CHAPTER 10

ALKYL HALIDE

MULTIPLE CHOICE QUESTIONS

1. Which of the following alkyl halide is the most reactive towards the attacking nucleophile:

(a) CH_3F **(b)** CH_3Cl

(c) CH_3Br **(d)** CH_3I

2. Which of the following is not nucleophile:

(a) H_2O **(b)** H_2S

(c) BF_3 **(d)** NH_3

3. Carbocation is a/an:

(a) Electrophile **(b)** Nucleophile

(c) Free radical **(d)** Group of atoms

4. 1-bromobutane on reaction with alcoholic potassium hydroxide gives:

(a) 1-butanol **(b)** 1-butene

(c) 2-butene **(d)** 1-butyne

5. S_N2 reaction can be best carried out with:

(a) Primary alkyl halide **(b)** Secondary alkyl

(c) Tetiary alkyl halide **(d)** All of above

6. For which mechanism the first step involved is the same:

(a) E_1 and E_2 **(b)** E_2 and SN_2

(c) SN_1 and E_2 **(d)** E_1 and SN_1

7. In the transition state of S_N2 mechanism reaction with alkhyl halides, which of the following orbital hybridization is involved:

(a) sp^3 **(b)** sp^2

(c) sp **(d)** dsp^2

8. Which of the following factors does not affect the S_N1 rate is:

(a) Nucleophilicity of the attacking nucleophile

(b) Stability of the carbonium ion

(c) Solvent system

(d) The nature of leaving group

9. In β-elimination reaction, nucleophile attacks on:

(a) α-hydrogen **(b)** β-hydrogen

(c) Hydrogen **(d)** α-carbon

10. The substances which donates a pair of electron to electrophile are called:

(a) Electrophile **(b)** Nucleophile

(c) Lewis acid **(d)** Dibasic acid

11. Which one the following will be present at the position of letter B

$$C_2H_5Br \xrightarrow[\text{Alcohol}]{KOH} A \xrightarrow{H_2/Pt} B$$

(a) Ethyl alcohol **(b)** Acetaldehyde

(c) Ethene **(d)** Ethane

12. In unimolecular reactions, the reaction completes in:

(a) One step **(b)** Two steps

(c) Three steps **(d)** None of these

13. Grignard's reagent reacts to form alkane with:

(a) Water **(b)** Ammonia

(c) Ethanol **(d)** All of these

14. Grignard's reagents produce primary alcohol with:

(a) Formaldehyde **(b)** Epoxide

(c) Acetaldehyde **(d)** Both (a) and (b)

15. Carbanians are:

(a) Electrophile **(b)** Nucleophile

(c) Free radical **(d)** Group of atoms

16. Which substance is used to convert alcohol to alkyl halide:

(a) $SOCl_2$ **(b)** PCl_3

(c) $HCl + ZnCl_2$ **(d)** All of these

17. Ethyl bromide when reduced with nascent hydrogen the product will be:

(a) Ethyl alcohol **(b)** Ethane

(c) Butane **(d)** Propane

18. When bromomethane is hydrolyzed by aqueous NaOH solution which ion brings about the first stage of substitution:

(a) Na^+ **(b)** OH^-

(c) Anyone **(d)** No reaction

19. In primary alkyl halide the halogen atom is attached to a carbon which is further attached to how many carbon atoms:

(a) One **(b)** Two

(c) Three **(d)** Nil

20. Which one of the following is not associated with S_N2 mechanism:

(a) 100% inversion of configuration

(b) 2^{nd} order kinetics

(c) Tetiary alkyl halides

(d) Change of hybridization from sp^3 to sp^2 in transition state

21. Grignard reagent is reactive due to:

(a) The presence of halogen atom **(b)** The presence of Mg atom

(c) The polarity of C – Mg bond **(d)** Electrophilic carbon

22. Reaction of C_2H_5MgBr with CO_2 is an example of:

(a) Electrophilic substitution **(b)** Nucleophilic substitution

(c) Electrophilic addition **(d)** Nucleophilic addition

23. Which one of the following is not a nucleophile:

(a) $CH_3 - NH_2$ **(b)** $CH_2 = CH_2$

(c) OH^- **(d)** CH_3^+

24. Acetic acid can be obtained from CH_3MgI by treatment with:

(a) H_2O **(b)** $ClNH_2$

(c) CO_2 **(d)** HCHO

answers

1.	(d)	**2.**	(c)	**3.**	(a)	**4.**	(b)	**5.**	(a)
6.	(d)	**7.**	(b)	**8.**	(a)	**9.**	(b)	**10.**	(b)
11.	(d)	**12.**	(b)	**13.**	(d)	**14.**	(d)	**15.**	(b)
16.	(d)	**17.**	(b)	**18.**	(d)	**19.**	(a)	**20.**	(c)
21.	(c)	**22.**	(d)	**23.**	(d)	**24.**	(c)		