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22ECU309N/22ECU309

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BA DEGREE EXAMINATION MAY 2025
(Third Semester)

Branch- **ECONOMICS**

STATISTICAL 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	The statistics are concerned with _____. a. an aggregate of numerical facts b an aggregate of disorganized facts c.an aggregate of qualitative facts d an aggregate of heterogeneous facts	K1	CO1
	2	Which one of the methods is not a primary data collection method? a. Questionnaire method b. Data collected from published sources c. Local correspondent method d. Indirect investigation	K2	CO1
2	3	The headings of the rows of a table are called _____. a. box head b. title c. body d. stub	K1	CO2
	4	When straight lines connect successive mid-points in a histogram, the graph is called a _____. a. Histogram b. Ogive c. Frequency curve d. Frequency polygon	K2	CO2
3	5	If the arithmetic mean is 82 and the median is 78 then the appropriate value of the mode will be _____. a. 50 b. 60 c.70 d. 80	K1	CO3
	6	The measure of dispersion can never be_____. a. positive b. negative c. 0 d.1	K2	CO3
4	7	Bowley's coefficient of Skewness lies between ____. a.-1 and 1 b.-2 and +2 c.-1 and 0 d. 0 and 1	K1	CO4
	8	The distribution is considered leptokurtic if _____, a. $\beta_2 > 3$ b. $\beta_2 < 3$ c. $\beta_3 > 3$ d. $\beta_3 \leq 3$	K2	CO4
5	9	Spearman's rank correlation coefficient is given by _____. a. $1 - \frac{6\sum_{i=1}^{n} d_i}{n(n^2-1)}$ b. $1 + \frac{6\sum_{i=1}^{n} d_i^2}{n(n^2-1)}$ c. $1 - \frac{6\sum_{i=1}^{n} d_i^2}{n(n^2-1)}$ d. $1 + \frac{6\sum_{i=1}^{n} d_i}{n(n^2-1)}$	K1	CO5
	10	A process by which we estimate the value of a dependent variable based on one or more independent variables is called _____. a. Correlation b. Regression c. Residual d. Slope	K2	CO5

SECTION - B (35 Marks)

Answer **ALL** questions

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

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain various methods of collecting primary data	K4	CO1
		(OR)		
	11.b.	Write short notes on the limitations of statistics.		

Cont...

2	12.a.	Explain various parts of tabulation.	K3	CO2
		(OR)		
	12.b.	Draw ogive curve from the data given below: Profits (in lakhs): 20 - 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 | 70 - 80 No. of companies: 3 | 6 | 9 | 13 | 7 | 4		
3	13.a.	Compute the geometric mean for the following data: C-I: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 Frequency: 5 | 7 | 15 | 25 | 8	K5	CO3
		(OR)		
	13.b.	Scores obtained by two teams are given below. Calculate coefficient of variation and state which team is more consistent. Team A: 15 | 10 | 7 | 5 | 3 | 2 Team B: 20 | 10 | 5 | 4 | 2 | 1		
4	14.a.	Calculate Karl Pearson's coefficient of skewness from the following data: Daily expenditure: 0-20 | 20-40 | 40-60 | 60-80 | 80-100 No. of families: 13 | 25 | 27 | 19 | 16	K4	CO4
		(OR)		
	14.b.	Calculate Bowley's coefficient of skewness for the data given below: Profit (Rs. in lakhs): 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 No. of companies: 8 | 12 | 20 | 10 | 6 | 3 | 1		
5	15.a.	Calculate the correlation coefficient from the following data: X: 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 Y: 15 | 16 | 14 | 13 | 11 | 12 | 10 | 8 | 9	K5	CO5
		(OR)		
	15.b.	Calculate the rank correlation coefficient from the following data: X: 52 | 63 | 45 | 36 | 72 | 65 | 47 | 25 Y: 62 | 53 | 51 | 25 | 79 | 43 | 60 | 33		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Discuss briefly sampling and non-sampling errors.	K6	CO1
2	17	Explain the various types of diagrams.	K5	CO2
3	18	Draw a Lorenz curve to the following data and give your comments. Average Profit: 10 | 20 | 25 | 40 | 60 | 75 No. of companies: 25 | 60 | 40 | 100 | 120 | 55	K6	CO3
4	19	Calculate the first four moments of the following distribution about the mean and hence find β_1 and β_2. x: 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 f: 1 | 8 | 28 | 56 | 70 | 56 | 28 | 8 | 1	K4	CO4
5	20	The ages of the 10 husbands and their wives are given below. Calculate two regression lines and find the husband's age, when the wife's age is 30. Further, calculate the age of the wife when the husband's age is 25. Husband's Age: 22 | 23 | 23 | 24 | 26 | 27 | 27 | 28 | 30 | 30 Wives Age: 18 | 20 | 21 | 20 | 21 | 22 | 23 | 24 | 25 | 26	K4	CO5

Z-Z-Z END