

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

- (i) Define periodic table. How many groups and periods are present in it?
- (ii) Define (i) Mendeleev's periodic law (ii) Modern periodic law.
- (iii) Differentiate between alkali metals and alkaline earth metals. Give one example in each case.
- (iv) Write down the formulas of the following minerals : (i) Borax (ii) Colemanite
- (v) Write down four uses of borax.
- (vi) Define chemical garden.
- (vii) Write down two similarities and two dissimilarities of oxygen and sulphur.
- (viii) Write four differences of nitrogen from its family.
- (ix) Why does aqua regia dissolve gold and platinum?
- (x) Write down four essential qualities of a good fertilizer.
- (xi) What are raw materials for the manufacture of cement?
- (xii) Define environmental chemistry. Name components of environment.

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

- (i) Define organic chemistry. What is vital force theory?
- (ii) Write down structural formulas of the following :
(a) 2-Methyl propane (b) Neopentane (c) 3-Ethyl pentane (d) 2,2 – Dimethyl pentane
- (iii) Write down four uses of methane.
- (iv) Define aromatic hydrocarbons. How they are classified?
- (v) What happens when (a) Benzene is heated with conc. H_2SO_4 at $250^\circ C$.
(b) Chlorine is passed through benzene in sunlight.
- (vi) Define alkyl halides. What are primary alkyl halides? Give one example.
- (vii) Define Grignard reagent. Give one example.
- (viii) How ethanal is prepared from Molasses? Write chemical reaction as well.
- (ix) Define : (a) Absolute alcohol (b) Methylated spirit (c) Rectified spirit.
(d) Denaturing of alcohol.
- (x) Write down the structural formulae of the following :
(a) Propanoic acid (b) Oxalic acid (c) Benzoic acid (d) Acetic anhydride
- (xi) How acetic acid is converted into the methane?
- (xii) Define amino acids. Give two examples.

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

- (i) What is iodized salt?
- (ii) Why iodine has metallic luster?
- (iii) Give four applications of noble gases.
- (iv) What are interstitial compounds?
- (v) How will you convert ethanal into lactic acid?

(Turn Over)

4. (vi) How will you distinguish between ethanal and benzaldehyde? Give respective chemical reaction.
- (vii) How is polyvinyl chloride prepared and give its uses?
- (viii) How is nylon – 6, 6 prepared?
- (ix) What is function of DNA and RNA?

SECTION – II

Note : Attempt any **THREE** questions.

5. (a) Write eight points to describe role of lime in industries. 4
- (b) What are hydrides, describe different types of hydrides? 4
6. (a) Define corrosion. Explain electrochemical theory of corrosion. 4
- (b) How water is disinfected by chlorine? Write down harmful effects of chlorination of water. 4
7. (a) What is orbital hybridization? Explain sp^3 hybridization with an example. 4
- (b) Discuss atomic orbital treatment to explain structure of benzene. 4
8. (a) How can following conversions be carried out : 4
- (i) Ethane $\rightarrow$ Methane (ii) Methane $\rightarrow$ Ethane
- (b) How can ethers be prepared by Williamsons method and from Ag_2O ? 2,2
9. (a) How does ethyl magnesium bromide react with : 4
- (i) CO_2 (ii) H_3C-CHO (iii) H_2O (iv) CH_3OH
- (b) Describe with mechanism aldol condensation reaction. 4

191-219-I-(Essay Type)-41000