

- 1) is compulsory(2marks each)
2)attempt nine questions from section -B(5 marks each)

SECTION –A

Q1)

- Role of statistics in business decisions.
- Finite and infinite sets ..
- Transpose and inverse of a matrix .
- Harmonic Mean and Geometric Mean.
- Quadratic Equation.
- Seasonal variations.
- Rank correlation.
- Difference between mean deviation and standard deviation.
- Properties of correlation.
- Properties of regression coefficients;
- Chain base method of construction of index numbers.
- Independent and mutually exclusive events.
- Characteristics of Binomial distribution.
- Point estimator.
- Chi-square test.

SECTION-B

Q2) If A and B are any two sets then prove:

- $A \cap B \subset A$
- $A \cap B \subset B$
- $A - B = A - (A \cap B)$
- $A \cup B = (A - B) \cup B$
- $B - A = B \cap A^c$

3)solve:

$$\begin{aligned}x - y + z &= 2 \\ 2x - 3y + z &= 1 \\ 3x - y + 2z &= 9\end{aligned}$$

- The sum of three consecutive AP is 15 and their product is 105 .find the numbers.
- The sum of four numbers of GP is 60 and the arithmetic mean between the first and last is 18.find the numbers.
- Explain various measures of central tendency.
- Given the following data estimate
 - The value of 'Y' when 'X'= 70.
 - The value of 'X' when 'Y'= 90.
 Coefficient of correlation = 0.8
- Distinguish giving suitable examples between:
 - Positive and negative correlation
 - Linear and non linear correlation.

9)Calculate the quartile deviation for the following frequency distribution:

X: 60 62 64 66 68 70 72

Frequency: 12 16 18 20 15 13 9

10)

Explain the meaning and importance of time series. Also explain cyclical variation.

Q11)Two balls are drawn from a bag containing 8 red and 7 white balls. Find the chance that (a) they are both red; (b) they are both white; and (c) one is white

a)they are both red;b)they are both white;and c)one is red and the other white.

12)Explain the properties of a normal distribution

Q13)From the following data, use χ^2 test and conclude whether inoculation is effective in preventing tuberculosis:

	Attacked	Not Attacked	Total
Inoculated	31	469	500
Not Inoculated	185	1315	1500
Total	216	1784	2000

inoculated : 31 469 500

Not Inoculated : 185 1315 1500

Total 216 1784 2000