INTEGRATED MSC DEGREE EXAMINATION, MAY 2024

Seventh Semester

INTEGRATED MSC BASIC SCIENCE-STATISTICS

CORE - IST7CR05 - DESIGN AND ANALYSIS OF EXPERIMENTS

2020 Admission Onwards

0C92C0E2

Time: 3 Hours   Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Write an example for one-way classification data.

2. Prove: The mean square error is an unbiased estimator for the error variance.

3. Give two advantages of CRD.

4. Discuss how the various principles of experimentation are applied in RBD.

5. Define Incidence matrix.

6. Write a short note on Intrablock analysis.

7. What do you meant by PBIBD?

8. Write a short note on factorial design.

9. What do you meant by 2^3 factorial experiments.

10. Define strip plot design.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Perform ANOVA for three way classifocation models.

12. Briefly explain the idea of replication as one of the principles of experimentation.

13. Estimate two missing observations in RBD.

14. Write a note on Graeco Latin Square design.

15. Briefly explain Balanced incomplete block designs.

16. Explain fisher's inequality and improve it in the forms
    i) r>=k
    ii) b >= r+v-k

17. Briefly explain 2^2 factorial experiment in RBD.

18. Describe 3^2 factorial experiment .

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain the analysis of two-way classification model.

20. What is a latin square design? Obtain it's analysis.

21. Explain Lattice designs.

22. Explain analysis of 3^n factorial experiment.

(2×5=10 weightage)