

Class : 12

Register
Number**COMMON QUARTERLY EXAMINATION 2024-25**

Time Allowed : 3.00 Hours]

CHEMISTRY

[Max. Marks : 70

PART - I

- I. Choose the correct answer. **YouTube/ Akwa Academy** 15x1=15
1. Fe_2O_3 ore is concentrated by ----- process
 - a) Froth Floatation
 - b) Leaching
 - c) Hydraulic wash
 - d) Magnetic separation
 2. In the electrolytic refining of copper, which one of the following is used as electrolyte?
 - a) Pure Copper
 - b) Impure Copper
 - c) Copper Sulphate
 - d) Acidified copper sulphate
 3. The element that does not show catenation among the following p-block elements is
 - a) Carbon
 - b) Silicon
 - c) Lead
 - d) Germanium
 4. Which one of the following compounds is not formed?
 - a) XeOF_4
 - b) XeO_3
 - c) XeF_2
 - d) NeF_2
 5. ----- is called Caro's acid.
 - a) $\text{H}_2\text{S}_2\text{O}_8$
 - b) $\text{H}_2\text{S}_2\text{O}_7$
 - c) H_2SO_5
 - d) $\text{H}_2\text{S}_2\text{O}_6$
 6. The magnetic moment of CO^{3+} ion is ----- BM.
 - a) 5.92
 - b) 2.83
 - c) 4.89
 - d) 3.87
 7. Which is not a Lanthanoid?
 - a) Plutonium
 - b) Promethium
 - c) Dysprosium
 - d) Terbium
 8. The crystal with a metal excess defect is -----
 - a) FeO
 - b) NaCl
 - c) ZnO
 - d) AgBr
 9. The yellow colour in NaCl crystal is due to -----
 - a) Excitation of electrons in F centers
 - b) Reflection of light from Cl^- ion on the surface
 - c) Refraction of light from Na^+ ion
 - d) All of the above
 10. Which of the following fluoro compounds is most likely to behave as a Lewis base?
 - a) BF_3
 - b) PF_3
 - c) CF_4
 - d) SiF_4
 11. The pH of 0.01M NaOH solution is -----
 - a) 2
 - b) 9
 - c) 12
 - d) 14
 12. Which one of the following is the strongest acid
 - a) 3 - Nitrophenol
 - b) 4 - Chlorophenol
 - c) 4 - Nitrophenol
 - d) 2 - Nitrophenol
 13. **Assertion** : Phenol is more acidic than ethanol
Reason : Phenoxide ion is resonance stabilized
 - 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.
 14. The reagent used to distinguish between acetaldehyde and benzaldehyde is -----
 - a) Tollens reagent
 - b) Fehling's solution
 - c) 2,4 - Dinitrophenyl Hydrazine
 - d) Semicarbazide
 15. In Wolf Kishner reduction, ----- acts as a reducing agent and ----- as a catalyst.
 - a) sodium ethoxide & Hydrazine
 - b) Hydrazine & Sodium Ethoxide
 - c) Ketone & Hydrazine
 - d) Aldehyde & Hydrazine

PART - II

6x2=12

II. Answer any 6 questions. Question number 24 is compulsory.

16. What are the Limitations of Ellingham Diagram?
17. What is Burnt Alum?
18. Give the uses of Helium.

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19. Write a short note on Chromyl Chloride Test.
20. Explain briefly Seven Types of Unit Cell.
21. Write Arrhenius Equation and explains the Terms involved in it.
22. How will you prepare Urotropine? Draw its structure.
23. Explain Kolbe's reaction.
24. Write the expression for the solubility product of $\text{Ca}_3(\text{PO}_4)_2$

PART - III

6 x3=18

III. Answer any 6 questions. Question number 33 is compulsory.

25. Write a short note on van Arkel method
26. What are the differences between graphite & diamond?
27. Write note on Holme's signal?
28. What are Interstitial compounds? Give example
29. What is Lanthanoid contraction? Write its causes.
30. Explain common ion effect with an example.
31. Give three examples for First Order Reaction.
32. Explain the Mechanism of Aldol condensation reaction.
33. An organic compound (A) $\text{C}_2\text{H}_4\text{O}_2$ reacts with thionyl chloride gives compound (B) $\text{C}_2\text{H}_3\text{OCl}$. Compound (B) reacts with ethanol gives compound (C) with fruit smell. Find (A), (B) and (C). Write the suitable reactions.

PART - IV

5x5=25

IV. Answer all the questions.

34. a) Explain Zone refining process.
(OR)
- b) Complete the following reactions
 - i. $\text{SiCl}_4 + 4\text{C}_2\text{H}_5\text{OH} \rightarrow$
 - ii. $\text{Al}(\text{OH})_3 + 3\text{HCl} \rightarrow$
 - iii. $\text{B}_2\text{H}_6 + 6\text{CH}_3\text{OH} \rightarrow$
35. a) i) Prepare Bleaching Powder (2)
ii) Write the Molecular formula and structural formula for Phosphoric Acid (3)
(OR)
- b) Explain the Preparation of Potassium Dichromate.
36. a) i) Write note on Schottky Defect (3)
ii) Why Ionic Crystals are Hard and brittle? (2)
(OR)
- b) i) Explain Pseudo First order reaction with an example. (2)
ii) Write the Differences between order and Molecularity (3)
37. a) i) Write note on Lowry and Bronsted concept of acid & base? (2)
ii) Derive the relationship between P^{H} & P^{OH} (3)
(OR)
- b) Convert : i) Ethylene Glycol \rightarrow 1,4-Dioxane
ii) Glycerol \rightarrow Acrolein
iii) Phenol \rightarrow Phenolphthalein
38. a) i) Write any two tests for Carboxylic Acids. (2)
ii) Explain Popoff's rule with an example (3)
(OR)
- b) i) Write Rosenmund Reduction. (3)
ii) Write HVZ reaction. (2)

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