

D 90127

Chemistry

(Pages : 2)

Name.....

Reg. No.....

FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS—UG)

Chemistry

CHE 5B 06—INORGANIC CHEMISTRY—III

Time : Three Hours

Maximum : 80 Marks

Section A (One Word)

Answer all questions.

Each question carries 1 mark.

1. In inorganic qualitative analysis, group III cations are precipitated as their _____.
2. The precipitation of an ionic substance occurs when its ionic product _____ its solubility product.
3. Hybridization of carbon in diamond is _____.
4. Write the order of density of alkali metals.
5. An aprotic nonaqueous solvent is _____.
6. Ozone hole was first noticed in 1979 in _____.
7. Rain made acidic by oxides of nitrogen and sulphur is called _____.
8. _____ is an example of pseudohalogen.
9. Hybridization of iodine in IF_5 is _____.
10. Among the hydrides of nitrogen highest bond angle is shown by _____.

(10 × 1 = 10 marks)

Section B (Short Answer)

Answer at least five questions.

Each question carries 4 marks.

All questions can be attended.

Overall Ceiling 20.

11. Name the second group cations. How are they precipitated ?
12. Explain term accuracy with regard to analytical results.
13. Comment about the hydration of alkali metals.
14. What are ortho and para hydrogens ?
15. Write autoionisation of SO_2 .
16. Alkali metals in liquid ammonia are coloured. Why ?
17. Discuss the structure of $(SN)_x$.

Turn over

18. What are phosphazenes ?
19. Write two control measures for water pollution.
20. What are different types of E-wastes ?
21. Arrange HClO , HClO_2 , HClO_3 and HClO_4 in the increasing order of acidic strength. Give reason for your answer.

(5 × 4 = 20 marks)

Section C (Paragraph)

*Answer at least four questions.
Each question carries 7.5 marks.
All questions can be attended.
Overall Ceiling 30.*

22. A solution contains Cu^{2+} and Ba^{2+} ions. How would you separate the ions and identify them ?
23. Explain term microanalysis with suitable example and mention the advantages.
24. Discuss the position of hydrogen in periodic table.
25. Discuss briefly preparation properties and structure of AlCl_3 .
26. Discuss general characteristics of ionizing solvent.
27. How are silicones prepared ? Discuss structure and uses.
28. Write note on pollution control board, their duties and responsibilities.
29. Discuss challenges in managing solid wastes.
30. Explain charcoal adsorption method for separation of noble gases.

(4 × 7.5 = 30 marks)

Section D (Essay)

*Answer any two questions.
Each question carries 10 marks.*

31. Define with example : (a) Inert pair effect (b) Diagonal relationship (c) Catenation (d) Lewis acidity of boron halides (e) Ionization energy of Boron family.
32. Write note on liquid ammonia as non-aqueous solvent.
33. Write notes on : (a) Industrial effluents (b) Agriculture discharge (c) Quality of drinking water (d) Eutrophication.
34. (a) Give the preparation properties and structure of oxides and oxyhalides of xenon.
(b) What are interhalogen compounds ? How are they obtained ? Give a note on their properties and structure.

(2 × 10 = 20 marks)