2024

Time : 3 hours

Full Marks : 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from **all** *the Groups as directed.*

(Statistics)

Group – A

(Objective Type Questions)

(Compulsory)

1. Choose the correct answer of the following : $2 \times 10 = 20$

   (a) In which distribution, mean and variance are same ?

   (i) Normal (ii) Poisson

   (iii) Binomial (iv) None of these

(b) The conditional probability A given B is :

(i) $P(A \cap B) / P(A)$ (ii) $P(A \cap B) / P(B)$

(iii) $P(A)\ P(B)$ (iv) None of these

(c) In case of Symmetrical Curve :

(i) Mean < Median < Mode

(ii) Mean = Median = Mode

(iii) Mean > Median > Mode

(iv) None of these

(d) The median value of 2, 3, 5, 7, 9, 11, 13 :

(i) 7 (ii) 9

(iii) 5 (iv) 3

(e) Median divides the data into _____ equal parts.

(i) 4 (ii) 2

(iii) 10 (iv) 100

(f) The sum of deviations from the mean is always :

(i) 0 (ii) Minimum

(iii) 1 (iv) Maximum

(g) If A and B are two independent events then :

(i) $P(A \cap B) = P(A)\ P(B)$

(ii) $P(A \cap B) = P(A) + P(B)$

(iii) $P(A \cap B) = P(A) - P(B)$

(iv) None of these

(h) If the values of two variables move in the same direction, the correlation is said to be

(i) Positive (ii) Perfect

(iii) Linear (iv) Non-linear

(i) How many independent variables in simple linear regression ?

(i) 1 (ii) 2

(iii) 0 (iv) 4

(j) Statistics is the science which deals with ?

(i) Collection of data

(ii) Tabulation of data

(iii) Classification of data

(iv) All of these

Group – B

(Short-answer Type Questins)

Answer any **four** questions of the following : $5 \times 4 = 20$

2. Define Moments and its types.

3. Discuss Binomial distribution.

4. Discuss Probability and their properties.

5. Define Range and Variance with examples.

6. Discuss the correlation coefficient with examples.

7. Find the mean of first 'n' natural numbers (1, 2, 3... n).

Group – C

(Long-answer Type Questions)

Answer any **three** questions of the following : $10 \times 3 = 30$

8. Discuss the Poisson distribution and find its mean and variance.

9. Describe measure of central tendency and their types with examples.

10. Define Statistics with its applications and scopes and limitation.

11. Explain Skewness and Kurtosis.

12. Discuss simple and multiple linear regressions with examples.