

DHANAMANJURI UNIVERSITY

Examination- 2025 (December)

Name of Programme : B.A/B.Sc. Mathematics

Semester : 7th

Paper Type : DSE

Paper Code : EMA-004

Paper Title : Research Methodology

Full Marks : 60

Pass Marks : 24

Duration: 3 Hours

The figures in the margin indicate full marks for the corresponding questions.

1. Answer any 2 (two) of the following questions: $10 \times 2 = 20$
 - a) Define knowledge. Describe perception, reasoning, intuition and testimony.
 - b) Explain scientific research. Discuss its scope, objectives and characteristics.
 - c) What is mathematical research? Explain the steps involved in mathematical research with special reference to identifying a research topic and conducting a literature survey.
2. Answer any 2 (two) of the following questions: $10 \times 2 = 20$
 - a) Explain the methods and techniques for writing a good mathematical solutions and proofs.
 - b) Describe the structure and format of a mathematical research article? Explain the main components and their importance.
 - c) Discuss the common errors in mathematical writing and explain effective strategies for avoiding these errors.
3. Answer any 2 (two) of the following questions: $10 \times 2 = 20$
 - a) Discuss the role of web resources MAA, AMS, SIAM, arXiv and Research Gate.

- b) Explain Journal metrics. Discuss the major indicators Impact factor, MCQ, SNIP, SJR to evaluate the quality and impact of academic journals.
- c) Explain Research ethics. Discuss plagiarism, its types, the importance of plagiarism awareness and tools used to detect plagiarism.
