

Total No. of Questions : 11

11T2KJ8

1610

STATISTICS

Maximum Marks : 40

Paper – Second Term

Time : 2½ Hours

Note : In case of failures/re-appear cases and fresh private candidates; i.e. candidates appearing for the first time after having passed Secondary School Examination, marks secured out of 40 shall be raised proportionately as if obtained out of 60.

(Long Answer Type Questions)

1. Define Moments. Establish the relationship between the Raw moments and the Central moments.

5

Or

What do you mean by 'Skewness' in Statistics ? Explain briefly the methods of measuring Skewness.

2. What is Correlation ? Discuss different types of Correlation. Also prove $|r| \leq 1$.

Or

Define Rank correlation. Write down Spearman's formula for Rank correlation P. What are the limits of P. Interpret the case, when P, assumes the minimum value.

5

3. A problem in Statistics is given to five Students A, B, C, D and E. Their chances of solving it are

5



respectively. What is the probability that the problem will be solved ?

Or

Define the following terms :

- (a) Mutually Exclusive events,
- (b) Independent events,
- (c) Exhaustive events and
- (d) Equally likely events.

4. What is stratified Sampling ? Give its advantages and disadvantages. 5

Or

What is Complete Enumeration ? Discuss the advantages of Sample Survey over Complete Enumeration.

(Short Answer Type Questions)

5. Find the Coefficient of Skewness from the following information : 3

Difference of two quartiles = 8

Mode = 11

Sum of two quartiles = 22

Mean = 8

6. From a bag containing 10 black and 20 white balls, a ball is drawn at random. What is the probability that it is black ? 3

7. What are Sampling and Non-sampling errors ? 3

8. State the conditions, when two attributes A and B may be termed : 3

(i) Independent,

(ii) Positively associated and

(iii) Negatively associated.

9. Prepare a 3 x 3 table for the following information and calculate Yule's coefficient of Association : 3

$$N = 1500, (A) = 1117, (B) = 360, (AB) = 35$$

(Very Short Answer Type Questions)

10. The following very short answer type questions of one mark, each may be answered in a few words or few sentences or as may be required :

- (a) Define Probability of an even 'E' and prove 1
- (b) What are Attributes and order of Classes ? 1
- (c) What is Scatter diagram ? 1

(Multiple Choice Type Questions)

11. In case of the following two multiple chose type questions, Choose the correct/most appropriate answer and write it in your Answer-book :

- (i) Karl Pearson's coefficient of correlation lies between 1
- (a) 0 ad 1
 - (b) - 3 ad 3
 - (c) - 1 and 1
 - (d) None of the above
- (ii) Additional theorem of Probability states that if two events A and B are mutually exclusive, the probability of occurrence of either A or B is given by
- (a) $P(A) + P(B)$
 - (b) $P(B) \times P(A)$
 - (c) $P(A) + P(B) - P(A \cap B)$
 - (d) None of the above.

