25CRM103/ 25FSU103/ 25FTU103/ 25BSU103

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCom DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Common to Branches – **COMMERCE (RM)/ COMMERCE (FS)/ COMMERCE (FT)/ COMMERCE (BS&I)**

STATISTICS

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 deals with a) Qualitative data only b) Quantitative data only c) Both qualitative and quantitative data d) None of the above	K1	CO1
	2	Which of the following is a method of collecting primary data? a) Newspaper reports b) Company records c) Government publications d) Direct personal interview	K2	CO1
2	3	Which measure is most affected by extreme values? a) Median b) Mode c) Mean d) Standard Deviation	K1	CO2
	4	The difference between the highest and lowest value in a dataset is called a) Standard Deviation b) Range c) Variance d) Quartile Deviation	K2	CO2
3	5	Which of the following indicates perfect positive correlation? a) 0 b) –1 c) 1 d) 0.5	K1	CO3
	6	If the value of one variable increases with the increase in another variable, the correlation is a) Negative b) Positive c) Zero d) None of the above	K2	CO3
4	7	Index numbers are expressed in a) Absolute numbers b) Percentages c) Ratios only d) Fractions only	K1	CO4
	8	The method used to measure long-term trend in time series is a) Moving Average b) Seasonal Index c) Irregular variation d) Index Numbers	K2	CO4
5	9	The sum of probabilities of all mutually exclusive and exhaustive events is a) 0 b) 1 c) Between 0 and 1 d) None of the above	K1	CO5
	10	Which of the following is a discrete probability distribution? a) Normal b) Poisson c) Uniform d) Exponential	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 the different methods of data collection with suitable examples.	K3	CO1
		(OR)		
	11.b.	Population of India in five censal years is given. Interpret this by Simple bar diagram.		

Year	1981	1991	2001	2011	2021
Population	36	44	55	68	84

Cont...

2	12.a.	The expenditure of 10 families in Rupees are given below. Fam: A B C D E F G H I J Expn.: 30 70 10 75 50 8 42 25 40 36 Calculate Arithmetic Mean.	K4	CO2
		(OR)		
	12.b.	Calculate range and co efficient of range 10,12,13,16,11,12,13,10,15,19		
3	13.a.	Define a Scatter diagram. Plot the scatter diagram when (i) r = +1 (ii) r = -1 (iii) r = 0	K5	CO3
		(OR)		
	13.b.	Compute the coefficient of correlation between X and Y: X: 10 12 18 8 13 20 22 15 5 17 Y: 88 90 94 86 87 92 96 94 88 85		
4	14.a.	Draw the trend line by graphic method and estimate the production in 2003. Year: 1995 1996 1997 1998 1999 2000 2001 Prodn.: 20 22 25 26 25 27 30	K3	CO4
		(OR)		
	14.b.	Calculate 5 years moving average of number of students in a commerce college as shown by the following figures: Year: 87 88 89 90 91 92 93 94 95 96 Students: 332 311 357 392 402 405 410 427 405 438		
5	15.a.	A bag contains 5 red balls and 3 blue balls. Two balls are drawn one after the other without replacement. Find the probability that both balls are red.	K3	CO5
		(OR)		
	15.b.	A factory produces bolts; historically the probability that a randomly selected bolt is defective is 0.02. From a day's production, 50 bolts are randomly sampled.		

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	Draw a Pie diagram to represent the following data: Item: Food Cloth Rent Other Expenses Family A: 240 160 80 200 Family B: 300 300 200 400	K3	CO1
2	17	Calculate Mean, Median and Mode: Marks: Below 10 Below 20 Below 30 Below 40 Below 50 Students: 3 8 17 20 22	K4	CO2
3	18	From the following information on values of two variables X and Y, Find the two regression lines and the correlation coefficient: N=10;∑X=20;∑Y=40;∑x2=240;∑Y2=410;∑XY=200	K5	CO3
4	19	Fit a straight line trend equation to the following data by the method of least squares and estimate the value of sales for the year 1985. Year: 1979 1980 1981 1982 1983 Sales: 100 120 140 160 180	K3	CO4
5	20	A company receives components from two suppliers. Supplier A supplies 60% of components and Supplier B supplies 40%. The defect rate is **3%** for components from A and **5%** for components from B. (a) If a component chosen at random is found defective, what is the probability that it came from Supplier B? (Use Bayes' theorem.) (b) If a random batch of 200 components is taken, find the expected number of defective components and the variance of the number of defective components.	K3	CO5

Z-Z-Z END