

(6 pages)

Reg. No. :

Code No. : 6410

Sub. Code : ZCHM 34

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Chemistry — Core

SCIENTIFIC RESEARCH METHODOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the main aim of interdisciplinary research?
 - (a) To over simplify the problem of research
 - (b) To bring out the holistic approach to research
 - (c) To create a new trend in research methodology
 - (d) To reduce the emphasis on a single subject in the research domain

2. The main aim of the scientific method in the research field is to _____
 - (a) Improve data interpretation
 - (b) Confirm triangulation
 - (c) Introduce new variables
 - (d) Eliminate spurious relations
3. Literature is a
 - (a) Written record
 - (b) Published record
 - (c) Unpublished record
 - (d) All of these
4. World of learning is a what source of information
 - (a) Primary source
 - (b) Documentary source
 - (c) Secondary source
 - (d) Tertiary source
5. The first page of the research report is
 - (a) appendix
 - (b) bibliography
 - (c) index
 - (d) title page
6. The last page of the research report is
 - (a) appendix
 - (b) bibliography
 - (c) index
 - (d) title page

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7. The act of presenting someone else's work or idea as own is considered as
- (a) Plagiarism
 - (b) Academic dishonesty
 - (c) Wrongful appropriation
 - (d) All of these
8. Plagiarism where the writer changes a few words in the original text of another is known as
- (a) Direct copying
 - (b) Word switch
 - (c) Paraphrasing
 - (d) None of these
9. The X-ray region stands between ultraviolet and _____ ray regions.
- (a) Gamma
 - (b) Alpha
 - (c) Beta
 - (d) UV
10. The AFM tip is typically made of _____
- (a) silicon or silicon nitride
 - (b) diamond
 - (c) silver
 - (d) graphite

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the objectives of a research?
- Or
- (b) What are the criteria of a good research?
12. (a) Write abbreviations of some journals.
- Or
- (b) Write notes on chemical abstracts.
13. (a) Explain the types of references.
- Or
- (b) What are the ways of communicating research papers?
14. (a) What is plagiarism?
- Or
- (b) What is intellectual property right?
15. (a) Explain the principle, instrumentation and applications of AFM.
- Or
- (b) Elucidate the principle, instrumentation and applications of scanning electron microscopy.



PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the problems encountered by researchers in India.

Or

- (b) Explain funding agencies in India to carryout research.

17. (a) Elucidate literature survey as sources of information.

Or

- (b) Explain the significance of SCOPUS.

18. (a) Explicate format of a research report.

Or

- (b) Discuss the structure of a research paper.

19. (a) Explain IPR and LICENSING.

Or

- (b) Elucidate techniques used to avoid plagiarism.

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20. (a) Explain the principle, instrumentation and applications of X-ray photoelectron spectroscopy.

Or

- (b) Enlighten the principle, instrumentation and applications of transmission electron microscopy.

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