CHEMISTRY CHAPTER 10(XII) (Alkyl Halides)

Short Questions:

1. Write IUPAC names of:
   a. Carbon tetrabromide **b.** Chloroform
   c. Methylene chloride **d.** Methyl iodide
2. Discuss E_2 mechanism.
3. What are elimination reactions? Give example of E1 reaction.
4. How will you convert $CH_3—CH_3$ to $(CH_3\text{-}CH_2)_4NBr$?
5. Give two preparation methods of alkyl halides from alcohols.
6. Convert Ethyl bromide into**:**
   i. Ethane **ii.** n-Butane
7. Write reactions of Ethanol with **i)** PBr_3 **ii)** PCl_3
8. Define Nucleophile and electrophile. Give one example in each.
9. What is Wurtz's synthesis?
10. Using Ethyl bromide as starting material, how would you prepare?
    i. Propanoic acid **ii.** Ethane
11. What is the nature of C-Mg bond in R-Mg-X?
12. During S_N1 reaction, what is the significance of first step?
13. What is leaving group and substrate?
14. Prepare from Ethyl bromide :
    i. Ethyl thioalcohol **ii.** Ethyl acetate
15. What are primary and tertiary alkyl halides? Give one example in each.
16. $SOCl_2$ is the best reagent to get alkyl halide from alcohol. Write equation including solvent also.

OR

Describe the best method for the preparation of alkyl halides.

17. Give reaction of Grignard's reagent with CO_2 followed by hydrolysis in acidic medium.
18. Give mechanism of SN1.
19. Starting from ethyl bromide how will you prepare Ethane and Ethene.
20. How will you prepare diethyl amine from ethyl bromide?
21. Define tertiary alkyl halide. Give example.
22. Prepare following compounds from ethyl magnesium bromide**.**
    a. 1-Propanol **b.** Propanoic acid
23. What do you by leaving group? Give an example.
24. How is anti-knocking agent prepared from alkyl halide**?**
25. What is meant by the term 'Steric hindrance'?

LONG QUESTIONS:

1. Prepare Ethyl chloride from alcohols by using three different reagents.
2. Write reactions of Grignard's reagent with following.
   a. Water **b.** Ammonia **c.** CO_2 **d.** Alcohol
3. Write products are formed when following compounds are treated with ethyl magnesium bromide followed by hydrolysis in the presence of acid.
   a. HCHO **b.** $CH_3\text{-}CHO$ **c.** $(CH_3)_2CO$ **d.** Cl-CN
4. Describe briefly the two possible mechanisms of B-Elimination reactions.
5. Discuss S_N2 mechanism of alkyl halide in detail.
6. Describe S_N1 reaction of alkyl halide in detail.
7. What are S_N reactions? Differentiate between S_N1 and S_N2 reactions.

OR

Give four points of difference between S_N1 and S_N2 reactions.

8. How does Ethyl magnesium bromide react with the following.
   a. CO_2 **b.** $CH_3\text{-}CO\text{-}CH_3$
   b. How will you bring about the following conversions from an alkyl halide**?**
   c. Deiethyl ether **b.** Ethyl thioalcohol
   d. Ethyl acetate **c.** Nitroethane