

Class : 12Register
Number**COMMON HALF YEARLY EXAMINATION 2023-24**

Time Allowed : 3.00 Hours]

CHEMISTRY
PART - A

[Max. Marks : 70

I. Choose the correct answer.**15x1=15**

- Considering Ellingham diagram, Which of the following metals can be used to reduce Alumina?
a) Fe b) Cu c) Mg d) Zn
- Which of the following metals has the largest abundance in the earth's crust?
a) Aluminium b) Calcium c) Magnesium d) Sodium
- The basicity of Pyrophosphorous acid ($H_4P_2O_5$) is
a) 4 b) 2 c) 3 d) 5
- The ratio of close packed atoms to Tetrahedral hole in Cubic packing is
a) 1 : 1 b) 1 : 2 c) 2 : 1 d) 1 : 4
- If the initial concentration of the reactant is doubled, the time for half reaction is also doubled. Then the order of the reaction is
a) Zero b) One c) Fraction d) None
- Conjugate base for bronsted acid H_2O and HF are
a) OH^- and H_2FH^+ , respectively b) H_3O^+ and F^- , respectively
c) OH^- and F^- , respectively d) H_3O^+ and H_2F^+ , respectively
- Which of the following Electrolytic solution has the least specific Conductance.
a) 2N b) 0.002N c) 0.02 N d) 0.2 N
- Hair Cream is
a) Gel b) Emulsion c) Solid solution d) solution
- The number of SP^2 and SP^3 Hybridised Carbon in fructose are respectively.
a) 1 and 4 b) 4 and 2 c) 5 and 1 d) 1 and 5
- Drugs that bind to the receptor site and inhibit its natural function are called
a) Antagonists b) Agonists c) Enzymes d) Molecular Targets
- The Magnetic moment of Fe^{3+} ion is
a) 5.92Bm b) 2.80 Bm c) 8.95Bm d) 3.90Bm
- Which of the following is diamagnetic in nature?
a) $[Ni(CN)_6]^{2-}$ b) $[Cr(NH_3)_6]^{3+}$ c) $[CoCl_4]^{2-}$ d) $[MnCl_4]^{2-}$
- On reacting with Neutral Ferric Chloride, Salicyldehyde gives
a) Red Colour b) Violet Colour c) Dark Green Colour d) no Colouration
- Which one of the following is incorrectly matched?
a) Tollen's reagent = $AgNO_3 + NH_4OH$
b) Fehlings Solution = $CuSO_4 + Rochella$ Salt
c) Benedict's Solution = $CuSO_4 + Sodium$ Citrate + $NaOH$
d) Baeyer's Reagent = Conc $HCl + Anhydrous Zn Cl_2$
- Oil of Mirbane is
a) Nitro Ethane b) Nitro Propane c) Nitro Benzene d) P - Nitro Aniline

PART - B**II. Answer any six questions. Question No. 24 is compulsory.****6x2=12**

- What is the role of Quicklime in the extractions of Iron from its Oxide. Fe_2O_3 ?
- Give a reason to support that Sulphuric Acid is a Dehydrating Agent?
- What is Crystal Field Splitting Energy? Explain.
- Give examples for First order Reaction.
- Why is AC current used instead of DC in measuring the Electrolytic Conductance?
- How will you prepare Phenol from 2 - Phenyl Propane.
- Ethyl amine dissolves in water while Aniline will not dissolve in Water. Why?
- How is Terylene prepared? Mention its use.
- Calculate the P^H of $1.5 \times 10^{-3} M$ Solution of $Ba(OH)_2$

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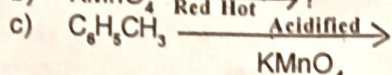
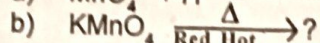
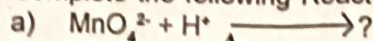
PART - C

III Answer any six questions. Question No. 33 is compulsory.

6x3=18

25. Describe briefly the Catenation property of Carbon.

26. Complete the following Reactions:



27. Draw the figure to show Splitting of d orbitals in Tetrahedral Field.

28. What are types of Point Defects?

29. Explain Common ion effect with an example.

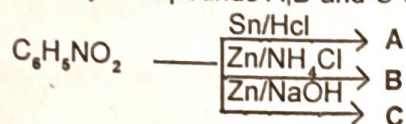
30. What are Active Centres?

31. How will you convert Benzaldehyde into the following Compounds?

i) Benzoin ii) Cinnamic acid iii) Schiff's base

32. Elucidate the Structure of Glucose.

33. Identify Compounds A, B and C for the following.



PART - D

IV Answer all the questions.

5x5=25

34. (a) i) Explain Froth Flotation process. (3)

ii) What is Phosgene? How is it prepared? (2)

(OR)

(b) i) Explain why Fluorine always exhibit an oxidation state of -1? (2)

ii) Give the uses of Argon.

35. (a) (i) Describe the preparation of Potassium Dichromate? (3)

(ii) What are Hydrate Isomers? Explain with an example? (2)

(OR)

(b) i) Calculate the percentage efficiency of Packing in fcc Crystal. (3)

ii) Give the difference between Order and Molecularity of a reaction (2)

36. (a) (i) What are Buffer Solutions? Give its uses. (3)

(ii) Explain the function of $\text{H}_2 - \text{O}_2$ fuel cell. (2)

(OR)

(b) Explain Condensation methods of preparation of Colloids? (5)

37. (a) (i) How to distinguish 1° , 2° and 3° alcohols by Victor Meyer's test. (3)

(ii) What is Urotropine? How is it prepared? (2)

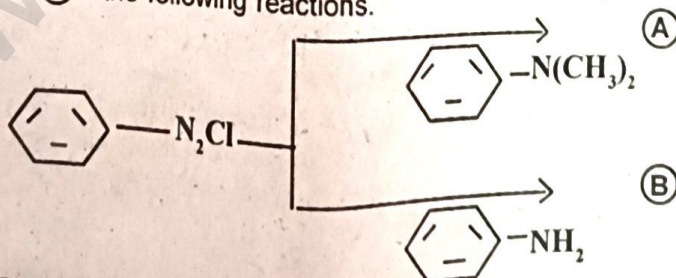
(OR)

(b) i) Explain the Structure of Fructose.

ii) How is Nylon -66 prepared? Mention its uses.

38. (a) i) K_{sp} of Ag_2CrO_4 is 1.1×10^{-12} . What is the solubility of Ag_2CrO_4 in 0.1 M K_2CrO_4 ?

ii) Find (A) and (B) in the following reactions.



(OR)

(b) Compound (A) with molecular formula $\text{C}_7\text{H}_6\text{O}$ reduces Tollen's reagent. When (A) reacts with 50% NaOH gives compound (B) of molecular formula $\text{C}_7\text{H}_6\text{O}$ and (C) of molecular formula $\text{C}_7\text{H}_5\text{O}_2\text{Na}$. Compound (C) on treatment with dil HCl gives Compound (D) of molecular formula $\text{C}_7\text{H}_6\text{O}_2$. When (D) is heated with Sodalime gives Compound (E). Identify A, B, C, D and E. Write the Corresponding Equations.

KK/12/Che/2