PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCom DEGREE EXAMINATION DECEMBER 2023
(First Semester)

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

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	In statistics, what is the term for data that can be categorized into distinct groups or categories with no inherent order? (a) Nominal Data (b) Ordinal Data (c) Interval Data (d) Ratio Data	K1	CO1
	2	When data is organized into categories or intervals for easier analysis and presentation, what is it referred to as? (a) Ungrouped Data (b) Raw Data (c) Grouped Data (d) Descriptive Data	K2	CO1
2	3	Which of the following is a measure of central tendency? (a) Variance (b)Standard Deviation (b) Median (d)Range	K1	CO2
	4	The Empirical Relationship between Mean, Median & mode is (a) 2 mean – 3 median (b) 3 median – 2 mean (c) 3 (mean – median) (d) 3 (median – mean)	K2	CO2
3	5	What is the Pearson correlation coefficient used for ? (a) To measure the spread or dispersion of data (b) To describe the shape of a data distribution (c) To quantify the linear relationship between two variables (d) To calculate the median of a dataset	K1	CO3
	6	What is the term for a statistical method used to predict one variable based on the values of another variable? (a) Correlation (b) Regression (c) Standard Deviation (d)Variance	K2	CO3
4	7	In the Laspeyres Price Index, what weights are used to compute the index? (a) Current year prices (b) Base year prices (c) Current year Quantity (d) Base year Quantity	K1	CO4
	8	The Consumer Price Index (CPI) is commonly used to measure: a) Changes in the production output of a country b) Changes in the prices of a basket of goods and services purchased by a typical household c) Changes in the stock market d) Changes in the GDP of a nation	K2	CO4

5	9	In probability, what is the complement of an event? (a) Another name for an impossible event (b) The event itself (c) The probability of the event occurring d) The probability of the event not occurring	K1	CO5
	10	What is the probability of getting a head when flipping a fair coin? (a) 0 (b) 0.25 (c) 0.5 (d) 1	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.	Describe the types of classification of data.	K3	CO1
		(OR)		
	11.b.	Construct the data by Pie diagram. <table><tr><th>Food Crops</th><th>Area in acres</th></tr><tr><td>Rice</td><td>8</td></tr><tr><td>Wheat</td><td>8</td></tr><tr><td>Barley</td><td>4</td></tr><tr><td>Jawar</td><td>2</td></tr><tr><td>Bajra</td><td>2</td></tr><tr><td>Maize</td><td>5</td></tr><tr><td>Others</td><td>11</td></tr></table>		
2	12.a.	Analyze the Quartile deviation for the following data & also find co-efficient of QD. <table><tr><td>Rain fall (cm) :</td><td>0</td><td>1</td><td>2</td><td>3</td><td>5</td></tr><tr><td>No.of days :</td><td>10</td><td>11</td><td>15</td><td>5</td><td>2</td></tr></table>	K4	CO2
		(OR)		
	12.b.	From the following data, calculate Karl Pearson's co-effcient of Skewness <table><tr><td>Wage (Rs)</td><td>50</td><td>70</td><td>100</td><td>150</td><td>200</td></tr><tr><td>No. of Workers</td><td>2</td><td>4</td><td>10</td><td>3</td><td>1</td></tr></table>		
3	13.a.	Classify the various types of correlation co-efficient with suitable example.	K4	CO3
		(OR)		
	13.b.	Analyze the following data by applying Karl Pearson's co-efficient of correlation. <table><tr><td>Height of father : (inches)</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td><td>71</td></tr><tr><td>Height of Son : (inches)</td><td>67</td><td>68</td><td>66</td><td>69</td><td>72</td><td>72</td><td>69</td></tr></table>		

									K3	CO4

14.a. Construct the index for the following data by using (i) unweighted AM (ii) unweighted GM

Item	A	B	C	D	E
Price (2019)	20	35	50	10	5
Price (2020)	22	42	70	10	4

(OR)

14.b. Construct the index for the following data by applying cost of living Index number

Commodity :	A	B	C	D	E
Price (2011) :	40	50	40	125	120
Price (2021) :	108	94	65	225	240
Weight :	40	17	13	27	3

Module	Q	Question	K Level	CO
4	14.a / 14.b	(above)	K3	CO4
5	15.a.	Describe the Statement of addition and multiplication theorem on probability.	K2	CO5
		(OR)		
	15.b.	Explain the properties of Binomial Distribution with example.		

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	Explain the various methods of collecting Primary and Secondary data .	K4	CO1
2	17	Apply Mean , Median and Mode for the following data.	K3	CO2
3	18	Analyze the average relationship between the two variables by using Regression Equations (X on Y & Y on X)	K4	CO3

For Question 17:

Marks Obtained :	0-10	10-20	20-30	30-40	40-50	50-60
No of students	5	10	25	30	20	10

For Question 18:

Marks in Mathematics (X)	25	28	35	32	31	36	29	38	34	32
Marks in Statistics (Y)	43	46	49	41	36	32	31	30	33	39

4	19	Construct the index for the following data by applying (i) Laspeyre's (ii) Paasche's (iii) Fisher's index Numbers Table below	K3	CO4

Item	Price		Quantity	
	Base Year	Current Year	Base Year	Current Year
A	6	·10	50	50
B	2	2	100	120
C	4	6	60	60
D	10	12	30	25

5	20	Explain the Normal Distribution and state its properties.	K2	CO5

Z-Z-Z   END