

## B.Sc. Sem.-5 Examination

CC-304

Statistics

March-2025

Time : 2-30 Hours]

[Max. Marks : 70

- Q.1 A. Give complete layout of one-way ANOVA 7  
 B. Explain three principals of experimental design. 7  
 OR
- A. Obtain expectations of treatment sum of squares in one way ANOVA. 7  
 B. Obtain expectations of error sum of squares in one way ANOVA. 7
- Q.2 A. Give complete layout of two-way ANOVA. Obtain expectations of 7  
 treatment sum of squares in two-way ANOVA.  
 B. Obtain expectations of sum of squares due to variety and error in two- 7  
 way ANOVA  
 OR
- Q.2 A. Define: Treatment, Block, Experimental unit, and Experimental error. 7  
 B. Explain CRD. Discuss its advantages and disadvantages. 7
- Q.3 A. Explain Randomized Block Design. Give its layout, advantages and 7  
 disadvantages.  
 B. Give statistical analysis of RBD for one observation per experimental unit. 7  
 OR
- Q.3 A. Write a short note on LSD. 7  
 B. Obtain relative efficiency of LSD with RBD when rows are used as blocks. 7
- Q.4 A. Explain 2 factorial design in detail. 7  
 B. Explain Yate's method of calculating yields of main effect and interaction 7  
 effect.  
 OR
- Q.4 A. Explain the procedure to estimate one missing observation in RBD. 7  
 B. Obtain efficiency of RBD relative to CRD 7
- Q.5 **Attempt any Seven** 14
- 1 Define treatment.
  - 2 Define blocks.
  - 3 Define degree of freedom.
  - 4 Define experimental unit.
  - 5 Define experimental error.
  - 6 Define replication.
  - 7 When do we find the value of critical differences in ANOVA?
  - 8 What is the full form of CRD and RBD?
  - 9 Why is LSD known as Square design?
  - 10 Define partial confounding design.
  - 11 What is randomization?