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Question Paper Code: 92013

M.E. DEGREE EXAMINATION, OCTOBER 2014.

Elective

CAD / CAM

01PCD522 – DESIGN AND ANALYSIS OF EXPERIMENTS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the importances of experiments?
2. Define sample size.
3. Obtain relative efficiency of Randomized Block Design in comparison to Completely Randomized Design.
4. What are the advantages of pair wise comparison tests?
5. What are the advantages of 2K factorial experiments?
6. State the concept of confounding in factorial experiments.
7. What is mean by nested designs?
8. Give the use of response surface designs.
9. Write down the use of Taguchi experimental design.
10. Briefly explain about parameter design.

PART - B (5 x 14 = 70 Marks)

11. (a) Explain in detail about experimental strategies. (14)

Or

- (b) (i) Explain the various steps involved in experiment design process. (7)
(ii) Discuss the linear regression model in detail. (7)
12. (a) Describe the analysis of a Latin square design. (14)
- Or
- (b) Explain in detail about model adequacy checking. (14)
13. (a) Briefly explain about three factor full factorial experiments. (14)
- Or
- (b) In the case of two associate class PBIBD, define the parameters and develop the intra-block analysis using a suitable model. (14)
14. (a) Explain in detail about Response surface methodology. (14)
- Or
- (b) Describe the rules for determining the expected mean square. (14)
15. (a) Explain in detail about various steps involved in experimentation. (14)
- Or
- (b) Briefly explain about (i) Robust design (7)
(ii) Data analysis. (7)

PART - C (1 x 10 = 10 Marks)

16. (a) Discuss the advantage of ANOVA technique with real life example. (10)
- Or
- (b) Briefly explain the confounding and blocking in 2K Factorial Designs. (10)
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