

Exam. Code : 103205

Subject Code : 1199

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

QUANTITATIVE TECHNIQUES

(Quantitative Techniques—V)

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt *five* questions in all, selecting at least *one* question from each section. The *fifth* question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. What are the main features of Poisson distribution ? Explain by giving suitable examples.
2. Define Hypothesis in the statistical parlance. What is the difference between NULL and ALTERNATE Hypothesis ? Write a note on hypothesis testing.

SECTION—B

3. Derive the basic properties of t-distribution.
4. Highlight the characteristic features of Chi-square-distribution. Highlight its use by giving a suitable example.

SECTION—C

5. What is the difference between Paired t-test and Non-paired t-test ? Enlist four situations (two each) where these can be applied.

6. A certain drug was administered to 200 people out of a total of 500 included in the sample to test its efficacy against Dengue. The results are as follows :

	Incidence of Dengue		Total
	Yes	No	
Drug	50	150	200
No Drug	250	50	300
Total	300	200	500

Can you say that drug is effective in preventing Dengue ?

SECTION—D

7. A manufacturer appoints 3 workers A, B and C and observes their production in terms of number of units produced with the use of three different machines X, Y, Z. Perform a Two-way ANOVA on the data given below and interpret your result on average production status :

Workers	Machines		
	X	Y	Z
A	16	64	40
B	56	72	56
C	12	56	28

8. Is the Analysis of Variance (ANOVA) technique an extension of the tests used for testing the difference between two means ? Support your agreement/disagreement with the details. Enlist the assumptions of ANOVA technique for CRD and RBD of experiment.