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Reg. No. : .....

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TRIVANDRUM

Second Semester B.Sc. Degree Examination, December 2021

First Degree Programme under CBCSS

Chemistry

Foundation Course

CH 1221 : METHODOLOGY AND PERSPECTIVES OF SCIENCES AND GENERAL INFORMATICS

(2017-2019 Admission)

Time : 3 Hours Max. Marks : 80

PART – A

Answer **all** questions. Answer in **one** word to maximum of **two** sentences Each question carries **1** mark.

1. Who proposed the first atomic theory of matters?
2. State the Mendeleev's periodic law
3. What is hypothesis?
4. Who are the winners of Nobel Prize for chemistry in 2021?
5. What are variables in an experiment?
6. What is meant by IPR?

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7. Define Rf value in chromatography.

8. Which indicator is used in the titration of weak acid and strong base? Methyl orange.

9. How will you precipitate nickel gravimetrically?

10. Name any two flammable solvents used in the research labs.

(10 × 1 = 10 Marks)

PART – B

Short answer type. Answer **any eight** questions from the following. Each question carries **2** marks.

11. What is a simulation in Chemistry?

12. Mention the important contributions of Friedrich Wohler in chemistry?

13. What was the main aim of alchemists?

14. Give any two examples of file formats.

15. What is mean value? Explain with one example.

16. Name any two chemistry journals.

17. What are the important applications of cheminformatics?

18. Explain the principle of precipitation titration with an example.

19. What are metallochromic indicators? Give one example.

20. What are the common stationary phases in chromatography?

21. Explain the basic principle of gravimetric analysis.

22. Expand MSDS. What is MSDS used for?

(8 × 2 = 16 Marks)

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PART – C

Short essay type. Answer **any six** questions from the following. Each question carries **4** marks.

23. Write short note on ion exchange chromatography.
24. Discuss the basic principle of complexometric titrations.
25. Explain co-precipitation and post-precipitation in gravimetric analysis.
26. What are the applications of INFLIBNET and NPTEL?
27. Differentiate accuracy and precision.
28. What is meant by standard deviation?
29. Describe Bohr's model of the atom.
30. What are important types of data in research?
31. Write short note on the first aid measures for electrical shock and chemical splashes to skin and eyes.

(6 × 4 = 24 Marks)

PART – D

Answer **any two** questions. Each question carries **15** marks.

32. Discuss the applications of common ion effect and solubility product principle in the analysis of cations with examples.
33. Write an essay on the various steps involved in a science project.
34. Write short notes on
    (a) Copy rights and patents
    (b) Contributions of Michael Faraday and Marie Curie to the modern Chemistry.
35. Explain the mechanism of gravimetric precipitate formation and discuss the factors which control the particle size of a precipitate.

(2 × 15 = 30 Marks)

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