

B.Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2020**SEMESTER – 6: CHEMISTRY (CORE COURSE)****COURSE: U6CRCHE9 –: APPLIED INORGANIC CHEMISTRY***(For Supplementary - 2014 Admission)*

Time: Three Hours

Max. Marks: 60

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

1. Give a reaction to confirm Co^{2+} .
2. Zirconium-Alizarin lake spot test is used for the detection of -----
3. *p*-amino-N, N-dimethylaniline spot test is used for the detection of -----
4. What are silicones?
5. Give an example of a polar aprotic solvent.
6. Plutonium decays with a half-life of 24000 years. If plutonium is stored for 72000 years, the fraction of it that remains is -----
7. Give an example of an amphoteric solvent.
8. What is calgon? (1 × 8 = 8)

SECTION B**Answer any six questions. Each question carries 2 marks**

9. What is solubility product?
10. What is standard electrode potential? What is its significance in metallurgy
11. What are zeolites?
12. What are the characteristics of liquid HF which limits its use as a solvent?
13. Give the structure of Borazine
14. What are refractory materials? Give one example.
15. Define glass transition temperature.
16. What are chalcogenic glasses? (2 × 6 = 12)

SECTION C**Answer any four questions. Each question carries 5 marks**

17. Give the structure of oxides and oxy acids of chlorine
18. Discuss important aspects of Paper Chromatography
19. Distinguish between DSC and DTA
20. Write briefly on silicates.
21. Explain zone refining.
22. Give the structure of XeF_4 , XeOF_4 , XeO_3 and XeO_2F_2 (5 × 4 = 20)

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

23. Discuss briefly on Gas chromatographic principle, experimental technique and applications.
24. Discuss in detail about different methodologies adopted for the synthesis of nanomaterials.
25. Explain the preparation, properties and bonding in diborane.
26. Discuss the procedural techniques involved and applications of column chromatography and TLC.

(10 × 2 = 20)
