

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai — 600 044.

B.Sc. END SEMESTER EXAMINATION APRIL/NOV - 2021

SEMESTER - V

13USTCT5010 & UST/CT/5010 - Design of Experiments

<b>Total Duration : 3 Hrs</b>	<b>Total Marks : 75</b>
MCQ : 30 Mins	MCQ : 15
Descriptive : 2 Hrs.30 Mins	Descriptive : 60

Section B

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Show the assumptions for ANOVA.
2. Define local control.
3. Show Cochran's theorem.
4. Show the advantages of completely randomised block design.
5. Illustrate the ANOVA table for randomised block design.
6. Show the appropriate statistical model for ANOCOVA for CRD with one concomitant variable.
7. Illustrate the advantages of factorial experiment.
8. Show the partially confounded  $2^3$  experiment.

Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Evaluate one missing observation in random block design.
10. Illustrate Tukey's test for Non – additivity for two – way layout with one observation per cell.
11. Organize the statistical analysis of  $m \times m$  Latin Square Design for one observation per experimental unit
12. Appraise the statistical analysis of  $2^2$  factorial design.
13. Associate Fairfield Smith's variance law for fixing the size and shape of the plot.