12 **R**

Register No. 12115

Time : 1.30 Hrs.

First Mid-Term Test - 2024
CHEMISTRY

Marks : 50

I. Choose the correct answer. **10 x 1 = 10**

1. Electrochemical process is used to extract
   a) Fe b) Pb c) Na d) Ag
2. The metal oxide which cannot be reduced to metal by carbon is.....
   a) PbO b) Al_2O_3 c) ZnO d) FeO
3. The nature of potash alum in aqueous solution is
   a) basic b) acidic c) neutral d) amphoteric
4. The basic structural unit of silicate is
   a) $(SiO_3)^{2-}$ b) $(SiO_4)^{2-}$ c) $(SiO)^{2-}$ d) $(SiO_4)^{4-}$
5. The basicity of pyrophosphorous acid ($H_4P_2O_5$ is)
   a) 4 b) 2 c) 3 d) 5
6. Solid CO_2 is an example of
   a) Covalent solid b) metallic solid c) molecular solid d) Ionic solid
7. Example for non-stoichiometric defect is.....
   a) NaCℓ b) AgBr c) FeO d) $CdCl_2$ to AgCℓ
8. The addition of a catalyst during a chemical reaction alter which of the following quantities?
   a) Enthalpy b) Activation energy c) Entropy d) Internal energy
9. After 2 hrs a radioactive substance becomes $(1/16)^{th}$ of original amount, then the half life (in min.) is.....
   a) 60 min b) 120 min c) 30 min d) 15 min
10. Carbolic acid is.....
    a) phenol b) picric acid c) benzoic acid d) phenyl acetic acid

II. Answer any five questions. **5 x 2 = 10**

11. Differentiate minerals and ore.
12. Write any two uses of zinc.
13. How will you convert boric acid to boron nitride?
14. What is inert pair effect?
15. What is covalent solids?
16. Give any two examples for first order reaction.
17. How will you prepare 1, 4 dioxane from glycol.

III. Answer any five questions. **5 x 3 = 15**

18. Describe a method for refining nickel.

19. Give one example for each of the followings.
    i) icosogens
    ii) tetrogens
    iii) prictogen
20. What are interhalogen compounds? Give an example.
21. Differentiate tetrahedral and octahedral voids.
22. Write three characteristics of ionic crystals.
23. Write Arrhenius equation and explain the terms involved. $K = Ae^{\left(\frac{E_a}{RT}\right)}$
24. How is phenol prepared from chlorobenzene in Dow's process.

IV. Answer all the questions. **3 x 5 = 15**

25. a) Explain zone refining process 5

    (OR)

    b) (i) Write a note on Fisher tropsch synthesis 3

    ii) Preparation of bleaching powder. 2

26. a) Write a note on

    (i) Schottky defect 2½

    (ii) Frenkel defect 2½

    (OR)

    b) Derive the rate constant for first order eaction 5

27. a) Differentiate crystalline and amorphous solid. 5

    (OR)

    b) Write a note on followings

    (i) Schotten - Baumann reaction 2½

    (ii) Phthalein reaction 2½