

22

[Time: 2:30 Hours]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All questions carry equal marks.
  2. Figures to the right indicate marks.
  3. Graphs to be provided on required.

Q.1 A) Multiple Choice Questions. (any 8)

(08)

1. The difference between the upper limit and lower limit of class is called \_\_\_\_\_ of class.
  - a) Class mark
  - b) Class width
  - c) Frequency
2. To calculate Rank correlation coefficient we find \_\_\_\_\_ between the ranks.
  - a) Difference
  - b) Sum
  - c) Product
3. \_\_\_\_\_ is a measure of Central Tendency.
  - a) Median
  - b) Standard deviation
  - c) Correlation
4. In Paasche's Index Number \_\_\_\_\_ year quantity is used.
  - a) Base
  - b) Current
  - c) Future
5. Range is determined only by \_\_\_\_\_ point in a data set.
  - a) Two
  - b) One
  - c) Three
6. The total area under normal curve is \_\_\_\_\_.
  - a) 200
  - b) 1
  - c) 10
7. If an Insurance premium is not paid within the \_\_\_\_\_ period, the policy lapses.
  - a) Grace
  - b) Maturity
  - c) Bonus
8. In \_\_\_\_\_ criteria the decision maker calculates the average out come for every alternative.
  - a) Laplace
  - b) Maximin
  - c) Minimin
9. If A and B are independent event then conditional probability  $P(A/B) =$  \_\_\_\_\_.
  - a)  $P(A) - P(B)$
  - b)  $P(A)$
  - c)  $P(B)$
10. For less than curve cumulative frequency are plotted against the \_\_\_\_\_ limit of class Interval.
  - a) Upper
  - b) Lower
  - c) Midpoint

Q.1 B) Match the following. (any 7)

(07)

Column A	Column B
1. Laspeyre's Index Number	a) Lies between -1 & + 1
2. Range	b) 1000
3. Co-efficient of Correlation	c) $x_n - x_1$
4. Tabulated Rate of Annual Premium	d) $1 - P(A)$
5. $P(\bar{A})$	e) $r \frac{\sigma_y}{\sigma_x}$
6. $b_{yx}$	f) $1 - \frac{6 \sum d^2}{N(N^2-1)}$
7. Rank correlation	g) $\frac{Q_3 - Q_1}{2}$
8. Quartile Deviation	h) Regret Table
9. Arithmetic Mean	i) $\frac{\sum pq_1}{\sum pq_0} \times 100$
10. Mini max	j) $\frac{\sum fx}{\sum f}$

Q.2 A) Calculate Quartile Deviation and Co-efficient of Quartile Deviation for the following. (08)

Class Interval	10-20	20-30	30-40	40-50	50-60
Frequency	9	5	11	12	3

Q.2 B) Calculate Mean Deviation from Mean from the following. (07)

Wt in kg	50	55	60	65	70
No of men	20	15	25	10	30

OR

Q.2 C) Calculate co-efficient of correlation between Demand and Price. (08)

Demand Index	100	102	104	106
Price Index	98	115	108	115

Q.2 D) Calculate Regression equation of variables X on Y and Y on X. (07)

$$\sum(x - \bar{x})(y - \bar{y}) = 350 ; n = 5$$

$$\sum(x - \bar{x})^2 = 280 ; \sum(y - \bar{y})^2 = 240$$

$$\sum x = 200 ; \sum y = 110$$

Q.3 A) Calculate Mean and variance of "X" from the following probability. (08)

X	0	1	2	3	4
Probability	0.20	0.25	0.30	0.15	0.10

Q.3 B) A card is drawn at Random from a well shuffled full pack of cards. Events A and B are defined as follows. (07)

A: is the event that the card is a heart

B: is the event that the card is a Queen

Find  $P(A \cup B)$  and what is the event of  $P(A \cap B)$ ?

OR

Q.3 C) Calculate  $D_2$  and  $P_{80}$  for the following. (08)

Class interval	Frequency
100 – 150	4
150 – 200	7
200 – 250	20
250 – 300	9
300 – 350	6
350 – 400	4

Q.3 D) Calculate Index Number using Weighted Average of Relative method. (07)

Commodities	Price		Quantity
	2017	2018	
A	2	4	2
B	3	5	5
C	10	15	10



Q.4 A) Find Class Width, Class mark, less than cumulative frequency greater than cumulative frequency, and Percentage frequency from the following. (08)

Class interval	Frequency
100 – 105	15
105 – 110	12
110 – 115	7
115 – 120	6

Q.4 B) Draw a Histogram & find Mode graphically. (07)

Marks	30-40	40-50	50-60	60-70	70-80
No of students	10	15	20	12	8

OR

Q.4 C) Mr. X wishes to take a Life Insurance Policy of Rs. 3,00,000 with the tabulated rate of Annual Premium at Rs. 55.30 per thousand. The company allows a 4% reduction on the tabulated Amount for yearly payment and Rs. 2 reduction per Rs. 1000 of the Assured sum. Calculate Annual Premium and Net Monthly Premium. (08)

Q.4 D) Calculate Arithmetic Mean & Median for the following. (07)

Height. In cm.	110	111	112	113	114	115	116
No of children	8	10	13	20	25	15	9

Q.5 A) Explain various Index Numbers calculated in India. (08)

B) Explain various types of correlation. (07)

OR

Q.5 C) Write short notes on (any 3) (15)

1. Paid up value in insurance
2. Types of Ogives
3. Merits and demerits of Median
4. Characteristics of good measure of dispersion
5. Explain : a) Probability of an event  
b) Complementary event

\*\*\*\*\*