

End Semester Examination (2021-22)-Odd Semester

M.Sc.(Physics) – I Year (I Sem)

Course Name: Research Methods and Ethics

Code: MPH1006

Time: 02 Hours

Max Marks: 60

University Roll No.

(To be filled by the Student)

Note: Please read instructions carefully:

- The question paper has 03 sections and it is compulsory to attempt all sections.*
- All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer type Questions		BL	CLO	Marks (10)
Attempt all the questions.				
1.	Briefly mention aim of science.	[BL2]	CLO1	02
2.	Distinguish Hypothesis from Research Question.	[BL2]	CLO2	02
3.	Explain the term evaluative research.	[BL2]	CLO2	02
4.	Mention different types of experiments.	[BL2]	CLO3	02
5.	Discuss the various types of Hypothesis	[BL2]	CLO2	02
Section B: Short Answer Type Questions		BL	CLO	Marks (30)
Attempt any 03 out of 05 questions.				
1.	Discuss the principle claims that the natural scientist implicitly make	[BL3]	CLO1	10
2.	Explain the difficulty in planning a measurement.	[BL3]	CLO3	10
3.	Discuss the role of reliability and validity in scientific measurement.	[BL4]	CLO3	10
4.	Distinguish between basic and applied research with suitable examples	[BL4]	CLO2	10
5.	Define plagiarism and its side effects on scientific research.	[BL4]	CLO4	10
Section C: Long Answer Type Questions		BL	CLO	Marks (20)
Attempt any 01 out of 04 questions.				
1.	Examine the idea of falsification to distinguish Science and Pseudo Science with suitable examples.	[BL4]	CLO1	20
2.	Discuss the internal and external validity of scientific experiments.	[BL4]	CLO3	20
3.	Elaborate the simplest model indicating important components of research design.	[BL4]	CLO2	20
4.	Discuss ethical practices that a natural scientist has to practice while pursuing research in natural sciences.	[BL4]	CLO4	20