

Reg. No. :

Name :

IV Semester M.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supple./Imp.)

Examination, April 2026
(2023 Admission Onwards)

PHYSICS

MSPHY04C19 : Research Methodology and Scientific Writing

Time : 1½ Hours

Max. Marks : 30

SECTION – A

Answer **any three** questions. **Each** question carries **3** marks.

(3×3=9)

1. Define research and briefly describe main characteristics of scientific research.
2. What is meant by an indexed journal ? Explain the i10-index.
3. Define research hypothesis. Explain the term null hypothesis.
4. What are Intellectual Property Rights (IPR) in scientific research ?
5. Describe tools used for plagiarism checking and their usefulness.

SECTION – B

Answer **any two** questions. **Each** question carries **6** marks.

(2×6=12)

6. Define the scientific method and explain its main characteristics.
7. Explain the basic structure of research journals.
8. Explain the beamer class for presentations in LaTeX.
9. Define journal impact factor and explain its calculation and significance.

P.T.O.

SECTION – C

Answer **any one** question. **Each** question carries **9** marks.,

(1×9=9)

10. Explain the principles and main characteristics of experimental design. Provide a qualitative overview of the different types of experimental designs.
11. Discuss the procedure and significance of a literature review in identifying research gaps. Explain the main components and overall framework of an effective literature review.
12. Explain scientific misconduct and plagiarism and discuss ways and tools to prevent plagiarism in research.