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Reg. No. : .....

Name : .....

First Semester B.Sc. Degree Examination, JUNE 2022

First Degree Programme under CBCSS

Chemistry

Core Course I

CH 1141 : INORGANIC CHEMISRY – I

(2017 – 2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Each question carries 1 mark.

1. Why alkaline earth metals are strong reducing agents?
2. What is the principal use of heavy water?
3. What is reverse osmosis?
4. What is levelling effect?
5. Define an orbital.
6. Give any three examples of water pollutants.
7. What is meant by nascent hydrogen?
8. What is meant by diagonal relationship?

P.T.O.

9. Write de Broglies equation and explain the terms in it.

10. Give any one synthetic use of liquid SO_2.

(10 × 1 = 10 Marks)

SECTION – B

Short answer type.

Answer **any eight** questions. Each question carries 2 marks.

11. Except for beryllium dipositive ions are formed readily for alkaline earth metals. Explain why?

12. Write a short note on the anomalous electronic configuration of Cr.

13. How do you define an acid in terms of Lowry-Bronsted concept and Lewis concepts?

14. State the difference between ortho and para hydrogen.

15. Write any two important use of alkaline earth metals.

16. State and explain Paulis exclusion principle.

17. Explain the behaviour of sulphuric acid and nitric acid in liquid HF.

18. Why colours imparted by barium and calcium to the Bunsen flame are different?

19. Distinguish between protonic solvents and aprotic solvents.Give examples for each category.

20. What is a covalent hydride ? Give any two examples.

21. What is the significance of Ψ and Ψ^2?

22. Explain different types of hydrogen bonding.

(8 × 2 = 16 Marks)

SECTION – C

Short Essay.

Answer **any six** questions. Each question carries 4 marks.

23. What are quantum numbers? How are they related to each other?

24. What do you understand by Hard and soft water? Explain any two methods of softening of water.

25. Briefly discuss the cause and impact of acid rain on environment.

26. Why the solubility of hydroxides of alkaline earth metals increases while that of sulphates decreases on moving down the group.

27. Write a short note on solutions of alkali metals in liquid ammonia.

28. Illustrate HSAB principle.

29. What is meant by green house effect? What are its consequences?

30. Distinguish between classical smog and photochemical fog.

31. What is electro negativity? Discuss Allred Rochow and Paulings concept of electronegativity calculation.

(6 × 4 = 24 Marks)

SECTION – D

Long Essay.

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

32. What are the main causes of soil pollution? Illustrate each one and give various control measures.

33. Briefly discuss Bohr model of atom and illustrate its merits and demerits in establishing the structure of atom.

34. (a) What are the constituents of cement? How it is manufactured? Write a short note on setting of cement.

(b) Give any three methods for the industrial waste water treatment.

35. Briefly discuss the resemblance of hydrogen with alkali metals and halogen.

(2 × 15 = 30 Marks)
