(II) 10/10/2025

NEP - Semester End Examination – October 2025

Program: F.Y.B.Sc DS – SEM I **Course:** Descriptive Statistics

Program Code: UGDS03 **Course Code:** NUDS102

Duration: 1 Hour **Max. Marks:** 30

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.

Q. 1		**Attempt any TWO of the following.**	[10]	Course Outcome	Knowledge Level
	(a)	Define the two types of characteristics in statistics with example.		CO1	L1
	(b)	Calculate the mean for the following data: **Class** | 0 – 4 | 4 – 8 | 8 - 12 | 12 – 16 | 16 – 20 **Frequency** | 2 | 7 | 12 | 6 | 3		CO2	L2
	(c)	Calculate the mean deviation about median for the following data: **Class** | 0 - 10 | 10 - 20 | 20 - 30 | 30 - 40 | 40 - 50 **Frequency** | 3 | 7 | 10 | 8 | 2		CO2	L3
	(d)	Analyze the given distribution with raw moments (2, 10, 25 and 80) to obtain the first four central moments, and determine the coefficient of skewness and kurtosis.		CO3	L4
Q. 2		**Attempt any TWO of the following.**	[10]	Course Outcome	Knowledge Level
	(a)	Calculate the Pearson's correlation coefficient for the following data: x | 2 | 3 | 5 | 6 | 9 y | 5 | 3 | 4 | 6 | 12		CO2	L1
	(b)	Calculate the Spearman's Rank Correlation of the data: x | 90 | 78 | 82 | 83 | 88 y | 80 | 87 | 77 | 91 | 85		CO2	L2
	(c)	Apply linear regression to fit the curve $y = a \cdot e^{bx}$ the following x | 1 | 2 | 3 | 4 y | 3 | 8 | 20 | 54		CO3	L3

<table>
<tr><td></td><td>(d)</td><td>Differentiate between coefficient of correlation and regression.</td><td></td><td>CO3</td><td>L4</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Q. 3</td><td></td><td>Attempt any TWO of the following.</td><td>[10]</td><td>Course Outcome</td><td>Knowledge Level</td></tr>
<tr><td></td><td>(a)</td><td>Construct ogive curves for the following data:
<table>
<tr><td>Class</td><td>30 – 40</td><td>40 – 50</td><td>50 – 60</td><td>60 – 70</td><td>70 – 80</td></tr>
<tr><td>Frequency</td><td>5</td><td>12</td><td>15</td><td>10</td><td>3</td></tr>
</table></td><td></td><td>CO2</td><td>L3</td></tr>
<tr><td></td><td>(b)</td><td>Analyze the distribution by finding quartile Q_3 for the following.
<table>
<tr><td>Class</td><td>0 – 10</td><td>10 – 20</td><td>20 – 30</td><td>30 – 40</td><td>40 – 50</td></tr>
<tr><td>Frequency</td><td>1</td><td>3</td><td>8</td><td>5</td><td>3</td></tr>
</table></td><td></td><td>CO3</td><td>L4</td></tr>
<tr><td></td><td>(c)</td><td>Evaluate the significance of coefficient of skewness in statistics with a short note.</td><td></td><td>CO4</td><td>L5</td></tr>
<tr><td></td><td>(d)</td><td>Formulate the relation between raw and central moments and develop a short explanatory note.</td><td></td><td>CO4</td><td>L6</td></tr>
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