V12C

Virudhunagar District Common Examinations
Second Revision Test - February 2023

Standard 12
CHEMISTRY

Time Allowed: 3.00 Hours | Maximum Marks: 70

PART - A

Choose the best answer: **15×1=15**

1) Electrochemical process is used to extract
   a) Iron b) Lead c) Sodium d) Silver
2) In boric acid, $[BO_3]^{-3}$ units are linked by
   a) Ionic bond b) Coordination bond
   c) Hydrogen bond d) All the above
3) On hydrolysis, PCl_3 gives
   a) H_3PO_3 b) PH_3 c) H_3PO_4 d) $POCl_3$
4) Which of the following has half filled electronic configuration?
   a) Fe^{+2} b) Fe^{+3} c) Mn^{+3} d) Mn^{+4}
5) Fac-Mer isomerism is shown by
   a) $[CO(en)_3]^{+3}$ b) $[CO(NH_3)_4Cl_2]^+$
   c) $[CO(NH_3)_3Cl_3]$ d) $[CO(NH_3)_5Cl]SO_4$
6) SiO_2 is an example for
   a) ionic crystal b) covalent crystal
   c) molecular crystal d) metallic crystal
7) The addition of a catalyst during a chemical reaction alters which of the following quantities?
   a) Enthalpy b) Activation energy c) Entropy d) Internal energy
8) Equal volumes of three acid solutions of pH 1, 2 and 3 are mixed in a vessel. What will be the H^+ ion concentration in the mixture?
   a) 3.7×10^{-2} b) 10^{-6} c) 0.111 d) None of these
9) Faraday constant is defined as
   a) charge carried by 1 electron
   b) charge carried by 1 mole of electrons
   c) charge required to deposit 1 mole of substance
   d) charge carried by 6.22×10^{10} electrons
10) Which of the following acts as a catalyst in the hydrolysis of ethyl acetate?
   a) C_2H_5OH b) CH_3COOH c) H_2O d) $C_2H_5OOCCH_3$
11) Isopropyl benzene 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_5-OH
12) Which one of the following undergoes haloform reaction?
   a) Formaldehyde b) Benzaldehyde c) Benzophenone d) Acetaldehyde
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) _____ is called a reducing sugar.
   a) Glucose b) Fructose c) Both a and b d) Sucrose
15) Nylon is an example of
   a) Polyamide b) Polythene c) Polyester d) Polysaccharide

PART - B

Answer any SIX questions. Q.No. 20 is compulsory: **6×2=12**

16) Give the limitations of Ellingham diagram.
17) Mention the uses of alum.

V12C

18) What is coordination number?
19) Define Unit cell.
20) Write the expression for the solubility product of Hg_2Cl_2.
21) How can you prepare a colloid by double decomposition method?
22) What happens when phenol reacts with nitrous acid?
23) How will you identify the primary amine?
24) How are vitamins classified?

PART - C

Answer any SIX questions. Q.No. 32 is compulsory: 6×3=18

25) How is phosphine prepared in the laboratory?
26) Write about chromylchloride test.
27) What is crystal field stabilisation energy?
28) State Faraday's Laws of electrolysis.
29) Give the differences between order and molecularity of a reaction.
30) Write a note on nano catalysis.
31) What happens when benzaldehyde reacts with ammonia?
32) **Complete the following reaction:**

$$CH_3CHO \xrightarrow{NH_2\text{-}OH} A \xrightarrow{P_2O_5} B$$

33) How is Terylene prepared?

PART - D

Answer ALL the questions: 5×5=25

34) a) Write a note on (i) Froth floatation process (ii) Fullerene.

(OR)

b) i) What happens when chlorine reacts with excess ammonia?
ii) How will you prepare bleaching powder?

35) a) Compare lanthanides and actinides.

(OR)

b) Discuss briefly the nature of bonding in metal carbonyls.

36) a) i) Explain metal excess defect.
ii) Write Arrheius equation and explains the terms involved.

(OR)

b) Derive an expression for the hydrolysis contant and degree of hydrolysis of salt of strong acid and weak base.

37) a) i) Write about Galvanic cell notation.
ii) Define Gold number. **(OR)**

b) How can you convert?
i) Ethane - 1, 2 - diol → Ethanal
ii) But-2-ene → Ethanal

38) a) i) What is tautomerism? Explain with an example.
ii) What are antiseptcis?

(OR)

b) Discuss about the structure of glucose.
