

CBCS SCHEME

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18AD56

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Mathematics for Data Science

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Why is there variance? Explain with an example. (10 Marks)
- b. Compute the mean, variance, standard deviation.

Score	Frequency
40 – 45	3
34 – 39	1
28 – 33	4
22 – 27	5
16 – 21	2
10 – 15	3

(10 Marks)

OR

- 2 a. Explain the degrees of freedom (df) for a Sample Variance (10 Marks)
- b. Explain simple example for a Research Problem. (10 Marks)

Module-2

- 3 a. Explain the identification of errors and inconsistencies. (10 Marks)
- b. Explain Histogram for a Quantitative variable. (10 Marks)

OR

- 4 a. Explain the identification and handling of outliers. (10 Marks)
- b. Explain the Bivariate Data Screening for two quantitative variables. (10 Marks)

Module-3

- 5 a. Explain assumption about the distribution of scores on the Quantitative dependent variable. (10 Marks)
- b. Explain computation of Pearson's r. (10 Marks)

OR

- 6 a. Explain Research situations where Pearson's r is used. (10 Marks)
- b. Explain statistical significance testing other hypotheses about ρ_{XY} . (10 Marks)

Module-4

- 7 a. Explain statistical significance tests for Bivariate Regression. (10 Marks)
- b. Explain the information to Report from a Bivariate Regression. (10 Marks)

OR

- 8 a. Discuss Raw scores Vs Standard score versions of the regression equation. (10 Marks)
- b. Describe Research situations where Bivariate Regression is used. (10 Marks)

Module-5

- 9 a. Explain Semipartial (or “part”) correlation. (10 Marks)
b. Discuss the formulas for standard score Beta coefficients. (10 Marks)

OR

- 10 a. Discuss the assumptions for regression with two predictors. (10 Marks)
b. Explain the graphic representation of regression plane. (10 Marks)

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