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CLASS : XII **MARKS : 70**
SUBJECT : CHEMISTRY **TIME : 3.00HRS**

I. Choose the correct answers. **15X 1 =15**

1. Which one of the following reaction represents calcinations?
   a) $2Zn + O_2 \rightarrow 2ZnO$ b) $2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$
   c) $MgCO_3 \rightarrow MgO + CO_2$ d) Both (a) and (c)
2. Boric acid is an acid because its molecule ……
   (a) contains replaceable H^+ ion
   (b) gives up a proton
   (c) combines with proton to form water molecule
   (d) accepts OH– from water, releasing proton.
3. Shape of XeF_6 is ……
   (a) Octahedron (b) Distorted octahedron
   (c) Pyramidal (d) Tetrahedron
4. Which one of the following statements related to lanthanons is incorrect?
   (a) Europium shows +2 oxidation state.
   (b) The basicity decreases as the ionic radius decreases from Pr to Lu.
   (c) All the lanthanons are much more reactive than aluminium.
   (d) Ce^{4+} solutions are widely used as oxidising agents in volumetric analysis.
5. As per IUPAC guidelines, the name of the complex $[CO(en)_2(ONO)Cl]Cl$ is ……
   (a) chlorobisethylenediaminenitritocobalt (III) chloride
   (b chloridobis (ethane-1, 2-diamine) nitro k – Ocobaltate (III) chloride
   (c) chloridobis (ethane-1, 2-diammine) nitrito k – Ocobalt (II) chloride
   (d) chloridobis (ethane-1, 2-diamine) nitro k – Ocobalt (III) chloride
6. The vacant space in bcc lattice unit cell is ……..
   (a) 48% (b) 23% (c) 32% (d) 26%
7. The aqueous solutions of sodium formate, anilinium chloride and potassium cyanide are Respectively
   a) acidic, acidic, basic b) basic, acidic, basic
   c) basic, neutral, basic d) none of these
8. During electrolysis of molten sodium chloride, the time required to produce 0.1mol of chlorine gas using a current of 3A is
   a) 55 minutes b) 107.2 minutes c) 220 minutes d) 330 minutes
9. 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
10. Carbolic acid is
    a) Phenol b) Picric acid c) benzoic acid d) phenyl acetic acid

11. Reaction of acetone with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is
    a) Grignard reagent b) Sn/HCl
    c) hydrazine in presence of slightly acidic solution d) hydrocyanic acid
12. Assertion: Paracetamol and aspirin are both antipyretics
    Reason: Both Paracetamol and aspirin are controlled and reversible loss of conciousnes by affecting central nervous system
    a) If both accretion and reason are true and reason is the correct explanation of assertion
    b) If 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.
13. Which one of the following gives blue colour with amylose and purple colour with amylopectin?
    (a) Tollen's reagent (b) Fehling's solution
    (c) Iodine solution (d) Bromine water
14. The shape of As_2S_3 is
    (a)Spherical (b) disc (c) linear (d) rod
15. Which of the following statement is not correct with respect to electrolytic conductance?
    (a) Conductivity increases with the decreases in Viscosity
    (b) Conductivity increases with the increases in Temperature
    (c) Molar Conductance of a solution decreases with increase in dilution
    (d) Conductivity decreases with the increases in Temperature

II. Answer Any six questions. (Question No. 24 is compulsory) (6 x 2 = 12)

16. Give the basic requirement for vapour phase refining.
17. Complete the following reactions. $Na_2B_4O_7 + H_2SO_4 + H_2O \rightarrow ?$
18. Fluorine is highly reactive than other halogens. Why?
19. Write polymerization reaction using Zeigler – Natta catalyst.
20. Write the IUPAC name of the following Ligands a) en b) EDTA
21. Define Unit cell
22. Calculate the Half life period for a Zero order reaction.
23. What is Auto ionization of water ? Give an example.
24. Ksp of AgCl is 1.8×10^{-10}. Calculate molar solubility in 1M $AgNO_3$

III. Answer Any six questions. (Question No. 33 is compulsory) (6 x 3 = 18)

25. State Kohlraush law. And give one example.
26. What are the general characteristics of a catalyst.
27. Explain Kolbe's reaction.
28. How will you prepare Ethanal from Ethylene glycol.
29. How will you prepare phenylmethanal from Methylbenzene.
30. What is Urotropine? How it is Prepared?
31. Write reducing property of formic acid with an example.

32.Write a short note on Peptide bond.

33. Write the reaction involved when D- glucose treated with acetic anhydride.

IV. Answer the following questions. **(5 x 5 = 25)**

34. a) i) Write a note about Froth Floatation method.

ii) How will you identify Borate radical? (Or)

b) Write a note on Zeolites

35. a) i) Explain the manufacture of chlorine by Deacon's process

ii) Write the structure and basicity of following oxyacids. a) $H_4P_2O_7$ b) $H_4P_2O_6$ (Or)

b) What is Lanthanide contraction? List the consequences of lanthanide contraction.

36. a) Write the postulates of Werner's theory. (Or)

b) i) Define : Crystal lattice ii)Write note on Impurity defect.

37. a) i) Derive integrated rate law for a first order reaction A→ product

ii) What is Buffer action? (Or)

b) i) Write Esterification reaction. ii) Write Swern oxidation reaction.

38. a) i) How will you prepare Propan- 1-ol from Grignard reagent?

ii) Write stephen's reaction. (Or)

b) i) How will you prepare p- nitro aniline from aniline?

ii) How are RNA molecules classified ?Explain.

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