

Time :- 2 hrs

Max Marks :- 60

Sub :- Mathematical & Statistical

N.B.

- 1) All the questions are compulsory.
- 2) Figures to the right indicate marks.
- 3) Graph tables, Log tables will be provided on request.

Q.1)

a) Define mean deviation from mean.

(1)

or

a) For a perfectly symmetrical distribution mean = median = \_\_\_\_\_.

(1)

Q.1) b) Attempt any two out of three of the following..

1) Discuss measures of dispersion. Which measure is the best? Why?

(7)

2) A set of claim in rupees is given below 192, 136, 253, 138, 87, 112, 221, 176, 336, 203, 159, 55, 308, 165, 254 Present the data graphically using a boxplot.

(7)

3) Calculate mean, standard deviation and third central moment for the following data.

$$N=10, \sum x = 22 \quad \sum x^2 = 80 \quad \sum x^3 = 150$$

(7)

Q. 2)

a) Define Pearson's coefficient of correlation coefficient.

(1)

or

a) Define Spearman's rank correlation coefficient.

(1)

Q. 2) b) Attempt any two out of three of the following.

1) Explain the concept of regression. Explain least square method to fit regression line y on x.

(7)

2) Calculate coefficient of correlation (Pearson's) for the following data.

(7)

x :	12	9	8	10	11	13	7
y :	14	8	6	9	11	12	3

3) From the following data calculate mean values of x and y and Pearson's coefficient of correlation.  
 $9x - 4y + 15 = 0$     $25x - 9y - 7 = 0$

(7)

Q.3)

a) Define Paasche's index number.

(1)

or

a) Define Marshall - Edgeworth index number.

(1)

Q. 3) b) Attempt any two out of three of the following.

1) Give the formula for the following indices

- i. Simple aggregate index number.
- ii. Simple average of price relatives.
- iii. Weighted aggregative index number.
- iv. Weighted average of price relative.
- v. Index number as a geometric mean of price relatives.
- vi. Fisher's index number.
- vii. Cost of living index number [Family budget method].

(7)