M 496

Reg. No. : .....

Name : .....

VI Semester B.A./B.Sc./B.Com./B.B.A./B.B.A.T.T.M./B.B.M./B.C.A./B.S.W./ B.A. Afsal Ul Ulama Degree (CCSS – Regular) Examination, April 2012

CORE COURSE IN STATISTICS

6B 13 STA : Design of Experiments

Time : 3 Hours Max. Weightage : 30

***Instruction** : **Use** of calculator and statistical tables **permitted**.*

PART – A

Answer **any 10** questions (Weightage **1 each**) : **(1 each)**

1. What is linear hypothesis ?
2. Define "BLUE".
3. Define critical difference.
4. Explain Levene's test.
5. What is the difference between CRD and RBD ?
6. In a LSD with 4 treatments and error sum of squares is 16, find mean error sum squares.
7. What are the limitations of LSD ?
8. Define orthogonal contrast.
9. State the advantages of factorial experiments over simple experiment.
10. Explain the significance of experimental error in ANOVA.
11. What do you understand by a missing plat in a design of experiment ? **(Wt. 10×1=10)**

PART – B

Answer **any 6** questions. (Weightage **2 each**) : **(2 each)**

12. State and prove the necessary and sufficient condition for estimability of linear parametric function.

P.T.O.

13. What is meant by analysis of variance of experimental data ? What are the assumptions made in it ?
14. Give the analysis of variance of one way classified data.
15. Derive the expression for estimating one missing observation in RBD.
16. Derive the efficiency of LSD compound to RBD.
17. Explain the situation where factorial experiments are used.
18. Distinguish between ANOVA and ANCOVA.
19. What is meant by confounding in design of experiments ?
20. Explain Greeco Latin Square design. **(Wt. 6×2=12)**

PART – C

Answer **any 2** questions. (Weightage **4 each**) :

21. State and prove Gauss-Markov theorem.
22. Explain the principles of experimentation. Explain how these principles are used in RBD.
23. Derive the analysis of variance of LSD.
24. Explain the statistical analysis of 2^2 factorial design. **(Wt. 2×4=8)**
