# FIRST REVISION TEST - 2025



## Standard - XII

12.12.24

**Time: 3.00 hrs** **CHEMISTRY** **Marks:70**

## PART - I

**Choose the correct answer.** 15x1=15

1. Wolframite ore is separated from tinstone by the process of
   a) Smelting b) Calcination
   c) Roasting d) Electromagnetic separation
2. Which of the following statements is not correct?
   a) Beryl is a cyclic silicate
   b) $Mg_2SiO_4$ is an orthosilicate
   c) $(SiO_4)^{-4}$ is the basic structural unit of silicates
   d) Feldspar is not aluminosilicate
3. Assertion: Bond dissociation energy of fluorine is greater than chlorine gas.
   Reason : Chlorine has more electronic repulsion than fluorine.
   a) Both assertion and reason are true and reason is the correct explanation of assertion.
   b) Both assertion and reason are true but reason is not the correct explanation of assertion.
   c) Assertion is true but reason is false. d) Both assertion and reason are false
4. A magnetic moment of 1.73BM will be shown by the one of the following.
   a) $TiCl_4$ b) $[CoCl_6]^{4-}$ c) $[Cu(NH_3)_4]^{2+}$ d) $[Ni(CN)_4]^{2-}$
5. Which of the following oxidation states is most common among the lantharnoids?
   a) 4 b) 2 c) 5 d) 3
6. IUPAC name of the complex $K_3[Al(C_2O_4)_3]$ is
   a) potassium trioxalato aluminium (III) b) potassium trioxalato aluminate (II)
   c) potassium trisoxalato aluminate (III) d) potassium trioxalato aluminate (III)
7. The yellow colour of NaCl crystal is due to
   a) Excitation of electrons in F centres
   b) reflection of light from $Cl^-$ ion on the surface
   c) refraction of light from $Na^+$ ion
   d) All of the above
8. If the initial concentration of the reactant is doubled, the time for half reaction is also doubled. Then the order of the reaction is
   a) Zero b) one c) Fraction d) None

9. If the solubility product of lead iodide is $3.2 \times 10^{-8}$, its solubility will be

a) $2 \times 10^{-3}$M b) $4 \times 10^{-4}$M c) $1.6 \times 10^{-5}$M d) $1.8 \times 10^{-5}$M

10.

| Electrolyte | Kcl | $KNO_3$ | Hcl | NaOAc | NaCl |
|---|---|---|---|---|---|
| ^ ($S\ cm^2\ mol^{-1}$) | 149.9 | 145.0 | 426.2 | 91.0 | 126.5 |

Calculate ^°HOAC using appropriate molar conductance of the electrolytes listed above at infinite dilution in water at 25°c.

a) 517.2 b) 552.7 c) 390.7 d) 217.5

11. Which one of the following has the greatest protective power of colloids.

| Colloids | Gold number |
|---|---|
| Gelatin | 0.005-1 |
| Egg Albumin | 0.08-0.10 |
| Gum Arabic | 0.1-0.15 |
| Potato Starch | 25 |

a) Gelatin b) Egg Albumin c) Gum Arabic d) Potato Starch

12. On reacting with neutral ferric chloride, phenol gives.

a) red colour b) violet colour c) dark green colour d) no colouration

13. The reagent used to distinguish between acetaldehyde and benzaldehyde is

a) Tollens reagent b) Fehling's solution
c) 2,4 - dinitrophenyl hydrazine d) semi carbazide

