



End Term (Odd) Semester Examination November 2025

Roll no.....

Name of the Course and semester: M.Tech & III

Name of the Paper: Introduction to Research Methodology

Paper Code: MRD-302

Time: 3 hour

Maximum Marks: 100

Note:

- (i) All the questions are compulsory.
- (ii) Answer any two sub questions from a, b and c in each main question.
- (iii) Total marks for each question is 20 (twenty).
- (iv) Each sub-question carries 10 marks.

Q1. (2X10=20 Marks)

- a. Define a research problem. Discuss the criteria for identifying a significant and feasible research problem. CO-1
- b. Explain common errors in selecting a research problem and their long-term impact on research quality. CO-1
- c. Discuss various approaches for investigation of research problems with suitable real-life examples. CO-1

Q2. (2X10=20 Marks)

- a. What are the essential steps for conducting an effective literature review? Why is it important in academic research? CO-2
- b. Explain plagiarism and its types. Suggest practical methods for academic integrity in research. CO-2
- c. Discuss research ethics with examples of ethical violations reported in real research publications. CO-2

Q3. (2X10=20 Marks)

- a. Describe in detail the structure and components of an effective research proposal. CO-3
- b. Differentiate between technical writing and scientific writing with suitable examples. CO-3
- c. What parameters are generally used by review committees to evaluate dissertations? CO-3

Q4. (2X10=20 Marks)

- a. Differentiate between patents, designs, trademarks, and copyrights with suitable examples. CO-4
- b. Explain the Patent Cooperation Treaty (PCT). What are its advantages for patent filing? CO-4
- c. Write a detailed note on the procedure for grant of patents in India. CO-4

Q5. (2X10=20 Marks)

- a. Discuss the scope of patent rights and explain limitations/exemptions under patent law. CO-5
- b. Explain the process of licensing and transfer of technology with Indian case studies. CO-5
- c. Write a note on new developments in IPR related to biological systems and software patents. CO-5