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Bachelor of Science (B.Sc.) Semester–VI (C.B.S.) Examination

STATISTICS

(Experimental Designs)

Paper–2

Time : Three Hours] [Maximum Marks : 50

N.B. :— All questions are compulsory and carry equal marks.

1. (A) Give the complete statistical analysis of two way classified data with one entry per cell. 10

OR

(E) Explain the linear model in the analysis of variance of three way classified data. Show that the total sum of squares can be written as sum of seven different components. 10

2. (A) Give the complete statistical analysis of CRD. 10

OR

(E) What is meant by 'design of an experiment' ? Describe the three principles of designs of experiments. 10

3. (A) Explain the situations in which a randomised block design is considered an improvement over a completely randomised design. Discuss the advantages and disadvantages of R.B.D. 10

OR

(E) Give complete analysis of LSD. 10

4. (A) Distinguish between simple experiments and factorial experiments carry out complete analysis of 2^2 factorial experiment arranged in RBD. 10

OR

(E) A 2^3 factorial experiment is arranged in an RBD with r replicates. Explain the main effects and interaction effects. Also, describe the procedure for testing the significance of various main effects and interaction effects. 10

5. Solve any **ten** :
   (A) Define BLUE.
   (B) State any one assumption involved in ANOVA Technique.
   (C) Define linear parametric function.
   (D) What are uniformity trials ?
   (E) Explain the in.
   (F) Define efficiency of a design.
   (G) What is a Latin square ?
   (H) How is LSD, an improvement over RBD ?
   (I) Define a treatment contrast.
   (J) Give an expression for main effect A in 2^2 factorial experiment.
   (K) Define treatment contrast.
   (L) What are uniformity trials ? 1×10=10

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