULAR)

(ADMITTED BATCH 2023-24 ONLY)

COMPUTATIONAL STATISTICS AND R PROGRAMMING (M)

TIME: 3 Hrs

Max Marks:60

Pass Marks : 24

SECTION-A

Answer any FIVE of the following

(5x4=20 M)

1. Explain mass storage devices.
2. Explain the concept of files and folders
3. Explain matrix operation using Excel functions.
4. How can you Export EXCEL Output to MS-Word.
5. Explain fitting of straight line in Excel.
6. Explain the difference between FORECAST and TREND functions in Excel.
7. Explain Arithmetical logical operators in R.
8. Write About Basic Functions in R.
9. Describe about Handle missing values in R.
10. Write a code snippet to add /remove a row to /from an existing data frame.

SECTION-B

Answer ALL the following

(5x8=40 M)

11. Explain the types of software with examples.

(OR)

12. Explain the Block diagram of the computer and its Components.
13. Discuss data entry and editing features in Excel.

(OR)

14. Explain how to create Bar, Line and PIE Charts in Excel.
15. Explain the steps for fitting of polynomial and power curves using Excel.

(OR)

16. Discuss about Data Analysis Pak and its features.
17. Explain the data types in R – programming.

(OR)

18. Explain Recycling, Filtering and Sub setting related to Vectors in R.
19. Discuss The Creation of Matrix and Various Operations on Matrices in R.

(OR)

20. Discuss various types of visualizations in R.