

Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

(SECTION - I)

2. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- Define "Covalent Hydride" with one example.
- Oxides of non-metals show acidic behavior, give reason.
- Why 2% of gypsum is added in cement?
- Aluminium is not found in free state, give reason.
- CO_2 is gas at room temperature while SiO_2 is a solid, give reason.
- What is "Borax"?
- Write two reactions in which H_2SO_4 acts as oxidizing agent.
- Write two differences between Oxygen and Sulphur.
- Write two methods for the preparation of NO_2 .
- What are phosphatic fertilizers?
- What do you mean by "Setting of Cement"?
- What is role of chlorofluoro carbons in "Destruction of Ozone"?

3. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- Define the term "Tautomerism" with an example.
- Give name and reaction of alkenes which is used to indicate the position of double bond.
- How is ethyne converted into:
 - Ethanal
 - Benzene
- How is benzene converted into m-chloronitro-benzene?
- How will you convert phenol into benzene?
- How is ethene converted into 1-butanol?
- Give the reaction which is more useful for the preparation of alkyl chlorides.
- Give the structural formulae of following compounds:
 - Glycerol
 - Lactic acid
- How is ethyl iodide prepared from diethyl ether?
- What is "Peptide Linkage"?
- How is amino acid prepared by strecker synthesis?
- How is ethanol converted into ethanoic acid?

4. Write short answers to any SIX questions.

(2 × 6 = 12)

- Why HF is weaker acid than HCl ?
- Justify that Cl_2O_7 is the anhydride of per-chloric acid.
- Complete & balance the following equations:
 - $\text{XeF}_4 + \text{NH}_3 \Rightarrow$
 - $\text{XeF}_6 + \text{SiO}_2 \Rightarrow$
- Define "Paramagnetism & Diamagnetism".
- Distinguish chemically between "Acetone" and "Ethyl alcohol".
- Convert methanol to ethanol.
- Cellulose is not digested by human intestinal track justify.
- Point out difference between "Cellulose" and "Starch".
- How radiations affect the activity of enzyme?

(SECTION - II)

- State Mendeleev's periodic law and write down the improvements made in the Mendeleev's table. 4
 - Write down eight points in which lithium differs from other elements of group IA. 4
- Explain the following with two examples each: 2+2
 - Ligand
 - Co-ordination number
 - What is smog? Explain the pollutants which are main cause of photochemical smog. 1+3
- What is chain isomerism? Draw all the possible skeletal formulae of hexane. 1+3
 - Write two reactions for each to justify benzene as saturated and as unsaturated compound. 2+2
- Write Kolbe's method of preparation of ethyne along with its mechanism. 4
 - How does ethanol react with: 4
 - PCl_3
 - SOCl_2
 - Na
 - CH_3COOH
- How $\text{C}_2\text{H}_5\text{MgBr}$ reacts with the following: 4
 - H_2O
 - CO_2
 - HCHO
 - CH_3COCH_3
 - Write one laboratory and one industrial method for preparation of acetaldehyde. 4