Class : 12

Register Number | 1 | 2 | 1 | 2 | 7 |

FIRST REVISION EXAMINATION, JANUARY - 2025

Time Allowed : 3.00 Hours] **CHEMISTRY** [Max. Marks : 70

PART – I

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

1. Extraction of gold and silver involves leaching with Cyanide ion.silver is later recovered by
   a) Distillation b) Zone refining c) Displacement with zinc d) Liquation
2. The Chief ore of Copper is
   a) Copper Glance b) Copper pyrites c) Galena d) Bauxite
3. Which of the Following metals has the largest abundance in the earth crust?
   a) Aluminium b) Calcium c) Magnesium d) Sodium
4. Carcinogenic silicates is
   a) Feldspar b) Zeolite c) Asbestos d) None of these
5. P_4O_6 Reacts with cold water to give ---------
   a) H_3PO_3 b) $H_4P_2O_7$ c) HPO_3 d) H_3PO_4
6. The Catalytic behaviour of transition metal and their compounds is described mainly due to
   a) their magnetic behaviour b) their unifilled d-orbitals
   c) their ability to adopt variable oxidation states d) their chemical reactivity
7. **Assertion** : Monoclinic sulphur is an example of Monoclinic Crystal System.
   Reason : For a monoclinic system $a \neq b \neq c$, and $\alpha = \upsilon = 90°$, $\beta \neq 90°$
   a) Both Assertion and reason are true, but reason is not the correct explanation of Assertion
   b) Both assertion and reason are true, but reason is not correct explanation of Assertion
   c) Assertion is true but Reason is False d) Both assertion and Reason are False
8. An Example of Molecular Crystal is
   a) Nacl b) Sio_2 c) Magnesium d) Naphthalene
9. A Zero order reaction X → product with an initial concentration of 0.02 M has a half life of 10 min. If one starts with concentration 0.04 M then the half life is
   a) 10 s b) 5 min
   c) 20 min d) Cannot be predicted using the Given information
10. Paracetamol has the half life of ---------- within the body.
    a) 12 hours b) 6 hours c) 2.5 hours d) 7.5 hours
11. Dissociation constant of NH_4OH is $1.8x10^{-5}$, the Hydrolysis constant of NH_4Cl would be
    a) $1.8 x10^{-19}$ b) $5.55 x 10^{-10}$ c) $5.55 x10^{-5}$ d) $1.80 x10^{-10}$
12. Carbolic acid
    a) Phenol b) Picric acid c) Benzoic acid d) Phenyl acetic acid
13. Isopropylbenzene on air oxidation in the Presence of dilute acid gives
    a) C_6H_5COOH b) $C_6H_5COCH_3$ c) $C_6H_5COC_6H_5$ d) C_6H_5OH
14. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid?
    a) Phenylmethanal b) Ethanal c) Ethanol d) Methanol
15. In which of the following reaction new carbon - carbon bond is not formed?
    a) Aldol condensation b) Friedel-Crafts reaction
    c) Kolbe's Reaction d) Wolf Keshnev reaction

PART - II

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

16. What is the role of Iodine, in the refining of Zirconium?
17. Give the Uses of Potash alum?
18. Draw the structure of Ozone?

19. Which metal in the 3d series exhibits +1 oxidation state, most frequently and why?
20. Why ionic crystals are hard and Brittle?
21. Give any two differences between lewis acid and Lewis base?
22. Explain Autooxidation of Ethers?
23. Write a note on Rosenmund reduction reaction?
24. A zero order reaction is 20% complete in 20 minutes . Calculate the value of the rate constant . In what time will the reaction be 80% complete ?

PART - III

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

25. Explain the Extraction of Gold by Cyanide leaching?
26. **Complete the following reactions.**
    a) $BF_3 + 9H_2O \longrightarrow$
    b) $H_2B_2O_7 \xrightarrow{\text{Red hot}}$
    c) $B(OH)_3 + NH_3 \longrightarrow$
27. **Define the following terms.** a) Rate b) Rate law
28. Derive Henderson Equation?
29. **Give the Oxidation state of Halogen in the following Reaction?**
    a) OF_2 b) O_2F_2 c) Cl_2O_3 d) I_2O_4
30. What are interstitial compounds? give any two properties of Interstitial compounds?
31. **Starting from Phenol, how will you prepare the following compounds.**
    a) Picric acid b) Anisole
32. Distinguish between hexagonal close packing and Cubic Close packing.
33. Explain the reducing property of Formic acid?

PART - IV

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

34. (a) (i) What is Smelting. (2)
    (ii) Explain Froth flotation process. (3)

    (OR)

    (b) i) Write a note on Hydroboration. (2)
    ii) What are Silicons? Explain the types of Silicons. (3)
35. (a) i) Give the Uses of Sulphuric acid? (2)
    ii) Write about the Bleaching action of Chlorine. (3)

    (OR)

    (b) i) Which is Stronger reducing Agent? Cr^{2+} or Fe^{2+}? (2)
    ii) Justify the position of Lanthanoids and Actinoids in the Periodic Table? (3)
36. (a) Explain Schottky and Frankel defects. (5)

    (OR)

    (b) Describe briefly the collision theory of bimolecular reactions? (5)
37. (a) Derive an expression for the hydrolysis constant and degree of hydrolysis is of salt of strong acid and weak base? (5)

    (OR)

    (b) How will you differentiate primary, secondary and tertiary alcohols by Victor Meyer's method ? (5)
38. (a) **How will you prepare**
    i) Pinacol from Acetone (1½)
    ii) Malachite green from Benzaldehyde.(1½)
    iii) Acetamide from Methylcyanide (2)

    (OR)

    (b) i) What is Formalin? Give its uses. (2)
    ii) Explain the Following Reactions.
    a) Perkin's Reaction. (1½)
    b) Benzoin Condensation reaction? (1½)