

T COMMON HALF YEARLY EXAMINATION - 2024

Standard - XII

Reg.No.

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Time: 3.00 hrs.

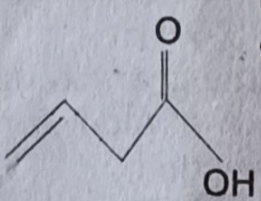
CHEMISTRY

Marks: 70

PART - I

Choose the correct answers:

15×1=15

- Which of the metal is extracted by Hall - Heroult process?
 - Al
 - Ni
 - Cu
 - Zn
- The formula of Inorganic benzene is
 - B_3N_3
 - $B_3N_3H_3$
 - $B_3N_3H_6$
 - $B_6N_6H_6$
- Most easily liquefiable gas is
 - Ar
 - Ne
 - He
 - Kr
- The most common oxidation state of actinoids is
 - +2
 - +3
 - +4
 - +6
- The observed colour of a coordination compound can be explained using
 - Valence bond theory
 - Werner's theory
 - Crystal field theory
 - Molecular orbital theory
- The Ionic radii of A^+ and B^- are 0.98×10^{-10} m and 1.81×10^{-10} m the coordination number of each ion in AB is
 - 8
 - 2
 - 6
 - 4
- The time required for 99.9% completion of a first order reaction is equal to
 - $2^{t^{1/2}}$
 - $5^{t^{1/2}}$
 - $10^{t^{1/2}}$
 - $100^{t^{1/2}}$
- P^H of a saturated solution of $Ca(OH)_2$ is 9. The solubility product (K_{sp}) of $Ca(OH)_2$
 - 0.5×10^{-15}
 - 0.25×10^{-10}
 - 0.125×10^{-15}
 - 0.5×10^{-10}
- Which of the following electrolytic solution has the least specific conductance?
 - 2N
 - 0.002N
 - 0.02N
 - 0.2N
- Colloidal graphite can be prepared by
 - Peptisation
 - Mechanical dispersion
 - Ultrasonic dispersion
 - Double decomposition
- Which one of the following is the strongest acid?
 - 2-nitrophenol
 - 4-chlorophenol
 - 4-nitrophenol
 - 3-nitrophenol
- The IUPAC name of 
 - but-3-enoic acid
 - but-1-ene-4-oicacid
 - but-2-ene-1-oicacid
 - but-3-ene-1-oicacid
- Which of the following amines does not undergo acetylation?
 - t-butylamine
 - ethylamine
 - diethylamine
 - triethylamine
- Cheilosis is a vitamin deficiency disease caused by
 - Vitamin B_6
 - Vitamin B_9
 - Vitamin B_7
 - Vitamin B_2
- The polymer used in making blankets (artificial wool) is
 - Polystyrene
 - PAN
 - Polyester
 - Polythene

PART - II**Answer any six questions. Question No. 24 is compulsory:****6×2=12**

- 16) Write the uses of Potash Alum.
- 17) Why fluorine always exhibit an oxidation state of -1?
- 18) Define crystal field stabilizing energy (CFSE).
- 19) Write Bragg's equation.
- 20) Distinguish between Lewis acid and Lewis base.
- 21) What is coagulation?
- 22) Give the uses of Diethyl ether.
- 23) Write the Hoffmann's degradation reaction.
- 24) Give the structure of Urotropine.

PART - III**Answer any six questions. Q.No. 33 is compulsory:****6×3=18**

- 25) What is the difference between minerals and ores?
- 26) Give the structural formula of H_3PO_4 and $H_4P_2O_7$.
- 27) Explain why Cr^{2+} is strongly reducing while Mn^{3+} is strongly oxidizing.
- 28) Differentiate between rate and rate constant of a reaction.
- 29) Calculate the P^H of 0.04M HNO_3 solution.
- 30) Define Kohlraugh law.
- 31) Explain Popoff's rule with example.
- 32) What are Hormones? Give examples.
- 33) Write a note on Gabriel Phthalimide synthesis.

PART - IV**Answer all the questions:****5×5=25**

- 34) a) i) What is auto reduction of metallic ores? (2)
ii) Write notes on Ortho silicates and Pyro silicates. (3)
(OR)
- b) i) Give the balanced equation for the reaction between chlorine with cold NaOH and hot NaOH. (3)
ii) Why do transition elements act as catalyst? (2)
- 35) a) A solution of $[Ni(H_2O)_6]^{2+}$ is green, whereas a solution of $[Ni(CN)_4]^{2-}$ is colourless. Explain. (OR) (5)
- b) i) Differentiate Schottky defect and Frenkel defect. (3)
ii) What is Activation energy? (2)
- 36) a) Derive an expression for Nernst equation. (5)
(OR)
- b) What are catalyst? Give the characteristics of catalysts. (1+4)
- 37) a) i) Explain the mechanism of Aldol condensation. (3)
ii) Write the Gomberg reaction. (2)
(OR)
- b) Explain the structure of Glucose.
- 38) a) Explain the mechanism of cleansing action of soaps and detergents. (5)
(OR)
- b) An organic compound (A) is C_6H_6O which is heating with Zn dust give compound (B) C_6H_6 . Compound (B) undergo Friedel Craft reaction with propyl chloride give compound (C). Compound (C) which on strong oxidation with $KMnO_4$ give compound (D) $C_7H_6O_2$. Find the compounds A, B, C and D. (5)