

QUARTERLY EXAMINATION - 2024

CLASS : 12

Reg.No

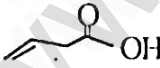
Time : 3.00 Hours

CHEMISTRY

Total Marks : 70

I) Answer all the questions:

15x1=15

- Wolframite ore is separated from tinstone by the process of
 - Smelting
 - Calcination
 - Roasting
 - Electromagnetic separation
- Which of these is not a monomer for a high molecular mass silicone polymer?
 - Me_3SiCl
 - PhSiCl_2
 - MeSiCl_3
 - Me_2SiCl_2
- P_4O_6 reacts with cold water to give
 - H_3PO_3
 - $\text{H}_4\text{P}_2\text{O}_7$
 - HPO_3
 - H_3PO_4
- In acidic medium, Potassium permanganate oxidizes oxalic acid to
 - Oxalate
 - Carbon dioxide
 - acetate
 - acetic acid
- Potassium has a bcc structure with nearest neighbour distance 4.52\AA . Its atomic weight is 39. Its density will be
 - 915 kgm^{-3}
 - 2142 kgm^{-3}
 - 452 kgm^{-3}
 - 390 kgm^{-3}
- If the Initial concentration of the reactant is doubled, the time for half reaction is also doubled. Then the order of the reaction is
 - Zero
 - one
 - Fraction
 - none
- For the reaction $2\text{A} + \text{B} \rightarrow 3\text{C} + \text{D}$ which of the following does not express the reaction rate
 - $\frac{d[\text{D}]}{dt}$
 - $-\frac{d[\text{A}]}{2dt}$
 - $-\frac{d[\text{C}]}{3dt}$
 - $-\frac{d[\text{B}]}{dt}$
- 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?
 - 3.7×10^{-2}
 - 10^{-6}
 - 0.111
 - None of these
- Assertion : Tertiary alcohols undergo dehydration more readily than primary alcohol
Reason : Tertiary alcohols are less acidic than primary alcohols
 - Both assertion and reason are true and reason is the correct explanation of assertion
 - Both assertion and reason are true and reason is not the correct explanation of assertion
 - Assertion is true but reason is false
 - Both assertion and reason are false
- $\text{HO}-\text{CH}_2-\text{CH}_2-\text{OH}$ on heating with Periodic acid gives
 - methanol
 - ethanol
 - Methanal
 - CO_2
- The IUPAC name of 
 - but-3-enoic acid
 - but-1-ene-4-oic acid
 - but-2-ene-1-oic acid
 - but-3-ene-1-oic acid
- Which one of the following pairs is not correctly Matched :

Reducing agent	Name of the reaction
a) $\text{Zn}/\text{Hg}/\text{ConHCl}$	Clemenson reduction
b) LiAlH_4	wolf -kisher's reduction
c) Pd/BaSO_4	Rosenmund's reduction
d) $\text{SnCl}_2/\text{Con HCl}$	Stephen's reduction
- The oxidation state of chlorine in Cl_2O_7 is
 - +6
 - +7
 - +4
 - +5
- Reason of Lanthanoid contraction is
 - Increasing nuclear charge
 - decreasing nuclear charge
 - Imperfect shilding effect of 4f orbitals
 - both (a) & (c)
- In diboarane, the number of electrons that account for banana bonds is
 - six
 - two
 - four
 - three

II) Note : Answer any six questions. Q.No.24 compulsory.

6x2=12

16. Give the basic requirement for vapour phase refining
17. CO is a reducing agent, justify with an example .
18. What are interhalogen compounds? Give example.
19. Why d-block elements form co-ordination complexes?
20. Define unit cell.
21. Identify the order for the following reaction.
 - i) Rusting of Iron
 - b) Radio active disintegration of ${}_{92}\text{U}^{238}$
22. Write the limitation of Arrhenius concept
23. Write Benzoin condensation
24. Alcohols having higher boiling point than aldehydes, alkanes and ethers of comparable molecular masses, why?

III) Note : Answer any six questions. Q.No.33 Compulsory .

6x3=18

25. Give the limitations of Ellingham diagram.
26. Explain McAfee process of preparation of AlCl_3
27. Write the use of KMnO_4 .
28. Write short note on Frenkel defect.
29. Derive integrated rate law for a zero order reaction $\text{A} \rightarrow \text{products}$.
30. Distinguish Lewis acid and Lewis bases.
31. What is TNG? How it is prepared?
32. Write the test for carboxylic acids.
33. Write the molecular formula and draw the structure of sulphurous acid and Marshall's acid.

IV) Note : Answer all the questions.

5x5=25

34. a) Explain froth flotation process. (OR)
- b) i) How will you prepare inorganic benzene? (2)
- ii) Write uses of silicones. (3)
35. a) i) How bleaching powder is prepared? (2)
- ii) Write a short note on Holmes signal. (OR) (3)
- b) Describe the preparation of potassium dichromate
36. a) Calculate the percentage efficiency of packing in case of simple cubic crystal.(OR)
- b) Define half life of a reaction. Show that for a first order reaction half life is independent of initial concentration.
37. a) Derive Henderson equation (OR)
- b) An organic compound (A) molecular formula ($\text{C}_2\text{H}_6\text{O}$) react with H_2SO_4 at 443K to give compound (B) react with Bayer's reagent to give compound (C) molecular formula ($\text{C}_2\text{H}_6\text{O}_2$). Identify (A) , (B) and (C) and write the equation.
38. a) Explain Saytzeff's rule with example. (OR)
- b) Explain Cannizato reaction mechanism.

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