Registration Number:

Date & Session:

ST JOSEPH'S UNIVERSITY, BENGALURU -27
M.Sc. STATISTICS– 4th SEMESTER
SEMESTER EXAMINATION: APRIL 2024
(Examination conducted in May / June 2024)

ST0220: Design and Analysis of Experiments
(For current batch students only)

Time: 2 Hours **Max Marks: 50**

This paper contains ONE printed page and ONE parts

PART-A

Answer any FIVE of the following **10 X 5 = 50**

1. A) Define fixed and random effect models with an example.
   B) What is connectedness and orthogonality in a block design?
   C) State the model for general block design with assumptions. (4+3+3)

2. A) Obtain information matrix in general block design. Also state its properties.
   B) Describe multiple comparison test. Explain any two multiple comparison tests. (4+6)

3. A) Describe Balanced Incomplete block design.
   B) Explain missing plot technique for RBD. (4+6)

4. Explain Latin square design with an example. Obtain its normal equations. Also, setup the ANOVA table. (10)

5. A) Discuss in detail, one-way analysis of variance with a single covariate for CRD.
   B) Write a note on Youden square design. (6+4)

6. A) Discuss Yates technique to compute the sum of squares due to main effects and the interaction effects in a 2^3 -factorial experiment.

   B) Explain partial confounding in factorial experiment with an example. (5+5)

7. A) Write a note on analysis of 3^2 -factorial experiment.
   B) Give the layout of a 2^4 -factorial experiment in two incomplete blocks so as to confound ABCD effect. (6+4)

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