22ECU309N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BA DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch – **ECONOMICS**

STATISTICS METHODS - I

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Statistics results are (a) Absolutely correct (b) Not true (c) True on average (d) Not exactly	K1	CO1
	2	Mailed Questionnaire method of enquiry can be adopted if respondents (a) Live in cities (b) Have high income (c) Are educated (d) Are known	K2	CO2
2	3	In a bar diagram, the base line is (a) Horizontal (b) Vertical (c) Base line (d) diagonal	K1	CO1
	4	Histogram is suitable for (a) Time series data (b) Chronological order (c) both (a) and (b) (d) Only (b)	K2	CO2
3	5	.....is a tool used to test the consistency of a group (a) Mean (b) Standard deviation (c) Coefficient of variation (d) Harmonic mean	K1	CO1
	6	What is the standard deviation of 1,2,3,4,5? (a) 1.512 (b) 1.414 (c) 4.4214 (d) 1.732	K2	CO2
4	7	.....refers to the asymmetry or lack of symmetry in the shape of frequency (a) Kurtosis (b) Skewness (c) Absolute measure (d) Relative measure	K1	CO1
	8	The formula for karl pearson's coefficient of skewness is (a) $\frac{\text{Mean} - \text{mode}}{\text{Standarddeviation}}$ (b) $\frac{3(\text{Mean} - \text{mode})}{\text{Standarddeviation}}$ (c) $\frac{3(\text{Median} - \text{mode})}{\text{Standarddeviation}}$ (d) $\frac{3\text{Mean} - 2\text{mode}}{\text{Standarddeviation}}$	K2	CO2

Cont...

5	9	When the values of two variables change in the same direction, there is .....correlation between the two variables? (a) Linear (b) Positive (c) Negative (d) No	K1	CO1
	10	The range of the correlation coefficient is.... (a) 0 to 1 (b) -1 to +1 (c) 1 to 0 (d) 1 to -1	K2	CO2

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

<table>
<tr><th>Module No.</th><th>Question No.</th><th>Question</th><th>K Level</th><th>CO</th></tr>
<tr><td rowspan="3">1</td><td>11.a.</td><td>List out the limitations of Statistics.</td><td rowspan="3">K4</td><td rowspan="3">CO1</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>11.b.</td><td>Examine the methods of collecting primary data.</td></tr>
<tr><td rowspan="3">2</td><td>12.a.</td><td>Compare frequency polygon and frequency curve.</td><td rowspan="3">K4</td><td rowspan="3">CO2</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>12.b.</td><td>Classify the types of bar diagram with suitable examples.</td></tr>
<tr><td rowspan="3">3</td><td>13.a.</td><td>Find the median from the following data.
<table><tr><td>Daily wage(Rs)</td><td>50</td><td>75</td><td>100</td><td>150</td><td>250</td></tr><tr><td>No of Labourers</td><td>8</td><td>14</td><td>10</td><td>5</td><td>3</td></tr></table></td><td rowspan="3">K3</td><td rowspan="3">CO3</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>13.b.</td><td>Calculate the Standard deviation for the following data.
<table><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>2</td><td>5</td><td>9</td><td>3</td><td>1</td></tr></table></td></tr>
<tr><td rowspan="3">4</td><td>14.a.</td><td>Calculate the Karl Pearson's coefficient of skewness for the following data 25,15,23,40,27,25,23,25,20</td><td rowspan="3">K3</td><td rowspan="3">CO4</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>14.b.</td><td>The first four moments of a distribution about the value 5 of a variable are 2,20,40 and 50. Find the arithmetic mean, variance, μ_3, μ_4</td></tr>
<tr><td rowspan="3">5</td><td>15.a.</td><td>Explain the types of correlation.</td><td rowspan="3">K5</td><td rowspan="3">CO5</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>15.b.</td><td>Two ladies were asked to rank 7 different types of lipsticks. The ranks given by them are as follows
<table><tr><td>Lipsticks</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td></tr><tr><td>Meena</td><td>2</td><td>1</td><td>4</td><td>3</td><td>5</td><td>7</td><td>6</td></tr><tr><td>Lakshmi</td><td>1</td><td>3</td><td>2</td><td>4</td><td>5</td><td>6</td><td>7</td></tr></table>Calculate the Rank correlation coefficient.</td></tr>
</table>

Cont...

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

<table>
<tr><th>Module No.</th><th>Question No.</th><th>Question</th><th>K Level</th><th>CO</th></tr>
<tr><td>1</td><td>16</td><td>Explain the characteristics of good questionnaire.</td><td>K5</td><td>CO1</td></tr>
<tr><td>2</td><td>17</td><td>Draw a simple bar diagram from the following information.
<table>
<tr><td>Year</td><td>1951</td><td>1961</td><td>1971</td><td>1981</td><td>1991</td></tr>
<tr><td>Population (Crores)</td><td>40</td><td>45</td><td>58</td><td>69</td><td>88</td></tr>
</table></td><td>K4</td><td>CO2</td></tr>
<tr><td></td><td></td><td>Find the mean, median and mode for the following data.
<table>
<tr><td>Class interval</td><td>0 – 20</td><td>20 – 40</td><td>40 – 60</td><td>60 – 80</td><td>80 – 100</td></tr>
<tr><td>Frequency</td><td>8</td><td>12</td><td>30</td><td>20</td><td>10</td></tr>
</table></td><td>K4</td><td>CO3</td></tr>
<tr><td>4</td><td>19</td><td>Estimate Kelly's coefficient of skewness :
<table>
<tr><td>Salary</td><td>30 -49</td><td>50 -69</td><td>70 – 89</td><td>90 - 109</td></tr>
<tr><td>No of employees</td><td>25</td><td>40</td><td>50</td><td>100</td></tr>
<tr><td>Salary</td><td>110 – 129</td><td>130 -149</td><td>150 – 169</td><td></td></tr>
<tr><td>No of employees</td><td>80</td><td>50</td><td>25</td><td></td></tr>
</table></td><td>K6</td><td>CO4</td></tr>
<tr><td>5</td><td>20</td><td>Calculate the correlation coefficient from the following data:
<table>
<tr><td>x</td><td>1</td><td>3</td><td>5</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>y</td><td>3</td><td>4</td><td>8</td><td>10</td><td>12</td><td>11</td></tr>
</table></td><td>K5</td><td>CO5</td></tr>
</table>

Z-Z-Z END