Exam. Code : 103205
Subject Code : 1211

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

QUANTITATIVE TECHNIQUES

(Quantitative Techniques—V)

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt ***five*** questions in all. Question No. **1** is compulsory and attempt ***one*** question from each of the four units.

1. Write notes on the following :
   (a) One tailed test
   (b) Null hypothesis
   (c) Randomised block design
   (d) Standard normal variate
   (e) Application area of Chi-square test
   (f) Level of significance
   (g) Degrees of freedom
   (h) Rejection region
   (i) Random variable
   (j) Sample statistic. 20

UNIT—I

2. Highlight the characteristics features of F distribution. 20
3. Derive the basic properties of 't' distribution. 20

UNIT—II

4. Give an overview of the Maximum Likelihood Method of estimation and outline the properties of the estimates obtained by this method. 20

5. In a lot of wheat grains, 20 percent are of substandard quality. Determine the probability that out of 5 grains chosen at random from that lot (a) at least one (b) at the most three grains are of substandard quality. 20

UNIT—III

6. Define Student's 't'. What are the variants of t-test known to you ? What are the situations where these are used ? 20

7. A magazine published the following results of an opinion survey regarding election :

Attitude	Economic Status	
	Rich	Poor
Favourable	51	156
Unfavourable	91	111

Is the attitude towards elections guided by economic status of the voters ? 20

UNIT—IV

8. Write a note on "Analysis of Variance" technique. Discuss the underlying assumptions for the application of this technique. 20

9. A certain company had four salesmen A, B, C and D assigned to three areas, rural, urban and semi urban. The results pertaining to the sales in '000 Rs. per week are given below. Analyse the data using ANOVA technique and discuss your results along with the purpose the analysis is going to serve :

10. Area		11 Salesmen		
12.	13. A	14. B	15. C	16. D
17. Rural	18. 30	19. 70	20. 30	21. 30
22. Urban	23. 80	24. 50	25. 40	26. 70
27. Semi urban	28. 100	29. 60	30. 80	31. 80

20