14. Vitamin $B_2$ is also known as

a) Riboflavin b) Thiamine c) Nicotinamide d) Pyridoxine

15. Non stick cook wares generally have a coating of a polymer, whose monomer is

a) ethane b) prop-2-enenitrile
c) chloro ethene d) 1,1,2,2-tetrafluoro ethane

## PART - II

**Answer any 6 questions (Q.No.24 is compulsory)** **6x2=12**

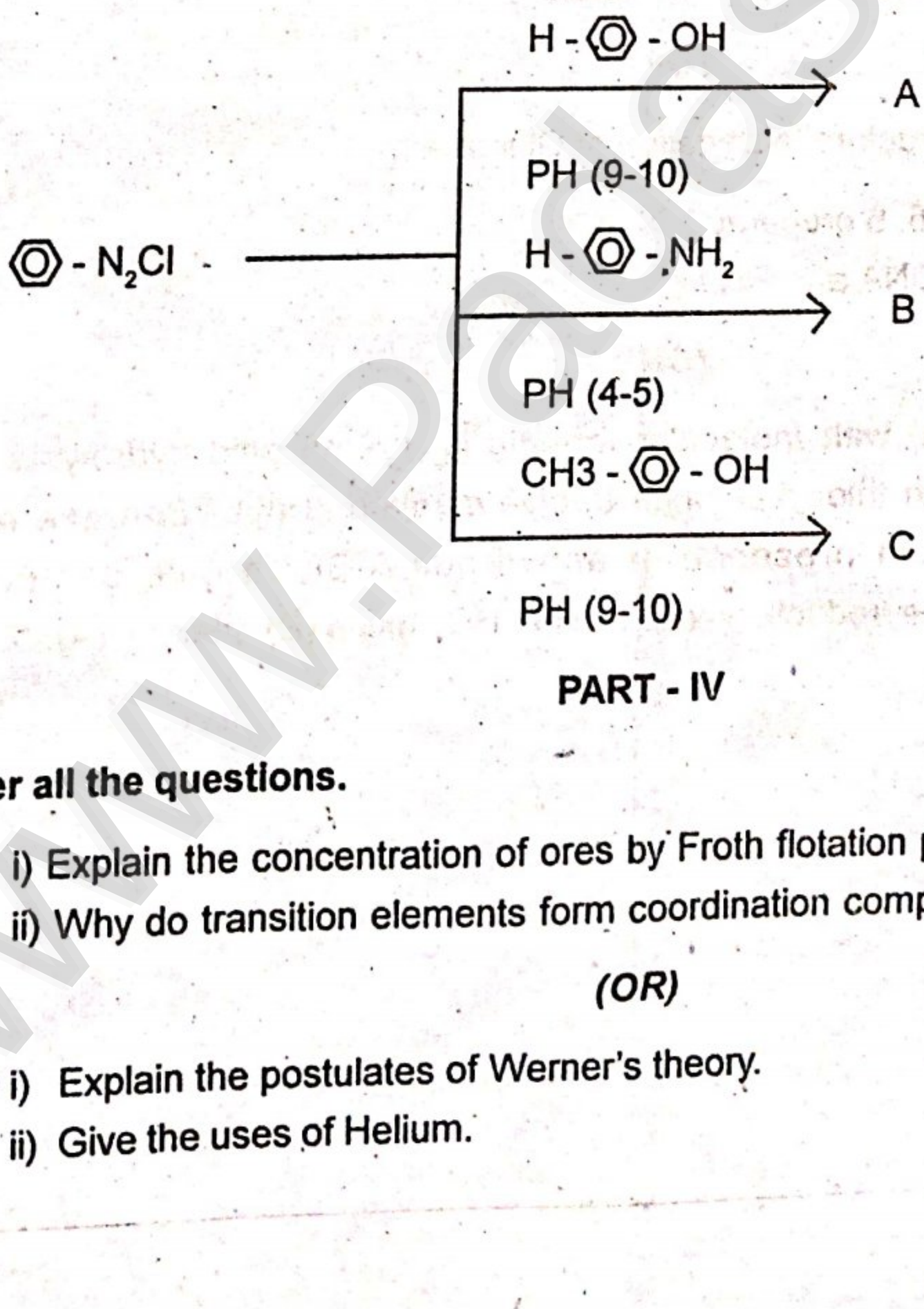
16. What is the role of lime stone in the extraction of iron from its oxide $Fe_2O_3$?
17. What is catenation? Describe briefly the catenation property of carbon.
18. What is linkage isomerism? Explain with an example.
19. Calculate the number of atoms in a fcc unit cell.
20. What happens when a colloidal Sol of $Fe(OH)_3$ and $As_2O_3$ are mixed?
21. How will you prepare Malachite green from benzaldehyde?
22. Write any two uses of formic acid.

23. What are food preservatives? Give an example.
24. The rate constant for a first order reaction is $1.54 \times 10^{-3} s^{-1}$. Calculate its half life time.

## PART - III

**Answer any 6 Questions. (Q.No.33 is compulsory)** 6x3=18

25. Describe the structure of diborane.
26. How will you prepare chlorine by Deacon's process?
27. $[Ti(H_2O)_6]^{3+}$ is coloured, while $[Sc(H_2O)_6]^{3+}$ is colourless - explain.
28. Explain common ion effect with an example.
29. State Faraday's Laws of electrolysis.
30. How will you convert phenol into the following compounds.
    i) picric acid ii) phenalphthalein
31. Write a short note on peptide bond.
32. Write the mechanism of Aldol condensation.
33. Predict the product A, B, C in the following reaction.




## PART - IV

**Answer all the questions.** 5x5=25

34. a) i) Explain the concentration of ores by Froth flotation process (3)
    ii) Why do transition elements form coordination compounds? (2)

*(OR)*

b) i) Explain the postulates of Werner's theory. (3)
    ii) Give the uses of Helium. (2)

35. a) i) Differentiate Lanthanoids and Actinoids. (3)

ii) How will you identify borate radical. (2)

*(OR)*

b) i) Write a note on Schottky defect and Frenkel effect. (3)

ii) Write Arrhenius equation and explain the terms involved. (2)



36. a) i) Derive integrated rate law for a first order reaction A→ product. (3)

ii) Establish a relationship between the solubility product and molar solubility for the following compound $BaSO_4$. (2)

*(OR)*

b) (i) Differentiate physisorption and chemisorption. (3)

(ii) Write a short note on sacrificial protection. (2)

37. a) i) How will you differentiate 1°, 2° and 3° alcohol by Lucas test? (3)

ii) Write a short note on Perkins reaction. (2)

*(OR)*

b) i) Explain the structural elucidation of Glucose. (5)

38. a) i) How is Nylon 6, 6 prepared? (3)

ii) Differentiate DNA and RNA. (2)

*(OR)*

b) A compound (A) with molecular formula $C_2H_3N$ on acid hydrolysis gives (B) which reacts with thionyl chloride to give compound (C). Benzene reacts with compound (C) in presence of anhydrous $AlCl_3$ to give compound (D). Compound (D) on reduction with zn/Hg / HCl gives (E) Identify (A), (B), (C), (D) and (E) (5)

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