

Class : 12Register
Number**COMMON HALF YEARLY EXAMINATION-2024-25**

Time Allowed : 3.00 Hours]

CHEMISTRY

[Max. Marks : 70

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

1. Wolframite Ore is separated from Tinstone by the process of
 - a) Smelting
 - b) Calcination
 - c) Roasting
 - d) Electromagnetic Separation
2. The Geometry at which Carbon atom in diamond are bonded to each other is
 - a) Tetrahedral
 - b) Hexagonal
 - c) Octahedral
 - d) None of these
3. Most easily liquefiable gas is
 - a) Ar
 - b) Ne
 - c) He
 - d) Kr
4. **Assertion** : Ce^{4+} is used as an Oxidising agent in Volumetric Analysis.
Reason : Ce^{4+} has the tendency of attaining +3 Oxidation states.
 - 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.
5. Which among the following is a coloured complex due to d - d transition
 - a) $[\text{Zn}(\text{CN})_4]^{2-}$
 - b) $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$
 - c) $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$
 - d) All the above
6. Potassium has a bcc structure with nearest neighbour distance $4.52 \text{ \AA}$, its atomic weight is 39, its density will be
 - a) 915 kg m^{-3}
 - b) 2142 Kg m^{-3}
 - c) 452 Kg m^{-3}
 - d) 390 Kg m^{-3}
7. After 2 hours, a radioactive substance becomes $(1/16)$ th of original amount. Then the half life is
 - a) 60 minutes
 - b) 120 minutes
 - c) 30 minutes
 - d) 15 minutes
8. The pH of an aqueous solution is zero. The solution is
 - a) Slightly acidic
 - b) strongly acidic
 - c) neutral
 - d) basic
9. **Among the following cells**
 - I. Lalanche cell
 - II. Nickel - Cadmium cell
 - III. Lead storage battery
 - IV. Mercury cell

Primary cells are

 - a) I and IV
 - b) I and III
 - c) III and IV
 - d) II and III
10. Colloid used as eye lotion is
 - a) Milk of Magnesia
 - b) Penicillin
 - c) Colloidal gold
 - d) Argyol
11. Which of the following compounds on reaction with Methyl Magnesium Bromide will give tertiary alcohol
 - a) Benzaldehyde
 - b) Propanoic acid
 - c) Methyl propanoate
 - d) Acetaldehyde
12. Which one of the following reduces tollens reagent
 - a) Formic Acid
 - b) Acetic Acid
 - c) Benzophenone
 - d) None of these
13. Secondary Nitroalkanes react with nitrous acid to form
 - a) Red Solution
 - b) Blue Solution
 - c) Green solution
 - d) Yellow solution
14. Complete hydrolysis of Cellulose gives
 - a) L - Glucose
 - b) D- Fructose
 - c) D - Ribose
 - d) D - Glucose
15. Haloperidol is an -----
 - a) Antacid
 - b) Analgesic
 - c) Tranquilizer
 - d) Antibiotic

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

16. Give the basic requirement for Vapour Phase refining?
17. Give the uses of Silicons.

24. $\text{C}_6\text{H}_5\text{NO}_2 \xrightarrow{\text{Fe/HCl}}$ (A) $\xrightarrow[273\text{K}]{\text{NaNO}_2/\text{HCl}}$ (B)

273K

PART - III

25. How is Potash Alum Prepared?

26. Write a note on Chromyl chloride Test.

27. What are the Limitations of VB theory?

28. Write the Difference between rate and rate constant.

29. Write the Mechanism of Aldol condensation Reaction.

30. Give any Three difference between DNA and RNA.

31. Write a note on Vulcanization of Rubber.

32. Explain Ultrafiltration.

33. Is it possible to store copper Sulphate in an iron vessel for a long time?

Given : $E^{\circ}_{\text{Cu}^{2+}/\text{Cu}} = 0.34\text{V}$ and $E^{\circ}_{\text{Fe}^{2+}/\text{Fe}} = -0.44\text{V}$

PART - IV

IV. Answer all the questions.

5x5=25

- 34. (a) (i) Explain the Electrometallurgy of Aluminium. (5)**

(OR)

- (b) i) Why Fluorine is more reactive than other Halogens. (2)**

ii) Give two equations to illustrate the Chemical behaviour of Phosphine. (3)

35. (a) i) Write any two conditions for Catenation . (2)

ii) Describe the Preparation of Potassium Dichromate. (3)

(OR)

- (b) Write the main Assumptions of VBT.

36. (a) Calculate the percentage efficiency of Packing in case of body centered Cubic Crystal.(5)

(OR)

- (b) i) Write any two examples for 1 order reaction. (2)

ii) Explain about Standard Hydrogen Electrode. (3)

37. (a) Derive the expression for Ostwald's dilution law.

(OR)

- (b) i) Write Libermann's Nitroso test. (2)

- ii) How do you prepare the following compounds from Benzene diazonium Chloride? (3)

a) Biphenenyl

b) Fluoro Benzene

38. (a) i) What are Food Preservatives?(2)

- ii) What are the functions of Lipids in Living Organism? (3)**

(OR)

- (b) Compound 'A' of Molecular formula C_6H_5Cl on Treatment with NaOH at 633K and 300 bar pressure gives compound 'B'. 'B' on heating with 'Zn' dust to form 'C'. Compound 'B' on heating with ammonia in presence of Anhydrous Zinc Chloride to form D. Identify A, B, C and D, and Write the Equations. (5)