Class : 12

Register Number						

SECOND REVISION EXAMINATION - 2025
CHEMISTRY

Time Allowed : 3.00 Hours]

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PART – I

[Max. Marks : 70

Note: (i) Answer all the questions.   15x1=15

(ii) Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer.

1. Extraction of gold and silvar involves leaching with cyanide ion. Silver is later recovered by
   a) Distillation
   b) Zone refining
   c) Displacement with zinc
   d) liquation

2. In diborane the number of electrons that accounts for banana bond
   a) Slx
   b) two
   c) four
   d) three

3. The molarity of given orthophosphoric acid solution is 2M, its normality is
   (a) 6N
   (b) 4N
   (c) 2N
   (d) none of these

4. The catalytic behaviour of transition metals and their compounds is ascribed mainly due to
   a) their magnetic behaviour
   b) their unfilled 'd' orbitals
   c) their ability to adopt variable oxidation states
   d) their chemical reactivity

5. The sum of primary valence and secondary valence of the metal M in the complex $[M(en)_2(ox)]$ cl is
   a) 3
   b) 6
   c) -3
   d) 9

6. **Assertion :** Due to Frenkel defect, density of the crystalline solid decrease
   Reason : In Frenkel defect cation and anion leaves the crystal
   a) Both assertion and reason are true but reason is the correct explanation of assertion.
   b) Both assertion and reason are true but reason is not the correct explantion of assertion.
   c) Assertion is true but reason is false
   d) Both assertion and reason are false.

7. The rate constant of a reaction is 5.8×10^{-2} s^{-1}. The order of the reaction is
   a) First order
   b) Zero order
   c) Second order
   d) Third order

8. How many Faradays of electricity are required for the following reaction of occur
   $$MnO_4^- \rightarrow Mn^{2+}$$
   a) 5F
   b) 3F
   c) 1F
   d) 7F

9. The P^H of 10^{-5} M KOH solution will be
   a) 9
   b) 5
   c) 19
   d) none of these

10. Hair cream is
    a) Gel
    b) emulsion
    c) Solid sol
    d) sol

11. Which of the following compound can be used as antifreeze in automobile radiators?
    a) Methanol
    b) Ethanol
    c) Neopentyl alcohol
    d) Ethane 1,2 - diol

12. The formation of cyanohydrin from autone is an example of
    a) nucleophilic substitution
    b) electrophilic substitution
    c) Electrophilic addition
    d) Nucleophilic addition

13. The product formed by the reaction, an aldehyde with a primary amine
    a) Carboxylic acid
    b) Aromatic acid
    c) Schiff's base
    d) Ketone

14. Vitamin B$_2$ is also known as
    a) Riboflavin
    b) Thiamine
    c) Nicotamide
    d) Pyrodoxine

15. Terylene is an example of
    a) Polyamide   b) Polythene   c) Polyester   d) Polysaccharide

PART - II

II. **Answer any six questions. Question No. 24 is compulsory.**   **6x2=12**

16. What is meany by cementation?
17. Complete the reaction. $P_4 + NaOH + H_2O \longrightarrow$
18. What are interstitial compounds?
19. Give two examples for zero order reaction?
20. Write down the overall cell reaction of lead storage battery.
21. What happens when glycol is distilled with conc H_2SO_4?
22. How is acetone converted into pinnacol?
23. How is Orlon(PAN) prepared?
24. Calculate the number of atoms present per unit cell in FCC?

PART - III

III **Answer any six questions. Question No.33 is compulsory.**   **6x3=18**

25. Explain zone refining process with an example.
26. Explain the structure of phosphine.
27. Calculate the number of unpaired electrons in Mn^{2+} and calculate the spin only magnetic moment.
28. What is metal deficiency defect? Give an example.
29. Write the expression for the solubility product of Ag_2CrO_4.
30. How will you convert glycerol into acrolein?
31. How is malachite green dye prepared?
32. Explain mustard oil reaction?
33. Show that in case if first order reaction, the time required for 99.9% completion is nearly ten times the time required for half completion of the reaction.

PART - IV

IV. **Answer all the questions.** akwaacademy.blogspot.com   **5x5=25**

34. (a) i) Explain gravity separation process.
        ii) Write the uses of Borax.   **(OR)**
    (b) i) Why fluorine is more reactive than other halogens?
        ii) Write the reason for the anomalous bahaviour of nitrogen.
35. (a) Describe the preparation of potassium-di-chromate.   **(OR)**
    (b) (i) In an octahedral crystal field, draw the figure to show splitting of 'd' orbitals.
        (ii) Classify the following ligands based on the number of donor atoms.
            a) NH_3 b) en   c) OX^{2-} d) Pyridine
36. (a) Calculate the percentage efficiency of packing in case of fare centered cubic crystal
                                    (OR)
    (b) Derive Henderson-Hasselbalch equation.
37. (a) (i) Define equivalent conductance.
        (ii) Write a note on Debye-Huckel and Onsagar equation.   **(OR)**
    (b) Describe adsorption theory of catalysis.
38. (a) (i) Explain phthalein reaction.
        (ii) Give the test for carboxylic acid group.   **(OR)**
    (b) i) Explain Sandmeyer reaction.
        ii) Write the structural formula of Aspirin.