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Question Paper Code: 52914

M.E. DEGREE EXAMINATION, DECEMBER 2015

Elective

CAD / CAM

15PCD522 – DESIGN AND ANALYSIS OF EXPERIMENTS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) (i) Explain in detail about experimental strategies. (14)
(ii) Write short notes on ANOVA technique. (6)

Or

- (b) (i) Explain the various steps involved in experiment design process. (10)
(ii) Discuss the linear regression model in detail. (10)

2. (a) (i) Describe the analysis of a completely Randomized design with k observations per cell. (20)

Or

- (b) Develop the analysis of covariance for randomized block design with one Co-committant variable, stating clearly the assumptions. (20)

3. (a) Explain in detail about three factor full factorial experiments with suitable example. (20)

Or

- (b) In the case of two associate class PBIBD, define the parameters and develop the intra-block analysis using a suitable model. (20)
4. (a) (i) Explain in detail about Response surface methodology. (14)
(ii) Write short notes on split plot design. (6)
- Or
- (b) Explain in detail about approximate F-tests. (20)
5. (a) (i) Illustrate the applications of orthogonal arrays. (10)
(ii) Discuss about various controllable and noise factors. (10)
- Or
- (b) Construct a case study for the three types of signal-to-noise ratio (S/N Ratio) used in taguchi's robust design. (20)
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