Exam. Code : 103205
Subject Code : 1212

B.A./B.Sc. 5th Semester

QUANTITATIVE TECHNIQUES

(Quantitative Techniques—V)

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt ***five*** questions in all. **First** question is compulsory. Attempt any ***one*** question from each of the ***four*** units. All questions carry equal marks.

1. Give short answers to the following :
   (a) One Tailed Test
   (b) Normality Assumption
   (c) Randomized Block Design
   (d) Continuous Variable
   (e) Statistic vs. Parameter
   (f) Acceptance Region
   (g) Confidence Interval
   (h) Type II Error
   (i) Degree of Freedom
   (j) Alternate Hypothesis.

UNIT—I

2. What are the characteristic features of a good estimator ? Explain in detail.
3. Find the probability of four heads in six flips of an unbiased coin by using binomial distribution.

UNIT—II

4. Derive the basic properties of t-distribution.
5. Highlight the characteristic features of Chi-square distribution.

UNIT—III

6. An I.Q. test was administrated to five persons before and after they were trained. The results are given below :

   Test whether there is any change in I.Q. after training programme.

Candidates	I	II	III	IV	V
I.Q. before training	110	120	123	132	125
I.Q. after training	120	118	125	136	121

7. "The Chi square test is a non-parametric test", comment on the correctness of the statement. Explain the mechanics of this test.

UNIT—IV

8. Perform a Two-way ANOVA on the data given below and interpret your results :

Plots of land	Treatments			
	A	B	C	D
I	38	40	41	39
II	45	42	49	36
III	40	38	42	42

9. What is the purpose of carrying out the Analysis of Variance (ANOVA) ? Enlist the assumptions of ANOVA technique.