TVL12C

Tirunelveli District
Common First Revision Test - 2025

Standard 12
CHEMISTRY
PART - I

Time: 3.00 Hours Marks: 70

15×1=15

I. Choose the correct answer:

1) Zinc is obtained from Zno by
   a) Carbon reduction b) Reducing using silver
   c) Electro chemical process d) Acid Leaching
2) Inorganic benzene is
   a) Diborane b) Borazole c) Borax d) Boric acid
3) Among the following the correct order of acidity is
   a) $HClO_2 < HClO < HClO_3 < HClO_4$ b) $HClO_4 < HClO_2 < HClO < HClO_3$
   c) $HClO_3 < HClO_4 < HClO_2 < HClO$ d) $HClO < HClO_2 < HClO_3 < HClO_4$
4) Which one of the following ions has the same number of unpaired electrons as present in V^{3+}?
   a) Ti^{3+} b) Fe^{3+} c) Ni^{2+} d) Cr^{3+}
5) How many geometrical isomers are Possible for $[Pt(Py)(NH_3)(Br)(Cl)]$?
   a) 3 b) 4 c) 0 d) 15
6) Atoms x and y form bcc crystalline structure. Atom x is present at the corners of the cube and y is at the centre of the cube. The formula of the compound is
   a) xy_3 b) xy_2 c) xy d) x_2y
7) For the reaction $2NH_3 \rightarrow N_2 + 3H_2$

   if $-\frac{d[NH_3]}{dt} = K_1[NH_3]$, $\frac{d[N_2]}{dt} = K_2[NH_3]$, $\frac{d[H_2]}{dt} = K_3[NH_3]$

   then the relation between K_1, K_2 and K_3 is
   a) $K_1 = K_2 = K_3$ b) $1.5\,K_1 = 3K_2 = K_3$ c) $K_1 = 3K_2 = 2K_3$ d) $2K_1 = K_2 = 3K_3$
8) Which of the following fluro compounds is most likely to behave as a lewis base?
   a) BF_3 b) pF_3 c) cF_4 d) SiF_4
9) The number of electrons that have a total charge of 9650 coulombs is
   a) 6.22×10^{23} b) 6.022×10^{24} c) 6.022×10^{22} d) 6.022×10^{-34}
10) The gold number of some protective colloids are given in bracket which one of these is most protective?
   a) White yolk (0.08–0.10) b) Potato Starch (25)
   c) Gum arabic (0.15–0.25) d) Gelatin (0.005 – 0.01)
11) **Assertion** : Phenol is more acetic than ethanal
   Reason : Phenoxied ion is resonance stabilized
   a) If both assertion 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
12) Which one of the following reaction is an example of disproportionation reaction
   a) Aldol condensation b) Benzain condensation
   c) both (a) and (b) d) Cannizaro reaction
13) Which of the following reagent can be used to convert nitrobenzene to aniline
   a) Sn/HCl b) Zn.Hg/HCl c) Zn/NH_4Cl d) all of these
14) Sorbital and Mannitol are
   a) enantiomers b) tautomers
   c) epimers d) Functional isomers
15) Drugs that find to the receptor site and inhibit its natural function are called
   a) agonists b) antagonists
   c) enzymes d) molecular targets

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PART - II

6×2=12

II. Answer any 6 questions. Q.No : 24 is compulsory.

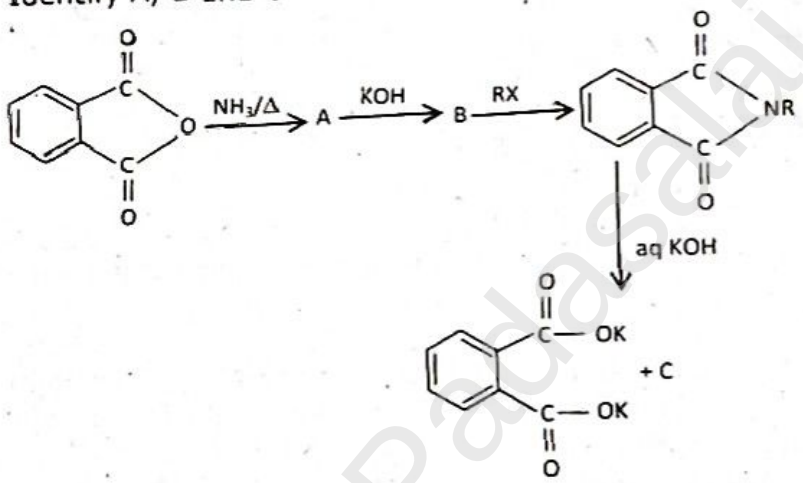
16) Give the basic requirement for vapour phase refining
17) Write a short note on anomolous properties of the first element of P-block
18) What are the characteristics of interstitial compounds
19) Distinguish Lewis acids and Lewis bases
20) What are the applications of Kohlrausch's law
21) What is metamerism
22) How will you prepare Ethylacetate from methyl acetate
23) What are antibiotics
24) The rate of formation of a dimer in a second order reaction is 7.5×10^{-3} mol L^{-1} s^{-1} at 0.05 mol L^{-1} monomer concentration. Calculate the rate constant

PART - III

6×3=18

II. Answer any 6 questions. Q.No : 33 is compulsory.

25) Write a note on Fisher Tropsch synthesis
26) Give the uses of Helium
27) What are hydrate isomers? Explain with an example
28) Explain the types of molecular solids with an example
29) Give the differences between order and molecularity of a reaction
30) Describe adsorption theory of catalysis
31) Explain the reducing nature of formic acid
32) What are reducing and non-reducing sugars
33) Identify A, B and C



PART - IV

5×5=25

IV. Answer all the questions.

34) a) Explain zone refining process with an example **(OR)**
b) i) Give a reason to support that sulphuric acid is a dehydrating agent
ii) What is inert pair effect?

35) a) Describe preparation of potassium dicromate **(OR)**
b) i) What is crystal field stabilization energy (CFSE)
ii) Give one test to differentiate $[Co(NH_3)_5Cl]SO_4$ $(Co(NH_3)_5\ SO_4]Cl$

36) a) i) Give any three characteristics of ionic crystals
ii) Aluminium crystallizes in a cubic close packed structure. Its metallic radius is 125 p.m. Calculate the edge length of unit cell **(OR)**
b) Derive the integrated rate law for a first order reaction.

37) a) i) Differentiate physical adsorption and chemical adsorption
ii) Write a note on catalytic poison. **(OR)**
b) Write a note on (i) Riemer Tiemann reaction (ii) Phenolphthalein reaction iii) coupling reaction

38) a) i) How will you prepare malachite green from benzaldehyde
ii) Identify compounds A, B and C in the following sequence of reaction

$$C_6H_5N_2Cl \xrightarrow{CuCN} A \xrightarrow{H_2O/H^+} B \xrightarrow{NH_3} C$$ **(OR)**

b) i) Write the Zwitter ion structure of alanine.
ii) Explain the mechanism of cleansing actions of soaps and detergents

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