



LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2025



PBT2MC04 – RESEARCH METHODOLOGY AND BIOSTATISTICS

Date: 02-05-2025

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A – K (CO1)

Answer ALL the questions

(5 x 1 = 5)

1 Choose the best option

- a) An act of lying should not be performed even if it has good consequences is an example of
 i) Virtue ethics ii) Good ethics
 iii) Deontological ethics iv) Consequentialism
- b) Any characteristic that differs from individual to individual is called
 i) Trait ii) Gene
 iii) character iv) Variable
- c) Which of the following is not a indexing database
 i) SCIJ ii) Scopus
 iii) SCIE iv) SCI
- d) Th probability scale usuall lies between
 i) 0 to 1 ii) 1- to +1
 iii) 0 to 10 iv) none of the above
- e) _____ is the determination of a statistical relationship between two or more variables
 i) Correlation ii) Regression
 iii) variation iv) skewness

SECTION A – K2 (CO1)

Answer ALL the questions

(5 x 1 = 5)

2 Answer in one or two sentences

- a) Give two examplles of qualitative variables.
- b) Why is open access policy needed?
- c) Define confounding variable?
- d) Differentiate homoscedasticity and heteroscedacity.
- e) What is informed consent?

SECTION B – K3 (CO2)

Answer any THREE of the following

(3 x 10 = 30)

- 3** Write five key points including an example for MLA style reference.
- 4** Comment on any two sampling methods.
- 5** Discuss the steps involved in writing a scientific report.

6	Comment on Wilcoxon signed rank test
7	Write briefly on types of journals and add a note on peer review.
SECTION C – K4 (CO3)	
	Answer any TWO of the following (2 x 12.5 = 25)
8	Evaluate the use of one way and two-way ANOVA.
9	What are the aspects to be covered in case study?
10	Analyze with examples types of biological data
11	What are research gaps and how do you identify them?
SECTION D – K5 (CO4)	
	Answer any ONE of the following (1 x 15 = 15)
12	Review the process of research and its types with examples
13	Comment on principles for conducting ethical research
SECTION E – K6 (CO5)	
	Answer any ONE of the following (1 x 20 = 20)
14	Develop a flowchart for events involved in selection, submission, and publication of a scientific article in a journal.
15	Elaborate on the sampling design and its types.

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