

CHEMISTRY (Subjective) GROUP - I

Time: 02:40 Hours

Marks: 68

SECTION – I**2. Write short answers to any EIGHT parts.**

16

- (i) How will you convert boric acid into borax and vice versa?
- (ii) Write the chemical formula of these minerals: (a) borax (b) Colemanite
- (iii) What are the common properties of group IVA elements? (any four)
- (iv) What is Wurtz-fitting reaction?
- (v) How is glyoxal produced from benzene?
- (vi) Define aromatic compounds with two examples.
- (vii) What is condensation polymerization?
- (viii) How can you differentiate between glucose and fructose?
- (ix) Write any four uses of lipids?
- (x) What is dissolved oxygen?
- (xi) How do CO_2 and SO_2 cause acid rain?
- (xii) How do pesticides affect living organism?

3. Write short answers to any EIGHT parts.

16

- (i) Write the functional group of alkanone and alkanolic acid with one example in each case.
- (ii) What do you know about functional group isomerism? Give one example.
- (iii) Give structural formula of alkene expected to be formed by dehydrohalogenation of 1-chloropentane.
- (iv) Starting from ethene prepare ethyne.
- (v) How is acetylene converted into chloroprene?
- (vi) How does Grignard reagent react with methanal?
- (vii) Starting from ethyl chloride prepare (a) n-butane (b) ethane.
- (viii) Write the names of woody raw materials of paper industry.
- (ix) What are the four essential qualities of a good fertilizer?
- (x) Write the allotropic forms of phosphorus.
- (xi) Write reaction taking place in contact tower for the manufacturing sulphuric acid.
- (xii) Write the ring test for the confirmation of nitrate ion in solution.

4. Write short answers to any SIX parts.

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- (i) What are ligands? Give one example.
- (ii) Draw the geometry of PCl_5 .
- (iii) What is chromyl chloride test?
- (iv) Define fermentation. Give one example.
- (v) What is Lucas Test?
- (vi) Why phenol is acidic but alcohol is not?
- (vii) Give mechanism of addition of NH_3 with acetone.
- (viii) What is iodoform test? Give its use.
- (ix) What are amino acids? Give their general formula.

SECTION – II Attempt any THREE questions. Each question carries 08 marks.

5. (a) Discuss the position of hydrogen with group I-A elements. 04
(b) Write a detailed note on the commercial preparation of sodium by Down's cell. 04
6. (a) Write eight applications of noble gases. 04
(b) Describe the process of digestion in paper industry. 04
7. (a) Explain any four features of organic compounds. 04
(b) Explain the structure of benzene on the basis of molecular orbital treatment. 04
8. (a) Convert: (i) Ethyne into oxalic acid (ii) Propyne into acetone 02,02
(b) What are alkyl halides? How alkyl halides are prepared from alcohol by three different reactions. 01,03
9. (a) How does acetaldehyde react with the following reagents? 01,01,01,01
(i) $\text{C}_2\text{H}_5\text{MgI}$ (ii) HCN (iii) NaHSO_3 (iv) dil NaOH
(b) Discuss two methods of preparation of α -amino acids. 04