

INDIRA UNIVERSITY, PUNE

SCHOOL OF INFORMATION TECHNOLOGY- BSC DS

Backlog Examination (2025 Pattern) April/ May – 2026 - Semester – I

Subject Name: Descriptive Statistics
Subject Code: 25BDS102T

Max. Marks: 25
Time: 1:30 Hrs.

Instructions

- All Questions are Compulsory.
- Use of Non programmable scientific calculator is allowed.

CO #	Cognitive Ability	Course Outcome
CO1	Remember	Summarize data visually and numerically.
CO2	Understand	Analyse a problem, identify methods in descriptive statistics.
CO3	Apply	Define the computing requirements appropriate to its solution.
CO4	Analyze	Identify correlation between variables.
CO5	Evaluate	Fit an equation for prediction and apply the same for real data and assess data-based models.
CO6	Create	Execute statistical analysis with any software tool.

Q1.	Attempt any 5 out of 7. (1 mark each) (5 Marks) a. A characteristic that can be measured numerically is called : i) Attribute ii) Variable iii) Qualitative data iv) Constant b. Which of the following is not a measure of central tendency? i) Mean ii) Median iii) Mode iv) Range c. The first central moment of any data set is: i) Equal to the mean ii) Zero iii) Equal to the variance iv) Equal to the median d. Correlation measures the degree of _____ between the two variables. i) Independence ii) linear relationship iii) Variation within one variable iv) None of these e. Non-linear regression is used when i) The relation between variables is strictly linear ii) The relation between variables cannot be appropriately modeled by a straight line iii) Errors are constant iv) Data follow normal distribution	CO1
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	f. A characteristic like “Gender” is an example of i) Continuous variable ii) Attribute iii) Discrete variable iv) Ratio variable g. The r^{th} central moment of a distribution is taken about i) Zero ii) Mean iii) Any constant iv) Median																											
Q2.	Attempt any 2 out of 4. (5 marks each) (10 Marks) a. Prepare a cumulative frequency table for the following data and draw less than type of ogive curve: <table border="1"><tr><td>Class interval</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td></tr><tr><td>Frequencies</td><td>5</td><td>7</td><td>12</td><td>10</td><td>6</td></tr></table> b. Compute coefficient of variation for the data: 9, 12, 18, 26, 15, 10 12 c. Compute Karl Pearson`s coefficient of skewness and interpret it, given that mean=60, mode=50, variance =25. d. Draw a scatter diagram to the following pairs of values of the variables x and y and write an appropriate conclusion. <table border="1"><tr><td>X</td><td>2</td><td>3</td><td>5</td><td>6</td><td>8</td><td>9</td></tr><tr><td>Y</td><td>6</td><td>5</td><td>7</td><td>8</td><td>12</td><td>12</td></tr></table>	Class interval	0-10	10-20	20-30	30-40	40-50	Frequencies	5	7	12	10	6	X	2	3	5	6	8	9	Y	6	5	7	8	12	12	CO2
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X	2	3	5	6	8	9																						
Y	6	5	7	8	12	12																						
Q3.	(A) Attempt all questions. (10 Marks) a. Explain the concept of Dispersion. What are the different measures of dispersion? Explain Range. b. Fit a second-degree curve of form $Y = a + bX + cX^2$ to the following data: <table border="1"><tr><td>X</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Y</td><td>2</td><td>5</td><td>10</td><td>17</td><td>26</td></tr></table> OR (B) Attempt the following question. (10 Marks) The mean and standard deviations of X are 20, 10 and the mean and standard deviations of Y are 40, 20 respectively. If the correlation coefficient between X and Y is 0.8, find: (i) Regression coefficients byx and bxy (ii) Regression equations of X on Y and Y on X	X	1	2	3	4	5	Y	2	5	10	17	26	CO3														
X	1	2	3	4	5																							
Y	2	5	10	17	26																							
