V12C

Virudhunagar District
Common First Mid Term Test - 2024

124045

Standard 12
CHEMISTRY

Time: 1.30 Hours

Part - I

Marks: 50

I. **Answer all the questions:** $10 \times 1 = 10$

1) Which of the following plot gives Ellingham diagram

   a) $\Delta SV_s T$
   b) $\Delta G^\circ V_s T$
   c) $\Delta G^\circ V_s \frac{1}{T}$
   d) $\Delta G^\circ V_s T^2$

2) Oxidation state of Carbon in its hydrides

   a) + 4
   b) – 4
   c) + 3
   d) + 2

3) If 75% of a first order rection was completed in 60 minutes, 50% of the same reaction under the same conditions would be completed in

   a) 20 minutes
   b) 30 minutes
   c) 35 minutes
   d) 75 minutes

4) The ratio of close packed atoms to terahedralhole in cubic packing is

   a) 1 : 1
   b) 1 : 2
   c) 2 : 1
   d) 1 : 4

5) Williamson synthesis of dimethyl ether is a/an

   a) SN^1 reaction
   b) Sn^2 reaction
   c) Elecrophilic addition
   d) Electrophilic Subsitution

6) The metal oxide which cannot be reduced by carbon is

   a) PbO
   b) Al_2O_3
   c) ZnO
   d) FeO

7) The compound that is used in nuclear reactors as protective shields and control rods is

   a) Metal borides
   b) Metal oxides
   c) Metal carbonates
   d) Metal Carbides

8) Solid CO_2 is an example of

   a) Covalent solid
   b) metallic solid
   c) molecular solid
   d) Ionic solid

9) **Assertion** : rate of the reaction doubles when the concentration of the reactant is doubles if it is a first order reaction.

   Reason : rate constant also doubles

   a) Both assertion and reason are true and reason is the correct explanation of assertion

   b) 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

10) Phenol with neutral Ferric Chloride gives

   a) Red colour
   b) Blue Colour
   c) Dark green
   d) Yellow colour

Part - II

Answer any five of the following: Q.No. 17 is compulsory. $5 \times 2 = 10$

11) What is Auto reduction

12) Write Van Arkel method of refining Ziroconium.

13) Mention any two uses of Carbon monoxide

14) Define packing efficiency. What is the percentage of Vacant space in SC lattice unit cell?
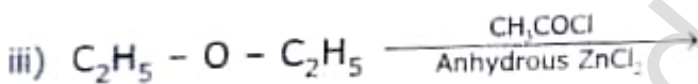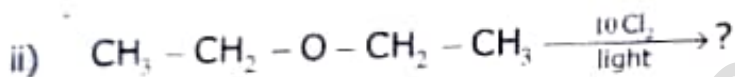
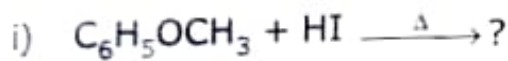15) What are metallic solids. Give example.

16) What is picric acid. Write the prepartion of picric acid.

17) For a reaction $X + Y + Z \rightarrow$ Products, the rate law is given by rate $= k[X]^{1/2}[Y]^{1/2}$
What is the over all order of the reaction and what is the order of the reaction with respect to z.

Part - III

Answer any five of the following: Q.No. 24 is compulsory. $5 \times 3 = 15$

18) Write short notes on anamolous. Properties of Nitrogen
19) Explain Impurity defect with an example
20) Give the difference between order and molecularity of a reaction.
21) How will you purify Silver by Electrolytic refining method.
22) Convert the following
 a) Ethylene gylcol $\rightarrow$ Oxirane
 b) Ethlylene glycol $\rightarrow$ 1, 4 - dioxane
23) Explain rate determining step with example
24) Complete the following reactions.

 i) $C_6H_5OCH_3 + HI \xrightarrow{\Delta}$?

 ii) $CH_3 - CH_2 - O - CH_2 - CH_3 \xrightarrow[\text{light}]{10\,Cl_2}$?

 iii) $C_2H_5 - O - C_2H_5 \xrightarrow[\text{Anhydrous } ZnCl_2]{CH_3COCl}$

Part - IV

Answer all the questions. $3 \times 5 = 15$

25) a) Explain electrochemical extraction of Aluminium by Hall - Heroult process
(OR)
 b) i) Write short notes on Zeolites
  ii) Write the uses of Alum

26) a) Write the difference between Amorphous solids and Crystalline solids
(OR)
 b) i) What is Pseudo first order reaction. Give example.
  ii) How the Catalyst affect the rate of the reaction

27) a) Write the following reactions.
  i) Schotten - Baumann reaction
  ii) Phthalein reaction
(OR)
 b) What is metamerism? Give the structure and IUPAC name of the metamers of 2-methoxy propane.

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