

[TIME : 2 1/2 Hours]

Marks : 75



NOTE: i) All questions are compulsory.

ii) In Q.1, both A and B are compulsory .

iii) Figures to the right indicate marks.

iv) Use of non-programmable calculator is allowed.

v) Graph will be provided on request.

Q 1) A. Fill in the blanks with correct alternative. (any 8) [8]

1. The data which is collected by first hand sources is known as _____.
(Information, secondary data, Primary data)
2. The graphical representation of data joining the points by smooth curve is called as _____.
(Histogram, frequency polygon, frequency curve, bar diagram)
3. The middle most observation is known as _____.
(median, decile, mode)
4. If the value of coefficient of variation is more then the consistency of data is _____.
(more, less, equal)
5. If coefficient of correlation between x and y is less than zero then there is _____ correlation.
(positive, negative, none)
6. If two variables vary together in the same direction the correlation is _____.
(positive, negative, none)
7. If $b_{xy} = \frac{2}{5}$ and $b_{yx} = \frac{3}{20}$ then $r =$ _____.
(- 0.25, 0.4, none of these)
8. The difference between compound and simple interest on Rs.3000 at 10% p.a. for two years is Rs. _____.
(3, 300, 30, none of these)
9. $F(x) = 100$ is _____ function.
(linear, not a function, constant)
10. The demand is called inelastic if the elasticity of demand is _____.
(zero, one, between 0 & 1, greater than 1)

Q 1) B. State whether the following statements are True or False. (any 7) [7]

1. The difference of highest and smallest observation is known as range.
2. Pie diagram is represented by circle separated in sectors.
3. Standard deviation is relative measure of dispersion.
4. The difference between upper and lower quartiles is known as quartile deviation.
5. Statistical technique can be misused.
6. Coefficient of correlation lies between 0 and 2.
7. For a data $r = 0.3$, $b_{yx} = 0.24$ and $b_{xy} = -0.375$.
8. Compound interest is always less than simple interest.
9. An annuity in which the payments are made as long as person alive is called as annuity certain.
10. Equilibrium point is also known as break even point.
11. The marginal cost is rate of change of total cost with respect to quantity.

Q 2)

- i. Calculate fourth decile and median for the following data :

[8]

Class	0-5	5-10	10-15	15-20	20-25	25-30
Frequency	5	6	8	2	1	3

- ii. Draw the histogram and also locate the mode for the following marks distribution :

[7]

Marks	0-2	2-4	4-6	6-8	8-10	10-12
No. of students	5	7	10	6	8	2

[OR]

Q 2) B.

- i. Draw ogive curve for the following data :

[8]

Expenditure (in Rs. 1000)	10-20	20-30	30-40	40-50	50-60	60-70
No. of family	3	4	6	8	2	1

- ii. Find the missing frequency if the mean is 21.9

[7]

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	---	13	21	16	8	3

Q 3) A.

- i. Calculate the quartile deviation and coefficient of quartile deviation for the following data:

[8]

Class interval	0-20	20-40	40-60	60-80	80-100	100-120	120-140
Frequency	6	8	10	6	4	7	3

- ii. Calculate spearman's coefficient of correlation for the following distribution:

[7]

X	25	30	15	42	29	40
Y	20	40	42	28	39	24

[OR]

Q 3) B.

- i. Find regression equation of y on x for the following data and hence estimate y when x = 25

[8]

X	15	12	10	19	20	22
Y	19	17	14	27	29	31

- ii. Calculate Karl Pearson's coefficient of correlation for the following data :

[7]

X	5	8	2	4	6	10
Y	10	15	6	8	12	18



Q 4)

A. The maturity amount of Rs. 24,33,600 at 20% p.a. compound interest after 2 years is same as the maturity amount of a sum at 30% p.a. compound interest after 2 years. Find the sum. [7]

B. A loan of Rs. 10 lakhs is repaid in 3 equal yearly instalments, at the end of each year, the rate being compounded at 18% p.a. What will be the sum of each instalment? Write down the amortisation table. [8]

OR

C. A company sells x tins of talcum powder each day at Rs. 50 per tin. The cost of manufacturing is Rs. 30 per tin and the distributing charges are Rs. 5 per tin. Besides these costs, there are fixed costs daily of Rs. 3000. Find the break-even point. [7]

D. Find the value of x , for which y is maximum, where $y = 15 + 112x - 3x^2$. [8]

Q 5) Write short Notes on any 3: [15]

- Difference between simple and compound interest
- Elasticity of demand
- Merits and demerits of median
- Interquartile range
- Regression analysis

