B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
III Year V Semester
Core Major - Paper X
DESIGN OF EXPERIMENTS

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

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

Answer any **TEN** questions

1. Define Analysis of Variance.
2. What is an experimental unit?
3. Explain the need for replication in experimental design.
4. Construct a 3x3 latin square design.
5. Give any two advantages of Randomized block design.
6. State the mathematical model for analysis of covariance of one-way layout having one concomitant variable.
7. Give an example for a concomitant variable in experimental design.
8. What is the need for multiple range test?
9. What is confounding?
10. State the hypothesis of a 3^2 factorial design.
11. Give any two limitations of Completely Randomized design.
12. What do you understand by the term efficiency of a design.

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

Answer any **FIVE** questions

13. Briefly explain Fairfield Smith's variance law in the determination of experimental unit.
14. State Cochran's theorem.
15. Write a short note on Duncan's multiple range test.
16. Distinguish between Completely Randomized design and Randomized Block design.
17. State the advantages of partial confounding over complete confounding.
18. Give an example where factorial design is more suitable than other designs.
19. Derive the estimate of one missing observation in a Latin Square design.

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

Answer any **THREE** questions

20. Explain the Principles of an experimental design.
21. State the mathematical model and indicate the analysis in the case of one-way classification.
22. Derive the analysis of variance of a Latin Square design stating the mathematical model and hypothesis.
23. What is the use of missing plot technique? Explain the method of estimating two missing values in Randomized Block design.
24. Describe a Split plot design and give its analysis of variance.

B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
III Year V Semester
Core Major - Paper X
DESIGN OF EXPERIMENTS

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

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

Answer any **TEN** questions

1. Define Analysis of Variance.
2. What is an experimental unit?
3. Explain the need for replication in experimental design.
4. Construct a 3x3 latin square design.
5. Give any two advantages of Randomized block design.
6. State the mathematical model for analysis of covariance of one-way layout having one concomitant variable.
7. Give an example for a concomitant variable in experimental design.
8. What is the need for multiple range test?
9. What is confounding?
10. State the hypothesis of a 3^2 factorial design.
11. Give any two limitations of Completely Randomized design.
12. What do you understand by the term efficiency of a design.

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

Answer any **FIVE** questions

13. Briefly explain Fairfield Smith's variance law in the determination of experimental unit.
14. State Cochran's theorem.
15. Write a short note on Duncan's multiple range test.
16. Distinguish between Completely Randomized design and Randomized Block design.
17. State the advantages of partial confounding over complete confounding.
18. Give an example where factorial design is more suitable than other designs.
19. Derive the estimate of one missing observation in a Latin Square design.

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

Answer any **THREE** questions

20. Explain the Principles of an experimental design.
21. State the mathematical model and indicate the analysis in the case of one-way classification.
22. Derive the analysis of variance of a Latin Square design stating the mathematical model and hypothesis.
23. What is the use of missing plot technique? Explain the method of estimating two missing values in Randomized Block design.
24. Describe a Split plot design and give its analysis of variance.