Roll No.

Total No. of Questions: 07]

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BBA (Sem. - 3rd)

BUSINESS STATISTICS

SUBJECT CODE: BB - 304

Paper ID: [C0216]

[Note: Please fill subject code and paper ID on OMR]

Time: 03 Hours

Maximum Marks: 60

Instruction to Candidates:

- 1) Section A is Compulsory.
- 2) Attempt any Four questions from Section B.

Section - A

Q1)

 $(10 \times 2 = 20)$

- a) Define secondary data.
- b) Show that the weighted arithmetic mean of the square of 'n' natural numbers whose weights are equal to the corresponding numbers is equal to n(n + 1)/2.
- c) Prove that the product of the ratios of each of the 'n' observations to the GM. is always unity.
- d) The geometric mean and harmonic mean of two observations are respectively 18 and 10.8. Find the observations.
- e) For numbers 1, 2, 3, 4, 5 calculate range and mean deviation from median.
- f) If S.D. of a set of observations is zero, then all observations are equal. Comment.
- g) Write direct method to find Karl Pearson's coefficient of correlation.
- h) Define quantity index number.
- i) State Bayes Theorem.
- j) Write the significance of Time Series Analysis.

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Section - B

 $(4 \times 10 = 40)$

Q2) Calculate the mode of given data set:

Mid Value: Frequency:

- **Q3)** Find the standard deviation of the (2n + 1) terms of an A.P.
- Q4) The following is the record of number of bricks laid each day for 10 days by two brick layers A and B. Calculate the coefficient of variation in each case and discuss the relative consistency of two brick layers.

A: **B**:

Q5) Data related to age of students and their games are given. Calculate the correlation between the age of students and their playing habits.

Age: No. of Students: Regular Players:

Q6) Calculate the index number for 1998 with 1990 as base using average of price relative method for the following data:

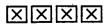
		Price	
Commodity	<u>Weight</u>	<u>1990</u>	<u>1998</u>
Α	2	12	24
\mathbf{B}	8	8	12
\mathbf{C}	4	15	27
D	5	6	18
\mathbf{E}	1	10	12

Q7) What is a trend in a time series. The following table gives the annual sales (in Rs'000) of a commodity.

Year: 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

Sales: 710 705 680 687 757 629 644 783 781 805 872

Determine the trend by calculating 5-yearly moving average.



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