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BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)/
SPECIALIZATION IN CYBER SECURITY (CS)
EXAMINATION : DECEMBER - 2025/JANUARY-2026
SEMESTER - II

Sub: Statistics

(BCA-240-20/BSC24-202/BCA-CS-240-20/BCA-23-202/BCAC-23-202/BSCC24-202)

Date : 31/12/2025 **Total Marks : 60** **Time: 10.00 am to 12.30 pm**

Instructions:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labeled diagrams wherever necessary.

Q.1. Solve (Any 4) **(8)**

1. What do you mean by 'mean deviation'?
2. Define coefficient of variation. Write its formula.
3. Find the variance of the numbers 3,8,6,10,12,9,11,10,12,7
4. Define Covariance.
5. What are variables? State its types.

Q.2. Solve (Any 3) **(9)**

1. The mean of marks in Statistics of 100 students in a class was 72. The mean of marks of boys was 75, while their number was 70. Find out the mean marks of girls in the class.
2. Find the value of third quartile if the values of first quartile and quartile deviation are 104 and 18 respectively.
3. Find the mean, median and mode of the following data :
23,18,24,23,31,37,28,30,25,40,35,35,27,25
4. Draw less than Ogive curves for the following frequency distribution

Marks	Number of Students
0-20	2
20-40	18
40-60	42
60-80	28
80-100	5

Q.3. Solve (Any 2) (8)

1. State Merits and Demerits of Standard Deviation.
2. The variance of a series of numbers 2,3,11 and x is $49/4$. Find the value of x.
3. The coefficient of correlation between two variables X and Y is 0.48. The covariance is 36. The variance of X is 16. Find the standard deviation of Y.

Q.4. Solve (Any 3) (15)

1. The arithmetic mean and the standard deviation of a set of 9 items are 43 and 5 respectively. If an item of value 63 is added to the set, find the mean and standard deviation of 10 items.
2. Construct a subdivided bar diagram for the following data

Year	Import	Export
1990	25	23
1995	35	37
2000	31	30
2005	28	32
2010	32	30

3. If the ratio of the mode to the median is 2:3 for a dataset. Find the ratio of mode to mean.
4. Marks obtained by 5 students in algebra and trigonometry as given below :

Algebra	16	15	12	10	8
Trigonometry	11	18	10	20	17

Calculate the Pearson correlation coefficient.

Q.5. Solve. (Solve any 2) (20)

1. The frequency distribution of screws according to their length in cms is given below :

Length in cms	No. of screws
4.0-4.1	13
4.1-4.2	23
4.2-4.3	42
4.3-4.4	67
4.4-4.5	30
4.5-4.6	13
4.6-4.7	12

- i. Determine class boundaries of all the classes
 - ii. What is the width of 4th class?
 - iii. Find the less than cumulative frequencies?
 - iv. Draw more than Ogive curve.
 - v. Draw a histogram.
2. Calculate Laspeyres' Index Number and Quantity Index Number of the following data:

Commodity	Base Year		Current Year	
	Quantity	Price	Quantity	Price
A	8	50	10	60
B	10	40	12	50
C	5	100	9	70
D	6	10	8	20

3. Find the means of X and Y variables and the coefficient of correlation between them from the following two regression equations:
 $2Y - X - 50 = 0$
 $3Y - 2X - 10 = 0$