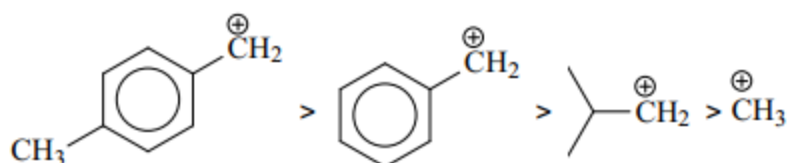


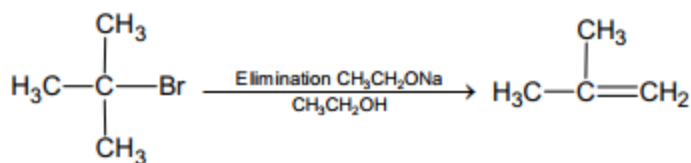
## CHAPTER - 18

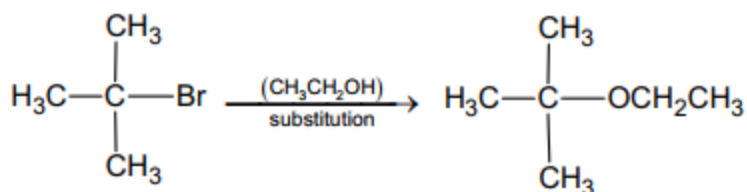
# HALOALKANES AND HALOARENES

1. 3 Order of reactivity with alcohols is  $\text{HI} > \text{HBr} > \text{HCl}$
2. 2 Finkelstein reaction  
 $-\text{Cl}$  is better leaving group than  $-\text{F}$
3. 4 Reagents (1), (2) and (3) are suitable for preparation of bromo, chloro and fluorobenzene, respectively
4. 1  $\text{C}-\text{X}$  bond in aryl halides and vinylic halides are much stronger, thus difficult to cleave.
5. 3 Reactivity of alkyl halides in  $\text{S}_{\text{N}}1$  reactions is governed by carbocation stability. Stability of carbocations follows the order

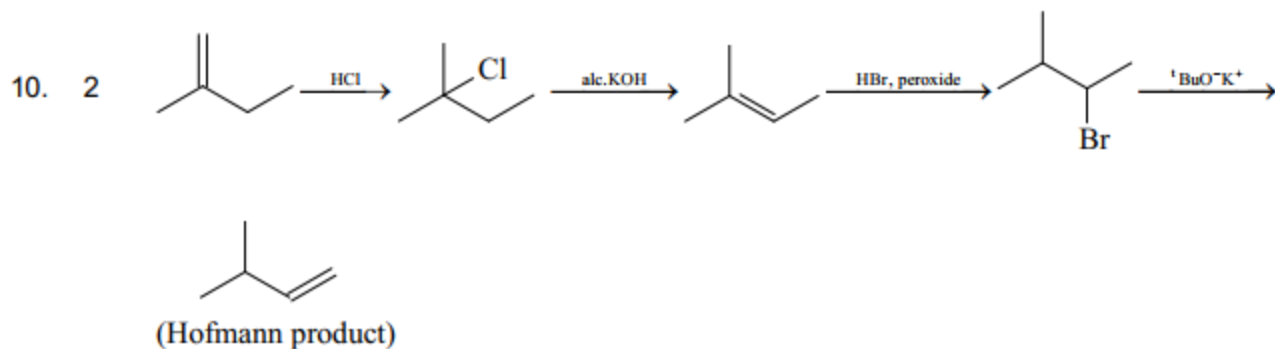


6. 2 Reactivity of alkyl halides in  $\text{S}_{\text{N}}2$  reactions decreases with increase in steric hindrance  
 Least hindered alkyl halide is (2)
7. 2 aq. KOH does nucleophilic substitution; alc. KOH does elimination
8. 3



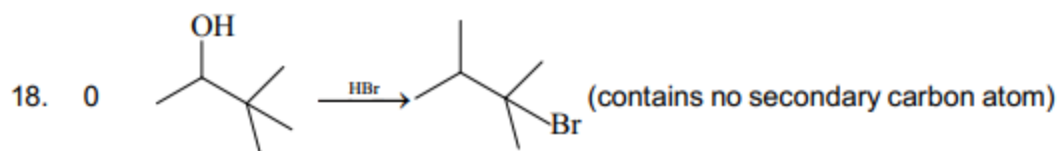


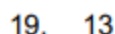
9. 4 Alkyl halide reacts with KCN to form nitriles whereas it reacts with AgCN to form isonitriles



11. 4 Optically active haloalkanes (i and iv) undergo racemisation
12. 1 (IV) can give aromatic product, thus its reaction will be the fastest
13. 4  $-\text{NO}_2$  placed at ortho and para positions of chlorobenzene promotes the reaction by withdrawing electrons by  $-\text{R}$  effect.
14. 4 Dipole moment follows the order,  $\text{CH}_3-\text{Cl} > \text{CH}_3-\text{F} > \text{CH}_3-\text{Br} > \text{CH}_3-\text{I}$
15. 1 Phosgene (Carbonyl chloride)
16. 3 Pent-1-ene and cis/trans-pent-2-ene are the products
17. 6 "Yellow" precipitate

