LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

SIXTH SEMESTER – **APRIL 2015**

ST 6606/ST 6603/ST 6600 - DESIGN AND ANALYSIS OF EXPERIMENTS

Date : 15/04/2015 Dept. No. Max. : 100 Marks

Time : 09:00-12:00

PART – A

Answer ALL Questions **(10 x 2 = 20 marks)**

1. What do you understand by fixed effect model?
2. Define mixed effect model.
3. Define Replication.
4. State the assumptions of ANOVA.
5. State the disadvantages of Randomized Block Design.
6. Write the treatment combinations of 2^3 Factorial Experiments.
7. Write down the linear additive model of Latin Square Design.
8. Define Confounding in Factorial Experiments.
9. Discuss about the parameters of BIBD.
10. Define Incomplete Block Design.

PART – B

Answer any FIVE Questions **(5 x 8 = 40 marks)**

11. Explain about the principles of Experimental Design.
12. Discuss about the linear model in one- way ANOVA with its statistical analysis.
13. Estimate the one missing observation in Randomized Block Design.
14. Discuss in detail about the analysis of partially confounded 2^3 experiment.
15. Describe the concept of Factorial Experiments.
16. Explain the advantages and disadvantages of Latin Square Design.
17. Discuss the main objectives in constructing BIBD.
18. Differentiate between Randomized Block Design and Latin Square Design.

PART – C

Answer any TWO Questions **(2 x 20 = 40 marks)**

19. a) Describe in detail about the Two- way ANOVA with its statistical analysis. (15 marks)
    b) Discuss the advantages of Completely Randomized Design. (5 marks)
20. Explain about the statistical analysis of Latin Square Design for one observation per cell. (20 marks)
21. a) Explain the concept of Missing Plot Technique. (5 marks)
    b) Discuss the analysis of Randomized Block Design with two missing observations. (15 marks)
22. a) Explain in detail about the 2^3 - Factorial Experiments. (10 marks)
    b) Explain briefly the intra block analysis of BIBD. (10 marks)

\$\$\$\$\$\$