



## UG Semester-End Final Exams-2025

Date: 27 November 2025

BA 3<sup>rd</sup> Semester (SEC) **EG**

### Methods of Data Analyses

Full Marks: 37.5

Pass Mark: 15

Time: 2 Hours

#### Part-I Multiple Choice Questions (15 X 0.5 = 7.5)

- In a frequency polygon, the points are joined by:
  - Curved lines
  - Straight lines
  - Dotted lines
  - Bar lines
- The total number of times an observation occurs is called:
  - Cumulative frequency
  - Relative frequency
  - Frequency
  - Mean
- A pictogram represents data using:
  - Bars
  - Circles
  - Pictures or symbols
  - Straight lines
- A frequency distribution showing one characteristic only is known as:
  - Bivariate distribution
  - Multivariate distribution
  - Univariate distribution
  - Three-dimensional distribution
- The curve that represents cumulative frequency data is called:
  - Histogram
  - Ogive
  - Frequency polygon
  - Pie chart
- If one variable increases while the other decreases, the correlation is:
  - Positive
  - Perfect
  - Negative
  - Zero

(PTO)

7. When there is no relationship between two variables, the correlation coefficient is:
- +1
  - 1
  - 0
  - Between 0 and 1

8. The scatter diagram method gives a:
- Numerical value of correlation
  - Visual idea of correlation
  - Mathematical proof of correlation
  - None of these

9. Karl Pearson's coefficient of correlation is based on:
- Arithmetic mean and standard deviation
  - Median and mode
  - Range and quartile deviation
  - Percentiles

10. Spearman's rank correlation is most suitable when:
- Data are in nominal form
  - Data are ranked or ordered
  - Data are continuous
  - Data are time series

11. The line of regression shows:
- Average relationship between variables
  - Maximum deviation between variables
  - Random relationship
  - No relation

12. Regression helps in:
- Comparing two unrelated variables
  - Predicting one variable from another
  - Calculating mean of a series
  - Showing cumulative frequency

13. If both regression coefficients are negative, the correlation will be:
- Positive
  - Negative
  - Zero
  - Undefined

14. The point where the two regression lines intersect represents:
- Mean of X and mean of Y
  - Median of X and Y
  - Mode of X and Y
  - Zero correlation

15. Regression differs from correlation because regression:
- Measures only strength
  - Describes cause and effect
  - Is used for prediction
  - Cannot be plotted graphically

**Part-II Write a short note on any five of the following (5 X 1 = 5)**

- Why do we use class intervals while preparing a frequency table?
- How does a histogram differ from a bar chart?
- What does the shape of an ogive tell us about the data?
- What is meant by a perfect positive correlation?
- Why can correlation not establish cause and effect between two variables?
- How can a scatter plot help in identifying the type of correlation?
- What is the main use of a regression line in statistics?
- How does regression help in forecasting future values?
- What happens to regression coefficients if the correlation between two variables is zero?
- Why are there two regression lines in a bivariate data set?

**Part-III Descriptive Category Questions (5 X 5 = 25)**  
(Answer any five selecting at least one from each Unit of the following)

**Unit 1**

- Explain the types of diagrams with examples.
- Explain the Pie Diagram with an example.

(PTO)

**Unit 2**

- 3. What is Correlation? Explain briefly the types and significance of correlation .
- 4. Ten competitors in a beauty contest were ranked by three judges in following orders:

1 <sup>st</sup> Judge	1	6	5	10	3	2	4	9	7	8
2 <sup>nd</sup> Judge	3	5	8	4	7	10	2	1	6	9
3 <sup>rd</sup> Judge	6	4	9	8	1	2	3	10	5	7

Use the method of Spearman's rank correlation to determine which pair of judges has the nearest approach to common tastes in beauty

**Unit 3**

- 5. Explain briefly the uses of regression analysis
- 6. Explain the properties of regression coefficients.
- 7. Estimate the regression equation of X on Y and Y on X from the following data with help of Least Squares.

X	2	4	6	8	10
Y	5	7	9	8	11

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