FIRST REVISION TEST - 2025

Standard XII

Reg No. | | | | | | |

CHEMISTRY

Time : 3.00 hrs | *Marks : 70*

Part – I

15 x 1 = 15

I. **Choose the correct answer:**

1. Among the following, which metal ore undergo self–reduction?
   a) Mercury b) Gold c) Silver d) Copper
2. Which of the following is not sp^2 hybridised?
   a) Fullerene b) Graphite c) Diamond d) Graphene
3. A element belongs group 15 and 3rd period of the periodic table. Its electronic configuration would be
   a) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^2$ b) $1s^2\ 2s^2\ 2p^4$ c) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$ d) $1s^2\ 2s^2\ 2p^3$
4. Which of the following compounds is colourless?
   a) Fe^{3+} b) Ti^{4+} c) Co^{2+} d) Ni^{2+}
5. Which type of isomerism is exhibited by $[\ Pt(NH_3)_2Cl_2\ ]$?
   a) Coordination isomerism b) Linkage isomerism
   c) Optical isomerism d) Geometrical isomerism
6. The ionic radii of A^+ and B^- are 0.98×10^{-10} m and 1.81×10^{-10} m. The coordination Number of each ion in AB is
   a) 8 b) 2 c) 6 d) 4
7. If the initial concentration of the reactant is doubled, the time for half reaction is also double. Then the order of the reaction is
   a) Zero b) One c) Fraction d) None
8. Which of these is not likely to act as Lewis's base?
   a) HPO^{2-}_4 b) HCl c) Br^- d) SO^{2-}_4
9. Which of the following electrolytic solution has the least specific conductance?
   a) 2N b) 0.002N c) 0.02N d) 0.2N
10. Oxidation of glycerol with $FeSO_4$ and H_2O gives
    a) Glycerose b) Oxalic acid c) Formaldehyde d) Glyceric acid
11. Which one of the following is correctly matched?

a) Emulsion	i) Smoke
b) Gel	ii) butter
c) foam	iii) Mist
d) whipped cream	iv) sol

12. Ethanoic acid $\xrightarrow{P/Br_2}$ 2 – bromo ethanoic acid, this reaction is called
    a) Finkelstein reaction b) Haloform reaction
    c) Hell – Volhard – Zelinsky reaction d) None of these
13. IUPAC name of the amine $H_2N\ CH_2\ (CH_2)_4\ CH_2\ NH_2$
    a) Heptane – 1,7 –diamine b) Hexa methylene diamine
    c) Hexane –1,6 – diamine d) Hexane – 1,6 – amine
14. The pyrimidine bases present in DNA are:
    a) Cytosine & Thiamine b) Cytosine & Adenine
    c) Cytosine & Uracil d) Cytosine & Guanine
15. Which one of the following is a bio–degradable polymer?
    a) HDPE b) PVC c) Nylon 6 d) PHBV

Part - II

II. Answer any 6 questions. (Q.No.24 is compulsory) 6 x 2 = 12

16. What is the role of Limestone in the extraction of iron from its oxide Fe_2O_3?
17. Give the uses of Borax
18. Write a note on Fisher tropsch synthesis.
19. Why transition elements forms coordination complex.
20. Sketch the following : (i) BCC (ii) FCC
21. Write any two examples for zero order reaction?
22. State Faraday's Laws of electrolysis.
23. How does di ethyl ether reacts with excess of HI.
24. Rewrite the following in increasing order of boiling point
C_2H_5OH, $(CH_3)_2NH$, $C_2H_5NH_2$

Part - III

III. Answer any 6 questions. (Q.No.33 is compulsory) 6 x 3 = 18

25. How is Titanium refined? Explain.
26. Write the hybridisation and sketch the diagram for the following compounds.
i) XeO_3 ii) $XeOF_4$
27. Write a note on Linkage isomerism.
28. Write the types of molecular solids with examples.
29. What is pseudo first order reaction? Give an example.
30. Explain common ion effect with suitable example.
31. How will you convert cumene into phenol.
32. Differentiate DNA and RNA
33. Find the pH of a buffer solution containing 0.20 mole per litre sodium acetate and 0.18 mole per litre acetic acid. Ka for acetic acid is 1.8×10^{-5}.

Part - IV

IV. Answer all the questions. 5 x 5 = 25

34. a) i) Describe the method for refining of Silver by electrolytic method (3)
ii) What are the limitations of Ellingham Diagram. (2) *(OR)*
b) i) What is ethyl borate test? (2)
ii) Differentiate graphite and diamond. (3)
35. a) i) What are interhalogen compounds? Give examples. (2)
ii) What are the consequences of lanthanoids. (3) *(OR)*
b) i) On the basis of the VB theory find out hybridisation, geometry, magnetism and magnetic moment of the complex [CoF6]3– (5)
36. a) i) Write a note on 1) Schottky defect 2) Frenkel defect (5) *(OR)*
b) i) Derive the integrated rate law for the first order reaction. (3)
ii) Write the solubility product of $Ca_3(PO)_2$. (2)
37. a) i) Derive an expression for Ostwalt dilution law. (5) *(OR)*
b) i) Write a note on electro osmosis. (3)
ii) Write a note on Riemer – Tiemann reaction. (2)
38. a) i) Write the mechanism for Cannizaro reaction (3)
ii) How is nylon 6,6 prepared? (2) *(OR)*
b) i) An organic compound (A) of molecular formula C_2H_4 on reaction with alkaline $KMnO_4$ give (B). (B) on reaction with anhydrous $ZnCl_2$ give compound (C) of molecular formula C_2H_4O. When (B) reacts with Conc. H_2SO_4 gives compound (D) of molecular formula $C_4H_8O_2$. Identify compound A, B, C and D. Explain the reactions. (5)

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