B.Sc. DEGREE EXAMINATION,APRIL 2019
III Year V Semester
Design of Experiments

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Write Smith's formula to find optimum lot size.
2. What is an experimental unit?
3. Define Analysis of Variance.
4. State Cochran's Theorem.
5. What is meant by Analysis of Covariance Technique?
6. Construct a Randomized Block Design with 3 blocks and 4 treatments.
7. State the advantages of using Completely Randomised Design.
8. What is missing plot technique?
9. Define confounding.
10. What is the need of factorial experiment?
11. What is the use of Yate's method in Design of Experiments?
12. What is the method used in finding the missing observation?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Briefly explain maximum curvature method to determine the size of the experimental unit.
14. Write the ANOVA for two-way classification.
15. Distinguish between completely randomised design and Randomized block design.
16. State the merits and of completely randomized design.
17. Write the formula of estimating one missing observation in Latin Square Design.
18. Distinguish between total and partial confounding.
19. State the conditions under which split plot design is suitable.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Discuss the fundamental principles of experimental design.
21. Write the steps involved in analysis of variance in one-way classification.
22. Derive the formula to find one missing observation in a Randomized block design.
23. Derive the ANOVA of Latin square design, the mathematical model and hypothesis.
24. Explain in detail the ANOVA of 3^2 design stating its hypothesis.

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