



LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – MATHEMATICS

SECOND SEMESTER – APRIL 2025

PMT2MC05 – RESEARCH METHODOLOGY



Date: 09-05-2025

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A – K1 (CO1)

	Answer ALL the questions	(5 x 1 = 5)
1	Answer the following	
a)	Describe the meaning of research according to Clifford Woody.	
b)	What do you mean by research design?	
c)	Write the difference between qualitative and quantitative attributes in research methodology.	
d)	Describe how to prepare the “Title page” of a research article.	
e)	List any two ways in which authors share their published articles.	

SECTION A – K2 (CO1)

	Answer ALL the questions	(5 x 1 = 5)
2	MCQ	
a)	Which of the following is the first step in the research process? (i) Data collection (ii) Formulating a research problem (iii) Literature review (iv) Report writing	
b)	Which of the following is a primary data collection method? (i) Journals and books (ii) Government reports (iii) Surveys and interviews (iv) Literature reviews	
c)	Plagiarism refers to: (i) Using someone else’s ideas or words without proper attribution (ii) Citing a source correctly (iii) Publishing your own work twice (iv) Conducting a literature review	
d)	Which section of a research article provides a summary of the entire paper? (i) Introduction (ii) Abstract (iii) Discussion (iv) Conclusion	
e)	Which of the following requires permission for use in a research article? (i) Public domain images (ii) Government-published data (in most countries) (iii) Figures from a previously published journal article (iv) Self-written tables based on original research	

SECTION B – K3 (CO2)**Answer any THREE of the following****(3 x 10 = 30)**

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|---|---|
| 3 | Outline the various steps that are used in the research process. |
| 4 | Explain any two-research design in detail. |
| 5 | Discuss any two research websites and their importance in detail. |
| 6 | Explain different types of research misconduct in detail. |
| 7 | Describe the best approaches for interacting with editors during the review process of publishing a research article. |

SECTION C – K4 (CO3)**Answer any TWO of the following****(2 x 12.5 = 25)**

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| 8 | Differentiate between research methods and research methodology. |
| 9 | Explain the important concepts related to research design. |
| 10 | Explain an author's permissions and rights regarding the publication of their research study. |
| 11 | Summarize the steps used for writing a literature review. |

SECTION D – K5 (CO4)**Answer any ONE of the following****(1 x 15 = 15)**

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|----|---|
| 12 | Differentiate the following types of research: (i) Descriptive vs. Analytical (ii) Applied vs. Fundamental (iii) Quantitative vs. Qualitative and (iv) Conceptual vs. Empirical |
| 13 | Construct a title for your own research topic and write at least 250 words for the abstract. To prevent plagiarism, rewrite it with the help of a sample similarity report. |

SECTION E – K6 (CO5)**Answer any ONE of the following****(1 x 20 = 20)**

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| 14 | Design a questionnaire with at least ten questions on the topic “Study Habits and Their Impact on Academic Performance Among Postgraduate Mathematics Students”. Further, interpret your survey using a sample result. |
| 15 | Select a research problem in the field of applied mathematics and write sample research on it. |

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