

SECTION – I**2. Write short answers to any EIGHT (8) questions :****16**

- (i) Why size of cation is smaller than its parent atom? Give example also.
- (ii) Why diamond is a non-conductor while graphite is conductor?
- (iii) What is lime mortar?
- (iv) Write down the chemical formula of Sylvite and Natron.
- (v) Find the value of 'x' in the complex of Fe (II), $[Fe(CN)_6]^x$.
- (vi) Under what conditions does Al corrode?
- (vii) Why R-I is more reactive than R-F?
- (viii) Define leaving group with two examples.
- (ix) Differentiate between homopolymer and terpolymer. Give examples.
- (x) Write down the structures of epichlorohydrin and diphenylol propane.
- (xi) Write down any two characteristics of lipids.
- (xii) Write any four essential qualities of a good fertilizer.

3. Write short answers to any EIGHT (8) questions :**16**

- (i) Why does aqua regia dissolve platinum?
- (ii) How does NO_2 act as an oxidizing agent?
- (iii) Why HF is weaker acid than HBr?
- (iv) Which halogen is used as an antiseptic?
- (v) What is antiknocking agent and give its disadvantage?
- (vi) What is tautomerism? Give example.
- (vii) How to prepare formaldehyde from ethene?
- (viii) How does propyne react with : (a) 10% H_2SO_4 in the presence of $HgSO_4$
(b) Alkaline $KMnO_4$
- (ix) How to prepared alkane from carbonyl compounds?
- (x) How does acid rain affect our environment?
- (xi) How is ozone layer depleted by $CFC\ell_3$?
- (xii) What are the harmful effects of chlorination of H_2O ?

4. Write short answers to any SIX (6) questions :**12**

- (i) Give four uses of aluminium.
- (ii) What is meant by the term "inert pair"? Give brief description.
- (iii) What is water glass? How is it prepared from sodium carbonate?
- (iv) What happens when benzene is heated with conc. H_2SO_4 at $250^\circ C$?
- (v) Why is the boiling point of ethanol higher than that of diethyl ether?

(Turn Over)

4. (vi) Write structural formulas of acetophenone and picric acid.
- (vii) How is acetaldehyde prepared from ethylene and acetone from calcium acetate?
- (viii) How is acetic acid prepared from ethanol?
- (ix) What is the difference between acidic and basic amino acids? Give examples.

SECTION – II

Note : Attempt any **THREE** questions.

5. (a) Mention four improvements made in Mendeleev's periodic table by Moseley. 4
- (b) Describe the commercial preparation of sodium by Down's cell. 4
6. (a) Describe relative reactivities of the halogens as oxidizing agents. 4
- (b) Describe phosphatic fertilizers and potassium fertilizers. 4
7. (a) Explain geometric isomerism with suitable examples and also give necessary condition for compound to show geometric isomerism. 4
- (b) Give four equations with condition for the preparation of alkyl halides from alcohols. 4
8. (a) Discuss catalytic oxidation of methane. 4
- (b) Describe the reaction of ethanal and acetone with following : 2,2
 - (i) Hydroxyl amine.
 - (ii) Phenyl hydrazine
9. (a) Write down any two reactions in which benzene behaves as if it is a saturated hydrocarbon and two reactions in which it behaves as if it is unsaturated. 2,2
- (b) How will you prepare (i) Bakelite (ii) Phenyl acetate from phenol. 2,2

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