

V12C

Virudhunagar District Common Examinations
First Revision Examination - January 2023

Standard 12

CHEMISTRY

Part - I

Time: 3.00 Hours

Marks: 70

15 x 1 = 15

Answer All the questions. Choose the correct answer out of the following choices.

- Elements like Zirconium and Titanium are purified by _____ method
 - heating under vacuum
 - Van Arkel method
 - Zone refining
 - electrolysis
- Carbon atoms in fullerene with formula C_{60} have
 - SP^3 hybridised
 - SP hybridised
 - SP^2 hybridised
 - partially SP^2 hybridised and partially SP^3 hybridised
- Which one of the following orders is correct for the bond dissociation enthalpy of halogen molecules?
 - $Br_2 > I_2 > F_2 > Cl_2$
 - $F_2 > Cl_2 > Br_2 > I_2$
 - $I_2 > Br_2 > Cl_2 > F_2$
 - $Cl_2 > Br_2 > F_2$
- Equivalent weight of $KMnO_4$ in neutral medium is _____
 - 52.67
 - 31.6
 - 158
 - 58.4
- IUPAC name of the complex $K_3[Al(C_2O_4)_3]$ is
 - potassium tri oxalato aluminium (III)
 - potassium tri oxalato aluminate (II)
 - potassium tris oxalato aluminate (III)
 - potassium tri oxalato aluminate (III)
- The packing fraction of simple cubic unit cell is _____
 - 32%
 - 52.31%
 - 68%
 - 74%
- If 75% of a first order reaction was completed in 60 minutes, 50% of the same reaction under the same conditions would be completed in
 - 20 minutes
 - 30 minutes
 - 35 minutes
 - 75 minutes
- Relationship between the solubility product and molar solubility for $BaSO_4$ is
 - S
 - 2S
 - S^2
 - $2S^2$
- Assertion: Pure iron when heated in dry air is converted with a layer of rust
Reason: Rust has the composition Fe_3O_4
 - If both assertion and reason are true and reason is the correct explanation of assertion
 - If both assertion and reason are true but reason is not the correct explanation of assertion
 - Assertion is true but reason is false
 - Both assertion and reason are false
- Match the following:

A) Pure nitrogen	-	(i) Chlorine
B) Haber Process	-	(ii) Sulphuric acid
C) Contact Process	-	(iii) Ammonia
D) Deacons Process	-	(iv) Sodium azide (or) Barium azide

 which of the following is the correct option?

	A	B	C	D
a)	(i)	(ii)	(iii)	(iv)
b)	(ii)	(iv)	(i)	(iii)
c)	(iii)	(iv)	(ii)	(i)
d)	(iv)	(iii)	(ii)	(i)
- Which of the following is used as surgical anaesthetic agent in surgery?
 - phenol
 - diethyl ether
 - anisole
 - none of these
- The formation of cyanohydrin from acetone is an example of
 - nucleophilic substitution
 - electrophilic substitution
 - electrophilic addition
 - nucleophilic addition
- When aniline reacts with acetic anhydride the product formed is
 - o-amino acetophenone
 - m-amino acetophenone
 - p-amino acetophenone
 - acetanilide
- Which of the following vitamins is water soluble?
 - vitamin E
 - vitamin K
 - vitamin A
 - vitamin B

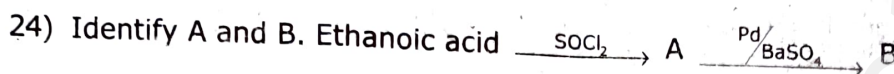
- 15) Aspirin is a/an
 a) acetyl salicylic acid
 b) benzoyl salicylic acid
 c) chlorobenzoic acid
 d) anthranilic acid

Part - II

Answer any 6 questions Q.no. 24 is compulsory

6 x 2 = 12

- 16) What are the differences between minerals and ores?
 17) Write a note on zeolites.
 18) What are transition metals? Give example.
 19) Give any two characteristics of ionic crystals.
 20) Define half life period of a reaction.
 21) What are promoters? Give example.
 22) Write Schotten-Baumann reaction.
 23) Write Gattermann reaction.



Part III

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

6 x 3 = 18

- 25) Give the uses of helium.
 26) What is lanthanoid contraction and what are the effects of lanthanide contraction?
 27) In the complex, $[\text{Pt}(\text{NO}_2)(\text{H}_2\text{O})(\text{NH}_3)_2]\text{Br}$, Identify the following
 i) Central metal atom/ion
 ii) Ligands
 iii) Coordination number
 28) State Ostwald dilution law and derive its mathematical expression.
 29) Write the rate law for the following reactions
 a] A reaction that is 3/2 order in X and zero order in Y.
 b] A reaction that is second order in NO and first order in Br_2
 30) Give the Gabriel Phthalimide synthesis of primary amines.
 31) Give three differences between hormones and vitamins.
 32) What are drugs? How are they classified?
 33) Ionic conductance at infinite dilution of Al^{3+} and SO_4^{2-} are 189 and 160 $\text{mho cm}^2 \text{equiv}^{-1}$. Calculate the equivalent and molar conductance of the electrolyte $\text{Al}_2(\text{SO}_4)_3$ at infinite dilution.

Part - IV

Answer all the Questions :

5 x 5 = 25

- 34) a) (i) Write any four refining methods of crude metal. [2]
 (ii) Write the uses of Aluminium. [3]
(OR)
 b) How potash alum is prepared and give their uses? [5]
 35) a) (i) What is inert pair effect? [2]
 (ii) Write Hume-Rothery rule for alloy formation. [3]
(OR)
 b) (i) What are hydrate isomers? Give example. [3]
 (ii) What are the limitations of Werner's Theory? [2]
 36) a) Differentiate crystalline solids and amorphous solids. [5]
(OR)
 b) (i) Explain intermediate compound formation theory. [3]
 (ii) What is tyndall effect? [2]
 37) a) (i) What are Lewis acids and bases? Give two examples for each. [3]
 (ii) State Faraday's second law of electrolysis. [2]
(OR)
 b) (i) Write the preparation of Acrolein. [2]
 (ii) How do you prepare ether by dehydration of alcohols? [3]
 38) a) Explain aldol condensation mechanism with an example. [5]
(OR)
 b) (i) What is chloropicrin? How it is prepared and write its use? [3]
 (ii) Write the Zwitter ion structure of alanine. [2]