

Roll No.....
Total No. of Questions: [11]

Total No. of Printed Pages: [1]

M.Tech. Civil(CTM) (Semester – 3rd)
RESEARCH METHODOLOGY
Subject Code: MREM0101
Paper ID: [190314]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A (4 marks each)

- Q1. Define research methodology. Discuss its objectives and the process involved.
- Q2. Explain the types of research designs with suitable examples.
- Q3. Why is it essential to define a research problem? Discuss the process of problem formulation.
- Q4. What are the basic principles of experimental design? Explain the Randomized Block design.

Section – B (8 marks each)

- Q5. Discuss the importance of literature review in research. Explain how it aids in problem formulation.
- Q6. Differentiate between probability sampling and non-probability sampling techniques. Provide examples for each.
- Q7. Explain the various scaling techniques used in research. How do researchers decide which scaling technique to use?
- Q8. Discuss the concept of reliability in research. How can researchers ensure the reliability of their data collection instruments?

Section – C (10 marks each)

- Q9. Describe the process operations involved in data processing. Explain the significance of each operation.
- Q10. Discuss the measures of central tendency and dispersion. How are they useful in analyzing research data?
- Q11. Explain the process of hypothesis testing. Discuss the applications of T-test and F-test in research analysis.