Compounds 3, 5, 7, 8, 9 and 10 would give yellow precipitate of AgBr with  $\text{AgNO}_3$





Q contains six  $sp^2$  carbons, R contains seven  $sp^2$  carbons



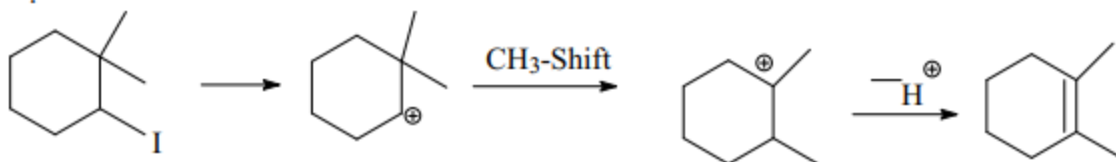
The number of carbon atom in (F) is 4.

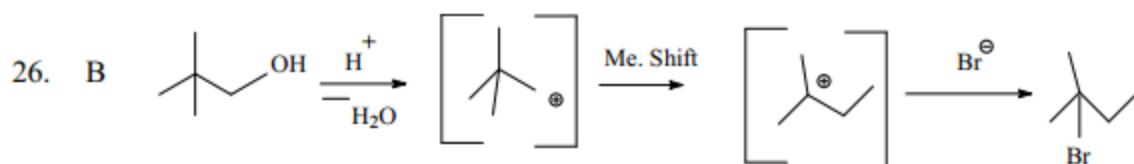
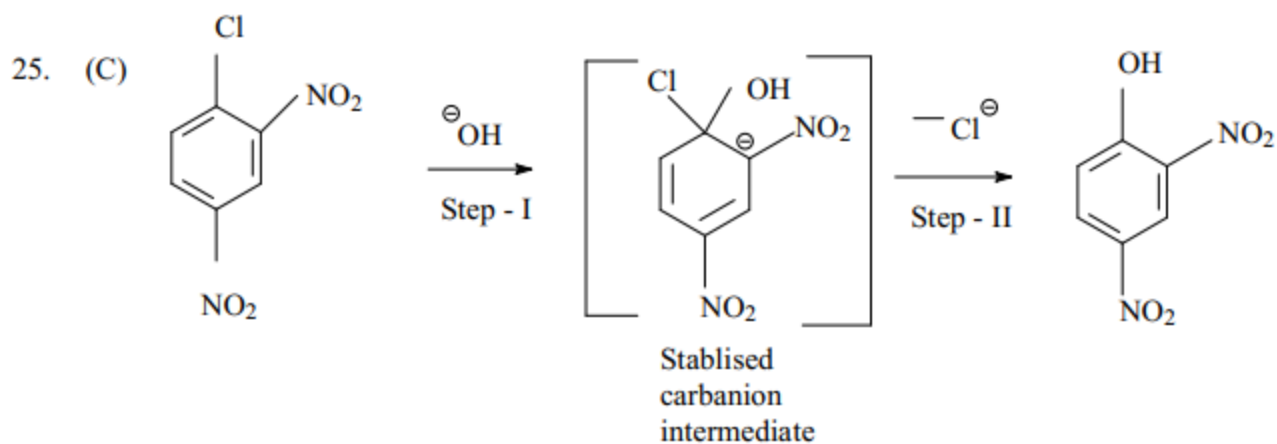
21. 3



