

(6 pages)

Reg. No. :

Code No. : 7401

Sub. Code : ZPHM 43

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Fourth Semester

Physics – Core

RESEARCH METHODOLOGY

(For those who joined in July 2021 & 2022 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Investigation of some natural phenomenon or factors relating to pure science are termed as

- (a) basic research (b) theoretical research
(c) applied research (d) both (a) and (b)

2. All cause non sampling errors except

- (a) Faulty tools of measurement
(b) Defect in data collection
(c) Not response
(d) Inadequate sample

3. Who is regarded the father of scientific social surveys?

- (a) Best (b) Booth
(c) Darwin (d) None of the above

4. The word “examine critically” stands for _____.

- (a) examine various sides of a question
(b) acts as a judge
(c) examine the main points briefly
(d) show by logical argument

5. The first page of the research report is

- (a) Appendix (b) Bibliography
(c) Index (d) Title page

6. An abstract is a
- (a) Synopsis (b) Quotations
(c) Glossary (d) Bibliography
7. The pertaining file extension of a Origin project is _____
- (a) .obj (b) .org
(c) .ori (d) .opj
8. Selecting text means, selecting
- (a) a word (b) an entire sentence
(c) whole document (d) any of the above
9. The control sequence to change the font to bold face is
- (a) \textbf (b) \textbf{ }
(c) /textbf{ } (d) /textbf()
10. The control sequence used to produce LATEX logo is _____
- (a) /Latex/ (b) \LaTeX\
(c) /LaTeX/ (d) \Latex\

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List out the objectives and motivation for doing research.

Or

- (b) What does make people to do Research?

12. (a) Write a short note on the need for research design.

Or

- (b) Explain the basic principles of experimental designs.

13. (a) Explain the need of research report.

Or

- (b) Explain the page and chapter format in research report.

14. (a) Explain the creating multiple layer graphs in origin software.

Or

- (b) Write short note opening an Excel workbook in Origin.

15. (a) Elaborate the syntax for producing the fractions and roots in LATEX with example.

Or

- (b) Explain characters and control sequence in LaTeX.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the technique involved in defining a research problem.

Or

- (b) Explain the various types of research in research methodology.

17. (a) Explain the important concepts relating to research design.

Or

- (b) Illustrate the characteristics of a good experimental method.

18. (a) Illustrate with example the preparation of table of contents of a report.

Or

- (b) Explain the general format and layout for writing the report.

19. (a) Explain the following:

- (i) Creating multiple layer graphs in origin
- (ii) Transforming column values

Or

- (b) Discuss in brief the customizing of a graph in Origin.

20. (a) Discuss in detail the commands for changing fonts in text modes with suitable examples.

Or

- (b) Explain the producing simple documents using LaTeX.