

Program: F.Y.B.Sc CS Semester: II Program Code: UGCS02  
 Course: Descriptive Statistics Course Code: NUCS204

Duration: 1 Hour Examination Pattern: NEP Autonomous - External Max. Marks: 30

**Instructions:**

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

**Examination:**  
**REGULAR**

Q. 1	Attempt any TWO of the following.	[10]	Course Outcome	Knowledge Level												
(a)	Find frequency distribution of the following data: 24, 7, 9, 12, 15, 18, 21, 23, 25, 27, 23, 6, 8, 11, 14, 17, 19, 22, 24, 26, 5, 11, 13, 16, 21, 28, 29, 32, 35, 38, 22, 29, 31, 33, 36, 39, 41, 43, 45, 37, 34, 37, 39, 42, 44, 26, 48, 39. Hence, construct histogram. (Take classes: 0 – 10, 10 – 20, ...)		CO1	L3, L6												
(b)	From the following group data, calculate Mean. <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <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>Frequency</td> <td>12</td> <td>15</td> <td>20</td> <td>14</td> <td>9</td> </tr> </table>	Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	Frequency	12	15	20	14	9		CO2	L3
Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50											
Frequency	12	15	20	14	9											
(c)	Evaluate $D_7$ for the given grouped frequency distribution. <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td>Class Interval</td> <td>0 – 8</td> <td>8 – 16</td> <td>16 – 24</td> <td>24 – 32</td> <td>32 – 40</td> </tr> <tr> <td>Frequency</td> <td>4</td> <td>6</td> <td>12</td> <td>10</td> <td>5</td> </tr> </table>	Class Interval	0 – 8	8 – 16	16 – 24	24 – 32	32 – 40	Frequency	4	6	12	10	5		CO2	L5
Class Interval	0 – 8	8 – 16	16 – 24	24 – 32	32 – 40											
Frequency	4	6	12	10	5											
(d)	Find Mean Deviation about Median for the given data. 3, 5, 5, 8, 6, 9, 7, 3, 1, 3.		CO3	L4												
<b>Q. 2</b>	<b>Attempt any TWO of the following.</b>	<b>[10]</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>												
(a)	Calculate Karl Pearson's Coefficient of Correlation for the given bivariate data: <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td>x</td> <td>2</td> <td>3</td> <td>5</td> <td>6</td> <td>9</td> </tr> <tr> <td>y</td> <td>5</td> <td>3</td> <td>4</td> <td>6</td> <td>12</td> </tr> </table>	x	2	3	5	6	9	y	5	3	4	6	12		CO5	L3
x	2	3	5	6	9											
y	5	3	4	6	12											
(b)	Fit the parabola $y = a + bx + cx^2$ , for the following data: <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <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>9</td> <td>10</td> <td>9</td> <td>6</td> <td>1</td> </tr> </table>	x	1	2	3	4	5	y	9	10	9	6	1		CO5	L3
x	1	2	3	4	5											
y	9	10	9	6	1											
(c)	Let $x - 2y + 50 = 0$ and $2x - 3y + 10 = 0$ are line of regression, then find: i) $\bar{x}, \bar{y}$ , ii) $b_{xy}, b_{yx}$ , iii) $r$		CO5	L3												

	(d) Fit a Regression Line $y$ on $x$ using the method of least squares.		CO5	L4												
	<table border="1"> <tr> <td>x</td> <td>3</td> <td>5</td> <td>9</td> <td>4</td> <td>7</td> </tr> <tr> <td>y</td> <td>15</td> <td>10</td> <td>1</td> <td>3</td> <td>2</td> </tr> </table>	x	3	5	9	4	7	y	15	10	1	3	2			
x	3	5	9	4	7											
y	15	10	1	3	2											
Q. 3	Attempt any TWO of the following.	[10]	Course Outcome	Knowledge Level												
(a)	Write a short note on types of characteristics in data analysis.		CO1	L2												
(b)	Explain the Characteristics of a Good Measure of Central Tendency.		CO2	L2												
(c)	List the seven types of Scatter Diagram and its role in studying correlation.		CO5	L1												
(d)	Distinguish between Correlation and Regression.		CO5	L2												

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