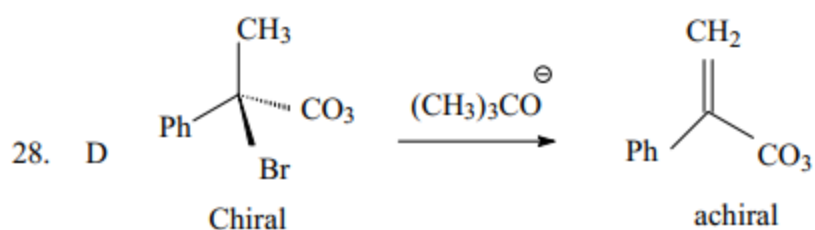
23. A

24. 4



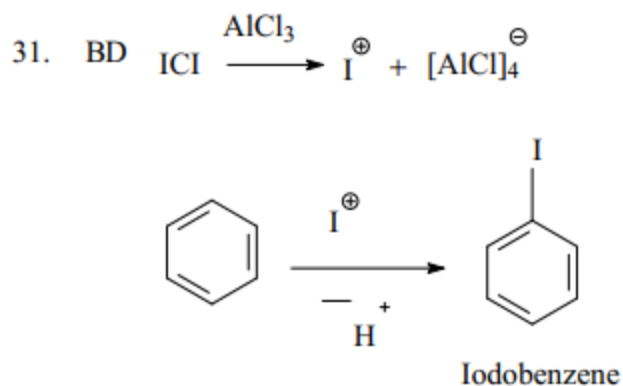


27. C  $S_N2$  reactions are favoured by polar aprotic solvents (ex - DMSO)

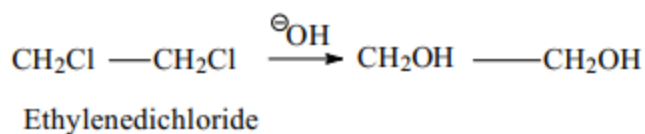
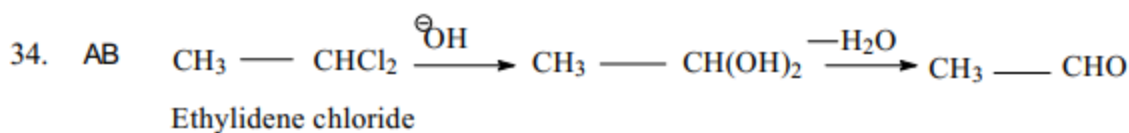
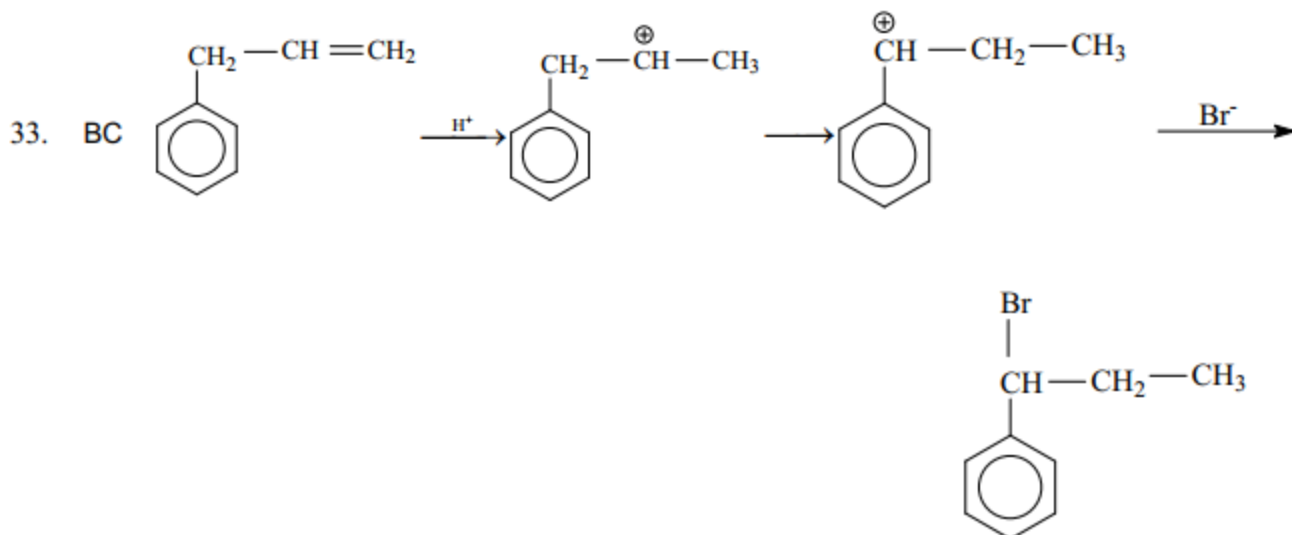


29. A The given reaction involves retention of configuration as nucleophilic attack has occurred at a carbon other than the chiral carbon.

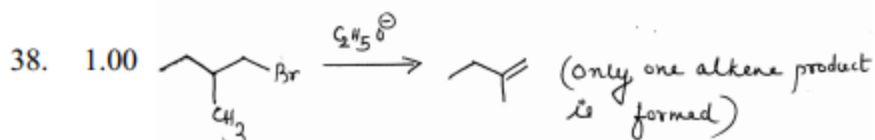
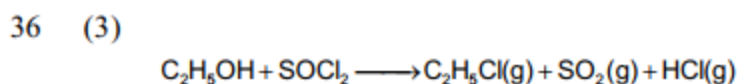
30. B Rate of  $S_N1$  reaction  $\propto [RCl]$



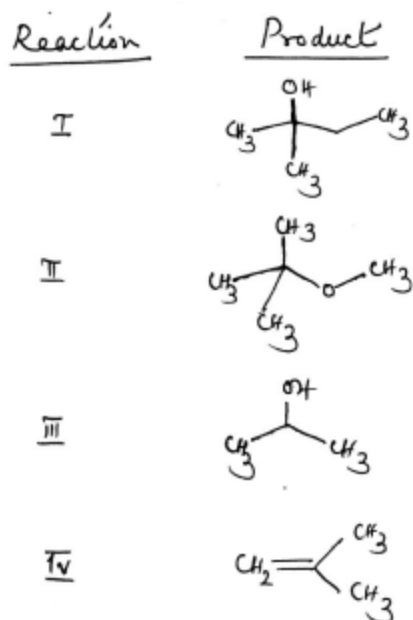
32. AB Nucleophilic substitution is difficult at vinylic and bridge head positions



35. (5) Chlorobenzenes substituted with electron donating groups will be slower than chlorobenzene in nucleophilic substitution (Here, compounds 3,4,5, 6 and 7)



39. A



40. A

