

| | | |
|-----------------------------------|--------------------|--------------------------|
| FIRST REVISION TEST - 2024 | 11 - STD | |
| CHEMISTRY | Marks 70 | Time 3.00 Hrs. |

YouTube/ Akwa Academy PART - I**15 x 1 = 15****I. Choose the correct answer.**

- The flame colour of calcium in the bunsen burner
a) Brick Red b) Crimson Red c) Violet d) Blue
- The name of $C_2F_4Cl_2$ is
a) Freon - 112 b) Freon - 113 c) Freon - 114 d) Freon - 115
- Which of the following third abundant element present in sea water
a) Be b) Ba c) Ca d) Mg
- Heterocyclic compound
a) phenol b) pyridine c) Azuline d) cycle propane
- Which one of the following represents 180g of water?
a) 5 moles of water b) 90 moles of water
c) $6.022 \times 10^{23}/180$ molecules of water d) 6.022×10^{24} molecules of water
- Which of the following pairs of elements exhibit diagonal relationship?
a) Be and Mg b) Li and Be c) Be and B d) Be and Al
- Tritium nucleus contains
a) $1p + 0n$ b) $2p + 1n$ c) $1p + 2n$ d) none of these
- If temperature and volume of an Ideal gas is increased to twice its values, the initial pressure p becomes
a) $4p$ b) $2p$ c) p d) $3p$
- Choose the correct answer
a) S - state function, G-path function b) S - state function, G - state function
c) S - Path function, G - state function d) S - state function, G - path function
- In a chemical equilibrium, the rate constant for the forward reaction is 2.5×10^2 and the equilibrium constant is 50. The rate constant for the reverse reaction is
a) 11.5 b) 5 c) 2×10^2 d) 2×10^{-3}
- Which of the following examples shows positive deviation for ideal solutions.
a) CCl_4 & $CHCl_3$ b) CH_3COCH_3 & $CHCl_3$
c) $CHCl_3$ & $C_2H_5OC_2H_5$ d) $CHCl_3$ & C_6H_6
- Which of the following compounds will not undergo Friedel-Crafts reactions easily?
a) Nitro benzene b) Toluene c) Cumene d) Xylene
- Assertion : Tertiary carbocations are generally formed more easily than primary carbocations ions
Reason : Hyper conjugation as well as inductive effect due to additional alkyl group stabilizes tertiary carbonium ions
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.
- Which ion deficiency in drinking water causes tooth decay?
a) Chloride b) fluoride c) Calcium d) Magnesium
- Which of the following reagent is helpful to differentiate ethylene dichloride and ethylidene chloride?
a) Zn / methanol b) KOH / ethanol c) aqueous KOH d) $ZnCl_2$ / Conc HCl

PART - II

Answer any six questions. Q.No.24 is compulsory

6 x 2 = 12

16. How is plaster of paris prepared?
17. Define Gram Equivalent mass
18. What is green chemistry?
19. State Pauli exclusion principle.
20. What is the relation between K_p and K_c . Give one example for K_c is equal to K_p .
21. State Henry's law
22. Which bond is strongest σ or π ? Why?
23. Write the reaction of chloroform with oxygen in the presence of sunlight.
24. The equilibrium constant of a reaction is 10. What will be the sign of ΔG ? Will this reaction be spontaneous.

PART - III

Answer any six questions. Q.No.33 is compulsory

6 x 3 = 18

25. Calculate the equivalent mass of H_2SO_4 ?
26. Explain the time independent schrodinger wave equation?
27. Explain the periodic trend of ionisation potential.
28. Explain the exchange reactions of deuterium.
29. Derive the ideal gas equation.
30. In an automobile engine burns petrol at a temperature of 1089K and if the surrounding temperature is 294K. Calculate its maximum possible efficiency.
31. Describe the reactions involved in the detection of Nitrogen in an organic compound by Lassaigne method.
32. Explain electromeric effect.

33. Complete the reactions.
 - i) $CH_2=CH_2 + H_2 \xrightarrow[298K]{Ni} ?$
 - ii) $CH_2=CH_2 + H_2O + (O) \xrightarrow{\text{கெயிர் கற்றணி}} ?$
 - iii) $C_6H_5Cl + Mg \xrightarrow{THF} ?$

PART - IV

Answer all the questions

5 x 5 = 25

34. a) Calculate the oxidation number of the element.
 - i) CO_2 ii) $K_2Cr_2O_7$ iii) $KMnO_4$ iv) H_2SO_4 v) $S_2O_7^{2-}$ (OR)
 - b) i) How many orbitals are possible for $n = 4$
 - ii) What is effective nuclear charge?
35. a) i) Define ortho, para hydrogen? How do you convert para hydrogen into ortho hydrogen.
- ii) Give the uses of Magnesium. (OR)
- b) Derive the values of critical constants in terms of Vander Waals constants.
36. a) Explain an indirect method to calculate lattice enthalpy of sodium chloride. (OR) [YouTube/ Akwa Academy](#)
- b) i) Derive the equilibrium constant K_p and K_c for the formation of HI.
- ii) Define the term 'Isotonic solution'.
37. a) i) Describe Fajan's rule.
- ii) Define Bond Order (OR)
- b) i) Explain Geometrical isomerism in alkene by considering 2-butene as an example.
- ii) Identify the functional group in the following compounds.
 - A) Alcohol B) Dimethyl Ether c) Methyl Amine d) Acetone
38. a) Describe conformations of n - Butane (OR)
- b) i) Mention the standards prescribed by BIS for quality of drinking water.
- ii) Preparation of DDT.