

Note: Section-I is compulsory. Attempt any Three (3) questions from Section-II.

SECTION - I

2. Write short answers to any EIGHT (8) questions: **FGSTL (2 x 8 = 16)**

- Define statistics.
- Differentiate between variable and constant.
- Write down any four qualities of a good average.
- Define Geometric Mean.
- Given $\sum(X-10) = 2.8$ and $n = 5$. Find Mean : $\bar{X}$.
- Define weighted arithmetic mean.
- Given $L=60$, $h=10$, $f=20$, $n=80$ and $c=30$. Find median.
- Write down the empirical relationship between mean, median and mode.
- Define Price Relative.
- Given P_{on} (Laspeyre's) = 120, P_{on} (Paasche's) = 118. Find P_{on} (Fisher) price index number.
- Given $W=20, 25, 30, 40$ and $I=100, 105, 110, 120$. Find consumer price index number.
- What are the uses of index numbers?

3. Write short answers to any EIGHT (8) questions: **(2 x 8 = 16)**

- Define tabulation.
- Define frequency distribution.
- What is meant by absolute dispersion?
- First, second and third quartiles of a distribution are 142, 153 and 167 respectively. Find coefficient of skewness.
- Write down two properties of variance.
- What do you mean by kurtosis?
- Given that $n=8$, $\sum D = 10$, $\sum D^2 = 524$. Find variance, where $D = X - 15$.
- Define mean deviation.
- Define probability of an event.
- What are independent events?
- State addition law of probability for mutually exclusive events.
- State multiplication law of probability for two independent events.

4. Write short answers to any SIX (6) questions: **(2 x 6 = 12)**

- What do you mean by probability density function?
- Narrate two laws of expectation.
- Given that $E(X+4) = 10$ and $E(X+4)^2 = 116$. Find variance $(X+4)$.
- A continuous random variable X has probability density function $F(X) = c(4-X)$ for $1 \leq X \leq 3$
 $F(X) = 0$ elsewhere. Find the value of c .
- For a binomial distribution with $n = 10$ and $p = \frac{1}{3}$. Find $P(X = 5)$.
- If X is a hypergeometric random variable with $N = 8$, $n = 6$ and $K = 5$. Find S.D.(X).
- Describe hypergeometric experiment.
- Write down the properties of a binomial experiment.
- Describe hypergeometric probability distribution.

