

**B.SC DEGREE END SEMESTER EXAMINATION MARCH 2017****SEMESTER - 6: CHEMISTRY (CORE COURSE)****COURSE: U6CRCHE9 -: APPLIED INORGANIC CHEMISTRY***(For Regular - 2014 Admission)*

Time: Three Hours

Max. Marks: 60

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

1. Give a reaction to confirm  $\text{Co}^{2+}$ .
2. Plutonium decays with a half-life of 24000 years. If plutonium is stored for 72000 years, the fraction of it that remains is -----
3. Zirconium-Alizarin lake spot test is used for the detection of -----
4. Give the name of an important ore of Uranium.
5. What is zone refining?
6. Give an example of an amphoteric solvent.
7. Give an example of an interhalogen.
8. What is Caro's acid? (1 × 8 = 8)

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

9. How will you eliminate oxalate during qualitative analysis of an inorganic mixture? Give equation.
10. What is standard electrode potential? What is its significance in metallurgy
11. What are silicones?
12. What are the characteristics of liquid HF which limits its use as a solvent?
13. What are refractory materials? Give one example.
14. What are chalcogenic glasses?
15. Give the reason for the colour of liquid ammonia solutions of alkali metals.
16. Give the structure of Borazine (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. What are fullerenes?
19. Discuss important aspects of Paper Chromatography
20. Write briefly on silicates.
21. Distinguish between organic and inorganic polymers.
22. Give the structure of  $\text{XeF}_4$ ,  $\text{XeOF}_4$ ,  $\text{XeO}_3$  and  $\text{XeO}_2\text{F}_2$  (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. Write short note on refining of metals using different methods (10 × 2 = 20)

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