

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**M.Sc. DEGREE EXAMINATION – MATHEMATICS****SECOND SEMESTER – APRIL 2023****PMT2MC05 – RESEARCH METHODOLOGY**

Date: 10-05-2023

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) Tell any two significances of research.
- b) Recall the concept of pilot survey.
- c) List down the different research designs.
- d) Describe the control group in research design.
- e) List down the various types of research misconduct.

SECTION A – K2 (CO1)**Answer ALL the questions****(5 x 1 = 5)****2. Choose the correct answer for the following**

- a) Identify, who can successfully conduct research?
- (i) Someone who is a hard worker
 - (ii) Possesses post-graduation degree
 - (iii) Has studied research methodology
 - (iv) Possesses thinking and reasoning ability
- b) Preparing wrong questionnaire is an example of _____
- (i) Primary data collection problem
 - (ii) Secondary collection problem
 - (iii) Both (i) and (ii)
 - (iv) None of the above
- c) The main characteristic of scientific research is:
- (i) Empirical (ii) Theoretical (iii) Experimental (iv) all of the above
- d) In order to pursue the research, which of the following is priorly required?
- (i) Developing a research design
 - (ii) Formulating a research question
 - (iii) Deciding about the data analysis procedure
 - (iv) Formulating a research hypothesis
- e) The purpose of research is to:
- (i) Review or synthesize existing knowledge
 - (ii) Investigate existing situations or problems
 - (iii) Provide solutions to problems
 - (iv) All the above

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

- 3.** Give your understanding of a good research design. Further, through an illustration show that single research design is not suitable for all research studies.

4.	Choose any three types of basic research and explain them.
5.	Explain how to deal with editors in the review process of publishing a research article.
6.	Explain research design in case of hypothesis-testing research studies with suitable examples.
7.	Discuss the falsification, fabrication, research and scientific misconducts in detail.

SECTION C – K4 (CO3)

	Answer any TWO of the following (2 x 12.5 = 25)
8.	Distinguish between Research methods and Research methodology.
9.	Explain the meaning and significance of a Research design.
10.	Explain the five main sections of a project in detail.
11.	Explain the following sections in the layout of a research paper. <ul style="list-style-type: none"> (i) Title page (ii) Abstract (iii) Discussions (iv) Acknowledgement

SECTION D – K5 (CO4)

	Answer any ONE of the following (1 x 15 = 15)
12.	Explain the meaning of the following in context of Research design with suitable examples: <ul style="list-style-type: none"> (i) Extraneous variables (ii) Confounded relationship (iii) Research hypothesis (iv) Experimental and Control groups (v) Treatments
13.	Choose a theme for your own project and write at least 250 words in the introduction section for the project. Further, 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)
14.	Select a current social issue, and then create a questionnaire with at least 10 questions on it. In addition, analyse your survey results using a sample result.
15.	Write a sample research article in the area of fuzzy logic or graph labelling.

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