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GSM/D-21 926

ELEMENTARY INFERENCE

Paper–I (ST-301)

Time Allowed : 3 Hours] [Maximum Marks : 40

Note : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Define level of significance. 1

   (b) What is efficient statistic? 1

   (c) A hypothesis contrary to null hypothesis is known as 1

   (d) Define interval estimate of a parameter. 2

   (e) What is critical region? 1

   (f) Explain sampling distribution of a statistic. 2

UNIT-I

2. (a) Find the standard error of Proportion. Also explain the utility of standard error. 5

   (b) Define Unbiasedness and efficiency. Show by example that a most efficient estimator is not necessarily unbiased. 3

3. Explain the properties of a good estimator in detail with examples. 8

UNIT-II

4. Explain the method of moments for estimating of parameters. Also explain its properties. 8

5. Estimate the value of parameters of Normal distribution. 8

UNIT-III

6. What is test of significance? Define and explain two tailed test used in testing of hypothesis. Also explain level of significance. 8

7. Explain types of errors in testing of hypothesis. What is BCR and power of a test? Also explain simple and composite hypothesis. 8

UNIT-IV

8. Explain Fisher's Z transformation in detail. 8

9. Explain testing of a single mean. How confidence interval is determined in case of mean and variance. 8