

Roll No.

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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 x 2 = 20)

- a) Write the type of classification of data.
- b) Define tabulation of data.
- c) The average marks scored by 10 students are 35. Later the moderator awarded 2 grace marks to 4 students each and 1 grace marks to 2 students each. Find the average marks after moderation.
- d) Prove that the product of the ratios of each of the 'n' observations to the Geometric mean is always unity.
- e) Write the characteristics of a good measure of Dispersion.
- f) If the standard deviation of a set of observations is zero, then all observations are equal. Comment.
- g) Write Karl Pearson's method to find coefficient of correlation.
- h) The lines of regression of Y on X and X on Y are resp. $Y = X + 5$ and $16X - 9Y = 94$. Find the variance of X if the variance of Y is 16.
- i) Write the components of Time Series.
- j) Write the formula to find Fisher's Ideal Index number.

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Section - B

(4 x 10 = 40)

Q2) From the following data, calculate the values of the upper and lower quartiles, D_2, P_{30} .

Marks	:	Below 10	10-20	20-40	40-60	60-80	Above 80
No. of Students	:	8	10	22	25	10	5

Q3) Find the standard deviation of $(2n+1)$ terms of an A.P.

Q4) Two supervisors ranked as follows 12 workers working under them in order of efficiency.

Worker	:	1	2	3	4	5	6	7	8	9	10	11	12
Supervisor I	:	5	6	1	2	3	8.5	8.5	4	7	11	10	12
Supervisor II	:	5.5	5.5	2	2	2	9	7	4	8	10.5	12	10.5

Calculate Spearman's Rank correlation coefficient.

Q5) Obtain the lines of regression and show them on graph for the following :

X	:	1	2	3	4	5	6	7	8	9
Y	:	9	8	10	12	11	13	14	16	15

Q6) Fit a parabolic trend $y = a + bx + cx^2$ to the following data where y denotes the output in thousand unit.

Year	:	1991	1992	1993	1994	1995	1996	1997	1998	1999
Y	:	2	6	7	8	10	11	11	20	9

Also compute the trend values. Estimate the values for 2000.

Q7) Define Normal and Poission distributions in detail.

