Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 01

Total No. of Questions : 08

M.Tech (ME) (2017 Batch)   (Sem.–2)
RESEARCH METHODOLOGY
Subject Code : MTME-201
Paper ID : [74977]

Time : 3 Hrs.   Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. a) Define Research and explain the process of Research Methodology with an example. (2,8)

    b) Difference between Probability and Non-Probability Sampling   (5)

    c) Explain the need of conduct of Review of Literature.   (5)

2. a) Distinguish between Sampling Errors and Non- Sampling errors.   (5)

    b) Explain the purpose of Design of Experiments and indicate the characteristics of a good experimental design.   (5,5)

    c) Describe Randomized Block Design.   (5)

3. a) Define 'experimental error'. What are its main sources?   (2,3)

    b) Define ANOVA and describe its assumptions. Give the complete analysis of one way classification of Data.   (2,4,9)

4. a) Explain Taguchi's Robust Parameter Design with suitable example.   (10)

    b) Explain design of experiments with the help of orthogonal arrays.   (10)

5. a) Explain Response Surface Methodology and describe Analysis of Second Order Response Surface.   (12)

    b) Explain the significance of Noise factors and Tolerance on control factors. (4,4)

6. a) Differentiate between a research proposal and a research report and describe stages of writing a research report.   (4,6)

    b) Describe classification of experimental designs with one example each.   (10)

7. a) Enlist five features of computing statistics in SPSS.   (10)

    b) Describe significance of MINI TAB and MS EXCEL for analysis of data.   (5,5)

8. a) Explain the role of reproducibility of research results in engineering. Describe accountability in relation to reproducibility of results.   (6,6)

    b) Describe features of any one Plagiarism Tool.   (8)