2023

Time - 3 hours

Full Marks - 80

*Answer **all groups** as per instructions.*
Figures in the right hand margin indicate marks.

GROUP – A

1. Answer all questions and fill in the blanks as required. [1 × 12

(a) The sum of the deviations of items from Arithmetic mean is always _____.

(b) The difference between largest item and smallest item of a series is called _____.

(c) 15, 35, 40, 20, 30. Find out the median of the series.

(d) When the value of both the variables vary in opposite direction, then it is called _____ correlation.

(e) Correlation coefficient is the Geometric Mean of two _____.

(f) Regression coefficient is independent of change in _____ but not of _____.

(g) Correlation coefficient varies between _____ and _____.

(h) Which Index is an ideal Index ?

(i) If a uniform die is thrown at random, the probability of getting an odd number is _____.

(j) When sample size increases, sample error _____.

(k) If in a series, the standard deviation is 64 and mean is 10; find out the coefficient of variation.

(l) Median is a kind of _____ average.

GROUP – B

2. Answer any eight of the following questions within two to three sentences each. [2 × 8

(a) Define sample.

(b) Define primary data.

(c) What is frequency distribution ?

(d) What is median ?

(e) What is Geometric mean ?

(f) Define mean deviation.

(g) Define Kurtosis.

(h) Define price relative in Index number.

(i) What is Quota sampling ?

(j) Define non-sampling error.

GROUP – C

3. Answer any eight of the following questions within 75 words each. [3 × 8

(a) What is cumulative frequency curve ?

(b) Define Histogram.

(c) Mention the merits and demerits of A.M.

(d) What is Harmonic mean ?

(e) Define quartile deviation.

(f) What is Scatter diagram ?

(g) Define probable error of correlation coefficient.

(h) Find the method of semi-average.

(i) Define Time Reversal Test.

(j) Define conditional probability.

GROUP – D

*Answer **all** questions.*

4. Calculate the mean and median of the following series : [7

X	0-20	20-40	40-60	60-80	80-100
f	5	7	8	6	4

OR

Find out the standard deviation of the following series :

X	10-20	20-30	30-40	40-50	50-60	60-70
f	5	7	8	10	6	4

5. Calculate the Karl Pearson's coefficient of correlation of the following data : [7

X	65	66	67	68	69	70	71
Y	67	68	66	69	72	69	70

OR

Find the regression equation from the following data :

X	1	2	3	4	5
Y	2	5	3	8	7

6. Fit a straight line trend for the method of least squares to the following data : [7

Year	2003	2004	2005	2006	2007	2008	2009
Production (in '000 ton)	82	90	92	83	94	99	92

OR

Define Index number and describe the problems in construction of Index number.

7. A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of drawn ball will be a multiple of (i) 5 or 9 (ii) 3 or 5. [7

OR

Define sampling and describe different types of sampling.