

B.Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2021**SEMESTER –6: CHEMISTRY (CORE COURSE)****COURSE: 15U6CRCHE09: INORGANIC CHEMISTRY – II**

(Common for Regular 2018 Admission & Improvement 2017/Supplementary 2017/2016/2015 Admissions)

Time: Three Hours

Max Marks: 60

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

1. Name the ore of uranium.
2. Write an example for transition metal clusters.
3. What are polyphosphazenes?
4. Show the self ionization pattern of liquid SO_2 .
5. Crown ether is cryptand. Justify the statement.
6. What are Zintl ions?
7. Give an example for n-type semiconductor.
8. What is the normal value of BOD in drinking water? (1 × 8 = 8)

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

9. Explain the chemistry behind Thermite Process.
10. What is zone refining?
11. Draw the structure of (a) $\text{Mo}(\text{CO})_6$ and (b) $\text{Fe}(\text{CO})_5$
12. What do you mean by glass transition temperature?
13. Why does NH_4Cl behave as an acid in liquid ammonia?
14. Give the structure of any two oxoacids of chlorine.
15. Give the structure of any two oxofluorides of xenon.
16. Explain the origin of hardness in water. (2 × 6 = 12)

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

17. Describe the application of Ellingham diagrams in extractive metallurgy.
18. Describe the structure and bonding in $\text{Re}_2\text{Cl}_8^{2-}$.
19. What are chalcogenide glasses? Explain its preparation, properties and uses.
20. Write a note on acid base behaviour in liquid HF.
21. Describe various water quality parameters.
22. Explain the use of limiting radius ratio in the structural determination of ionic crystals. (5 × 4 = 20)

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

23. Explain the general methods employed for the extraction of metals from its ore.
24. What are silicones? Explain its preparation, structure, properties and uses.
25. Write notes on (a) bonding in diborane, (b) interhalogen compounds.
26. Describe various interstitial sites in crystal close packing. Illustrate with suitable examples. (10 × 2 = 20)