

18U511

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Name:

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

CC15U CHE5 B06 - INORGANIC CHEMISTRY - III

(Chemistry - Core Course)

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

Section A

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

1. The addition of NH_4Cl suppresses the dissociation of NH_4OH . This phenomenon is called -----
2. Plaster of Paris has the formula -----
3. The alkali metal which forms only its monoxide is -----
4. The state of hybridisation of Xe in XeO_4 is -----
5. The ----- properties of Se are responsible for its role in xerography.
6. Island structures possess ----- structural units.
7. What is meant by levelling effect?
8. Name a greenhouse gas.
9. Minamata disease was caused by -----
10. The major culprits responsible for stratospheric ozone layer depletion are -----

(10 × 1 = 10 Marks)

Section B

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

11. Give the structural aspects of silicones.
12. What are protic and aprotic solvents? Give examples.
13. What is smog?
14. Explain eutrophication.
15. Explain vermicomposting.
16. Suggest two common methodology of e-waste disposal.
17. Define solubility product. Give one example.
18. How does oxalate interfere in cation analysis?
19. Give a brief note on sampling.
20. What is the difference between ortho hydrogen and para hydrogen?

21. What is meant by inert pair effect?
22. Con.H₂SO₄ is a strong dehydrating agent. Explain why?

(10 × 2 = 20 Marks)

Section C

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

23. Illustrate the complex formation reaction taking place in liq. NH₃ and liq. SO₂
24. Write a note on ozone layer depletion.
25. What is acid rain? What are its adverse effects?
26. What are biodegradable wastes? What are their main characteristics?
27. What are the advantages of micro scale experiments in organic and inorganic qualitative analysis?
28. Explain the structure of diborane.
29. Write a short note on Fullerenes.
30. Explain the Ostwald's process for the manufacture of nitric acid.

(5 × 6 = 30 Marks)

Section D

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

31. Discuss the preparation, structure and applications of polymeric sulphur nitride.
32. a) Illustrate water quality parameters such as DO, BOD, COD (6 marks)
b) Write a short note on quality of drinking water with special reference to the Indian standards and the WHO standards. (4 marks)
33. Discuss co-precipitation and post precipitation. How it can be eliminated in gravimetric methods.
34. a) Discuss the structure of XeF₆ molecule. (6 marks)
b) Explain the action of water on XeF₆ (4 marks)

(2 × 10 = 20 Marks)
