



K25U 2317

Reg. No. :

Name :

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E.-Regular/Supplementary/
Improvement) Examination, November 2025

(2019 to 2023 Admissions)

CORE COURSE IN CHEMISTRY/POLYMER CHEMISTRY

5B07CHE/PCH : Analytical and Inorganic Chemistry – II

Time : 3 Hours

Max. Marks : 40

SECTION – A

Answer all questions. Each question carries 1 mark.

1. Name the reagent used for the gravimetric estimation of Fe.
2. How are exothermic and endothermic reactions detected in DTA ?
3. Give examples of two common nonferrous alloys.
4. Mention any two environmental factors that can cause corrosion. (4×1=4)

SECTION – B

Answer any 7 questions. Each question carries 2 marks.

5. What is the principle of solvent extraction ? Explain.
6. Briefly describe the principles of paper chromatography.
7. How does DTA differ from TGA ?
8. What is a thermometric titration ?
9. Compare the reactivity of borazine with respect to benzene. Justify your answer.
10. Discuss how noble gases can be trapped within clathrates.
11. Why xenon form stable compounds with other elements under normal conditions ? Explain.

P.T.O.

K25U 2317



12. Briefly describe hydrometallurgy.
13. Mention the advantages of powder metallurgy.
14. How does the pH of the environment affect the corrosion process ? Explain. (7×2=14)

SECTION – C

Answer any 4 questions. Each question carries 3 marks.

15. Explain the unique properties of fluorocarbons.
16. What are the oxidation states of xenon in XeO_2F_2 , XeOF_2 and XeOF_4 ?
17. Define electrometallurgy and explain its key principles.
18. What are the different methods used for concentrating ores ?
19. Explain electrochemical theory of corrosion.
20. Describe concentration cell corrosion with an example. (4×3=12)

SECTION – D

Answer any 2 questions. Each question carries 5 marks.

21. Discuss about thin layer chromatography.
22. Describe the instrumentation and working principle of a DTA.
23. Discuss the oxidation states, basicity, acid strength and stability of different oxoacids of chlorine.
24. Describe the molecular geometry of XeF_2 , XeF_4 , and XeF_6 . Explain the hybridization of xenon in each compound and how it determines its shape. (2×5=10)