22ZOU521N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)

Branch - **ZOOLOGY**

BIOSTATISTICS

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	Who is the Father of Biostatistics? (a) Fisher (b) Karl Pearson (c) Francis Galton (d) Francis Bacon	K1	CO1
	2	When the researcher uses the data of an agency, then the data is called as _____ (a) Quantitative data (b) Qualitative data (c) Secondary data (d) Primary data	K2	CO1
2	3	In chronological classification, data are classified on the basis of (a) attributes (b) time (c) classes (d) location	K1	CO1
	4	Mention the name of Column heading of a table (a) stub (b) caption (c) note (d) title	K2	CO1
3	5	What is the rate of Sum of deviations from mean? (a) zero (b) one (c) minimum (d) maximum	K1	CO2
	6	Recall the distribution name having two modes (a) unimodal (b) bimodal (c) trimodal (d) multimodal	K2	CO2
4	7	The difference between the largest and smallest observation in a data set is called (a) Mean Deviation (b) Quartile Deviation (c) Range (d) Standard Deviation	K1	CO3
	8	Identify the most commonly used measure of dispersion. (a) Range (b) Standard Deviation (c) Quartile Deviation (d) Mean Deviation	K2	CO3
5	9	State the range of correlation coefficient . (a) $-1 \leq r \leq 0$ (b) $-1 < r < 1$ (c) $0 \leq r \leq 1$ (d) $-1 \leq r \leq 1$	K1	CO4
	10	The widely used statistical tool for prediction is (a) regression analysis (b) correlation analysis (c) ANOVA (d) ANACOVA	K2	CO4

Cont...

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>Discuss the development of biostatistics and the impact.</td><td rowspan="3">K2</td><td rowspan="3">CO1</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>11.b.</td><td>Distinguish between primary data and secondary data. Illustrate.</td></tr>
<tr><td rowspan="3">2</td><td>12.a.</td><td>With a blank table explain the components of a table.</td><td rowspan="3">K3</td><td rowspan="3">CO1</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>12.b.</td><td>A firm reported that its net worth in the years 2011 – 2016 are as follows:
<table>
<tr><td>Year</td><td>2011-2012</td><td>2012-2013</td><td>2013-2014</td><td>2014-2015</td><td>2015-2016</td></tr>
<tr><td>Net Worth (Rs. in lakhs)</td><td>100</td><td>112</td><td>120</td><td>133</td><td>117</td></tr>
</table>
Draw the histogram and frequency polygon.</td></tr>
<tr><td rowspan="3">3</td><td>13.a.</td><td>Calculate the median from the following data.
<table>
<tr><td>Weight (in gms)</td><td>No. of apples</td><td>Weight (in gms)</td><td>No. of apples</td></tr>
<tr><td>410 – 419
420 – 429
430 – 439
440 – 449</td><td>14
20
42
54</td><td>450 – 459
460 – 469
470 – 479</td><td>45
18
7</td></tr>
</table></td><td rowspan="3">K3</td><td rowspan="3">CO2</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>13.b.</td><td>Calculate the geometric mean from the following data:
125, 1462, 38, 7, 0.22, 0.08, 12.75, 0.5</td></tr>
<tr><td rowspan="3">4</td><td>14.a.</td><td>The annual salaries of a group of employees are given in the following table
<table>
<tr><td>Salaries (in Rs. 000)</td><td>45</td><td>50</td><td>55</td><td>60</td><td>65</td><td>70</td><td>75</td><td>80</td></tr>
<tr><td>No.of persons</td><td>3</td><td>5</td><td>8</td><td>7</td><td>9</td><td>7</td><td>4</td><td>7</td></tr>
</table>
Compute the standard deviation of the salaries.</td><td rowspan="3">K4</td><td rowspan="3">CO3</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>14.b.</td><td>Calculate coefficient of variation from the following data:
<table>
<tr><th>Marks</th><th>No. of students</th></tr>
<tr><td>Below 20</td><td>8</td></tr>
<tr><td>Below 40</td><td>20</td></tr>
<tr><td>Below 60</td><td>50</td></tr>
<tr><td>Below 80</td><td>70</td></tr>
<tr><td>Below 100</td><td>80</td></tr>
</table></td></tr>
<tr><td rowspan="3">5</td><td>15.a.</td><td>State the different types of correlations discuss with examples.</td><td rowspan="3">K4</td><td rowspan="3">CO4</td></tr>
<tr><td colspan="2">(OR)</td></tr>
<tr><td>15.b.</td><td>In a correlation study the following values are obtained:
$\bar{X} = 65$, $\bar{Y} = 67$, $\sigma_x = 2.5$, $\sigma_y = 3.5$, and r = 0.8. Find the two regression equations that are associated with the above values.</td></tr>
</table>

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>Discuss various methods of collecting primary data with necessary examples.</td><td>K3</td><td>CO1</td></tr>
<tr><td>2</td><td>17</td><td>Delineate about classification and its types. Illustrate with suitable example. Explain various types of classification of data.</td><td>K3</td><td>CO1</td></tr>
<tr><td>3</td><td>18</td><td>The number of telephone calls received in 245 successive one-minute intervals at an exchange are shown in the following frequency distribution:
<table>
<tr><td>No. of calls</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
<tr><td>Frequency</td><td>14</td><td>21</td><td>25</td><td>43</td><td>51</td><td>40</td><td>39</td><td>12</td></tr>
</table>
Evaluate mean, median and mode.</td><td>K4</td><td>CO2</td></tr>
<tr><td>4</td><td>19</td><td>A study of 100 engineering companies gives the following information
<table>
<tr><td>Profit (Rs. in Crore)</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td></tr>
<tr><td>Number of companies</td><td>8</td><td>12</td><td>20</td><td>30</td><td>20</td><td>10</td></tr>
</table>
Calculate the variance and standard deviation.</td><td>K3</td><td>CO3</td></tr>
<tr><td>5</td><td>20</td><td>The random sample of 5 school students is selected and their marks in Statistics and Accountancy are found to be
<table>
<tr><td>Statistics</td><td>85</td><td>60</td><td>73</td><td>40</td><td>90</td></tr>
<tr><td>Accountancy</td><td>93</td><td>75</td><td>65</td><td>50</td><td>80</td></tr>
</table>
Find the two regression lines.</td><td>K4</td><td>CO4</td></tr>
</table>

Z-Z-Z END