

Assignment I (Unit X)

(1st April to 15th April)

Class XII

Q1. How will you convert the following:

- a) Benzene to diphenyl
- b) Isopropyl chloride to n-propylbromide
- c) Acetylene to propyne
- d) Methyl bromide to acetic acid
- e) Chlorobenzene to p-nitrophenol

Q2. What happens when:

- a) Ethylbromide is reacted with AgCN.
- b) Chloroform reacts with aniline in the presence of alcoholic KOH.
- c) Benzene diazoniumchloride reacts with HCl in the presence of Cu powder.

Q3. Distinguish between:

- a) Chlorobenzene and benzyl chloride
- b) Ethyl alcohol and propyl alcohol
- c) Bromoethane and Chloroethane

Q4. With alcoholic potash compound A (C_3H_7Br) gives B(C_3H_6). On oxidation B gives acetic acid, CO_2 and water. With HBr, it gives D, an isomer of A. Identify compounds A to D.

Q5. Explain why

- a) Chlorine although electron withdrawing, yet is o- and p- directing in electrophilic aromatic substitution reactions.
- b) 2-Bromobutane is chiral whereas Bromobutane is achiral.

Q6. Give the IUPAC names of the following compounds:

- a) $CHF_2CBrClF$
- b) $(CH_3)_2C = CHCH_2Br$
- c) $CH_3C(p\text{-Cl-C}_6H_4)_2CH(Br)CH_3$

Q7. Write all the possible structures for the molecular formula $C_5H_{11}Br$. Give their IUPAC names and classify the isomers as 1°, 2° or 3°. Which of these are optically active?

Q8. Predict the order of reactivity of four isomeric iodobutane in S_N1 and S_N2 reactions.

Q9. Haloalkanes undergo nucleophilic substitution reactions while haloarenes undergoes electrophilic substitution reactions. Explain.

Q10. The treatment of alkyl chlorides with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Why?