



QP CODE: 24803749



24803749

Reg No :

Name :

INTEGRATED MSC DEGREE EXAMINATION, JUNE 2024

Second Semester

INTEGRATED MSC BASIC SCIENCE-CHEMISTRY

CORE - ICH2CR02 - ELEMENTARY TO RESEARCH IN CHEMISTRY - II

2020 Admission Onwards

ECF6417A

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

Answer any **eight** questions.

Weight **1** each.

1. Discuss the different feedstock options for biodiesel production.
2. Discuss the uses of bioreactors.
3. Discuss the necessity of units and dimensions in scientific measurements and calculations.
4. Compare correlation and casuality.
5. Calculate mean and mode for the two sets of data Set A contains numbers 2,2,3,5,5,7,8 and set B contains the numbers 2,3,3,4,6,7.
6. Explain how graphical representations can enhance the understanding and interpretation of research data
7. How can researchers optimize their search strategies and effectively utilize search engines or databases to find relevant and reliable information?
8. Explain the advantages and limitations of the impact factor as a measure of journal quality and research impact.
9. Explain the concept of patents and their role in promoting innovation and technological progress.
10. Define plagiarism in the context of academic and research writing.

(8×1=8 weightage)

Part B (Short Essay/Problems)

Answer any **six** questions.

Weight **2** each.

11. Explore the emerging trends and developments in nanochemistry research, such as nanomedicine, nanosensors, nanocatalysis, and nanoelectronics.





12. Good precision does not assure good accuracy. Comment
13. Discuss the advantages and limitations of using models in research.
14. How are errors classified? What are the different techniques used for the minimization of errors?
15. Suggest some of the best practices for incorporating figures and tables into a research paper in a peer reviewed journal.
16. What is the coverage and scope of Scopus? Which disciplines or subject areas does it cover? Can researchers access full-text articles through Scopus, or does it primarily provide abstracts and citation information?
17. Explain the concept of SNIP (Source-Normalized Impact per Paper) and how it differs from other traditional bibliometric indicators, such as the impact factor?
18. Discuss the importance of ethical considerations in scientific research.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Discuss the role of solar cells in various fields like transportation, power generation, electronics etc.
20. Discuss how to prepare a paper to publish in Indian Journal of Chemistry- Section A.
21. Explain the role and significance of NPTEL (National Programme on Technology Enhanced Learning) and INFLIBNET in enhancing the quality of engineering and science education in India. Discuss its key features and how it benefits students and faculty members across the country.
22. Analyze the various types of cybercrimes and discuss the impact of cybercrimes on individuals and society.

(2×5=10 weightage)

