

Dr. Babasaheb Ambedkar Open University

Term End Examination January – 2026

Course : BSCIT
Subject Code : BSCITRMU-104
Subject Name : Introduction to Statistics

Date : 19/02/2026
Time : 11:30am to 01:45pm
Duration : 02.15 Hours
Max. Marks : 70

Section A

Answer the following (Attempt any three)

(30)

1. What is Dispersion? Explain the different measures of dispersion with formulas and examples.
2. Explain the concepts of Skewness and Kurtosis. Describe their types and methods of measurement in detail.
3. Define Random Variable. Explain discrete and continuous random variables along with probability distribution.
4. Define Time Series. Explain its components and methods of measuring trend.
5. Explain the concept of Economic Inequality. Describe Lorenz Curve and Gini Coefficient in detail.

Section B

Answer the following (Attempt any four)

(20)

1. Explain Karl Pearson's coefficient of correlation, its properties, and interpretation.
2. What is regression? Explain the difference between correlation and regression.
3. State and explain the basic laws of probability.
4. State the conditions under which Binomial Distribution is applicable.
5. Write a short note on Poisson Distribution.
6. State the main properties of Normal Distribution.

Section C

Part – A (Multiple Choice Questions)

(10)

- 1 The formula of Arithmetic Mean for a frequency distribution is:
A $\Sigma fx / \Sigma f$ B $\Sigma f / \Sigma x$
C $\Sigma x / n$ D $\Sigma f^2 x$
- 2 The difference between the largest and smallest value is called:
A Mean Deviation B Range
C Variance D Quartile Deviation
- 3 Kurtosis measures the:
A Central tendency B Dispersion
C Flatness or peakedness D Correlation
- 4 Correlation measures the relationship between:
A Frequencies only B Three variables
C One variable D Two variables
- 5 Regression analysis is used to:
A Measure dispersion B Find correlation only
C Predict values D Calculate averages
- 6 If two events cannot occur simultaneously, they are called:
A Mutually exclusive events B Independent events
C Complementary events D Exhaustive events

- 7 Bayes' theorem is used to find:
A Joint probability
C Marginal probability
B Posterior probability
D Conditional probability
- 8 Mean of a Binomial distribution is:
A np
C $\sqrt{npq}$
B nq
D n/p
- 9 Normal distribution curve is:
A Positively skewed
C Symmetrical
B Negatively skewed
D Rectangular
- 10 Index numbers are used to measure:
A Relative change
C Dispersion
B Central tendency
D Probability

Part – B (Do as Directed)

(10)

State whether the following statements are true or false

- 1 Mode cannot be determined for a distribution having equal frequencies for all observations.
- 2 Mean deviation is always calculated from the arithmetic mean only.
- 3 In a negatively skewed distribution, the value of mean is less than the median.
- 4 A zero correlation always indicates complete independence between variables.
- 5 Both regression lines coincide when the value of correlation coefficient is zero.
- 6 The sum of probabilities of all mutually exclusive events can be greater than one.
- 7 Conditional probability depends on the occurrence of another event.
- 8 A continuous random variable can take any value within a given interval.
- 9 The probability of success changes from trial to trial in a binomial experiment.
- 10 The total area under the normal distribution curve is equal to one.
