

Class : 11Register
Number**SECOND REVISION EXAMINATION - 2025**

Time Allowed : 3.00 Hours]

CHEMISTRY

[Max. Marks : 70

PART - I**15x1=15****I. Answer the following:**

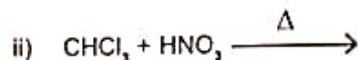
- 7.5 g of a gas occupies a volume of 5.6 litres at 0°C and 1 atm pressure. The gas is
a) NO b) N₂O c) CO d) CO₂
- Which of the following pairs of d-orbitals will have electron density along the axes?
a) d_{xy}, d_{yz} b) d_{xy}, d_{yz} c) d_{xy}, d_{yz} d) d_{xy}, d_{yz}
- The element with positive electron gain enthalpy is
a) Hydrogen b) Sodium c) Argon d) Fluorine
- The hardness of water can be determined by volumetrically using the reagent
a) Sodium thio sulphate b) Potassium Permanganate
c) Hydrogen Peroxide d) EDTA
- _____ is used in Cancer therapy.
a) ⁹⁰Sr b) ⁸⁷Sr c) ⁸⁶Sr d) ¹¹Be
- Maximum deviation from ideal gas is expected from
a) CH_{4(g)} b) NH_{3(g)} c) H_{2(g)} d) N_{2(g)}
- The values of ΔH and ΔS for a reaction are respectively 30 KJmol⁻¹ and 100 JK⁻¹mol⁻¹. Then the temperature above which the reaction will become spontaneous is
a) 300 K b) 30 K c) 100 K d) 20°C
- In a chemical equilibrium, the rate constant for the forward reaction is 2.5 x 10² and the equilibrium constant is 50. The rate constant for the reverse reaction is
a) 11 b) 5 c) 2 x 10² d) 2 x 10⁻³
- Assertion :** An ideal solution obeys Raoult's law.
Reason : In an ideal solution, solvent-solvent as well as solute - solute interactions are similar to solute - solvent interactions.
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.
- The bond angle of ammonia is _____
a) 109° 28' b) 107° 18' c) 104° 5' d) None of these
- Sodium nitroprusside reacts with sulphide ion to give purple colour due to the formation of
a) [Fe(CN)₅NO]²⁻ b) [Fe(NO)₅CN]⁺ c) [Fe(CN)₅NOS]⁴⁻ d) [Fe(CN)₅NOS]³⁻
- Homolytic fission of covalent bond leads to the formation of
a) Electrophile b) Nucleophile c) Carbocation d) Free Radical
- Which of the following compounds will not undergo Friedel - Crafts reaction easily?
a) Nitrobenzene b) Toluene c) Cumene d) Xylene
- Silver propionate when refluxed with Bromine in carbon tetra chloride gives
a) Propionic acid b) Chloroethane c) Bromoethane d) Chloropropane
- _____ ion deficiency in drinking water causes tooth decay.
a) Chloride b) Bromide c) Iodide d) Fluoride

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

- State Hund's rule.
- What is screening effect?
- Explain the preparation of hydrogen using electrolysis?
- What is lattice energy?

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20. Define π - Bond?
 21. Mention the various methods of chromatography?
 22. Explain Friedel - Craft's reaction?
 23. State law of mass action?
 24. Complete the following reactions?

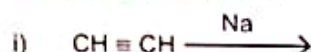


PART - C

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

6x3=18

25. Calculate the equivalent mass of Potassium hydroxide.
 26. Compare the structure of H_2O and H_2O_2 ?
 27. Complete the reactions.



28. It takes 192 sec for an unknown gas to diffuse through a porous wall and 84 sec for N_2 gas to effuse at the same temperature and pressure. What is the molar mass of unknown gas?
 29. Explain coordinate covalent bond with suitable example?
 30. Identify the functional group in the following compounds.
 a) Acetaldehyde b) Dimethyl ether c) Methylamine
 31. Explain electromeric effect?
 32. Explain the preparation of the following compounds. i) Biphenyl ii) Freon - 12
 33. The depression in freezing point is 0.24 K obtained by dissolving 1g NaCl in 200g water. Calculate Vant Hoff factor. The molal depression constant is 1.86 K Kg mol⁻¹.

PART - D

IV. Answer all the questions.

5x5=25

34. a) i) Explain Metal displacement reactions? (2)
 ii) Calculate the oxidation number of underlined atoms of the following. (3)
 i) $\underline{\text{C}}$ in CO_2 ii) $\underline{\text{H}}$ in H_2SO_4 iii) $\underline{\text{Mn}}$ in MnO_4^-
 (OR)
 b) i) Give the electronic configuration of Manganese and Chromium? (2)
 ii) State and explain Pauli's exclusion principle. (3)
 35. a) i) Ionisation potential of Nitrogen is greater than that of Oxygen. Explain? (2)
 ii) Calculate the effective nuclear charge of 3P electron in Aluminium. (3)
 (OR)
 b) i) Why alkaline earth metals are harder than alkali metals? (2)
 ii) Write any three uses of hydrogen? (3)
 36. a) State the various statements of second law of Thermodynamics? (5)
 (OR)
 b) Deduce the Vant Hoff equation. (5)
 37. a) i) What is meant by hybridisation? (2)
 ii) What is molal depression constant? Does it depend on the nature of the solute? (3)
 (OR)
 b) How will you detect the presence of carbon and hydrogen in an organic compound? (5)
 38. a) Write short notes on Ortho and Para directors in aromatic electrophilic substitution reaction? (5)
 (OR)
 b) i) What are biodegradable and non-biodegradable pollutants? (2)
 ii) Why halo arenes do not undergo nucleophilic substitution reaction readily? (3)

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