EXERCISE -1

PART - I

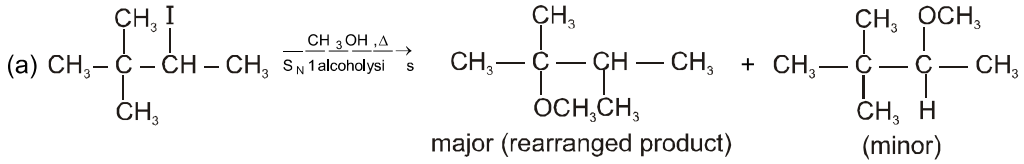
A-1. (a) III > IV > II > I ; (b) IV > II > I > III

A-2. $\Delta H_4^o > \Delta H_1^o > \Delta H_2^o > \Delta H_3^o$

A-3. (a) Rate - doubled (b) Rate - tripled

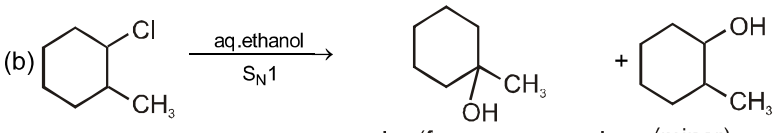
Sol. Rate of S_N1 does not depend upon concentration of nucleophile & solvent.

A-4. (a)



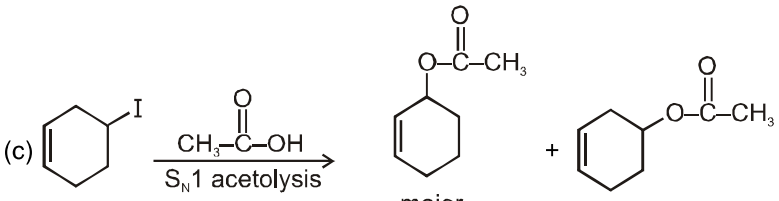
major (rearranged product) (minor)

(b)



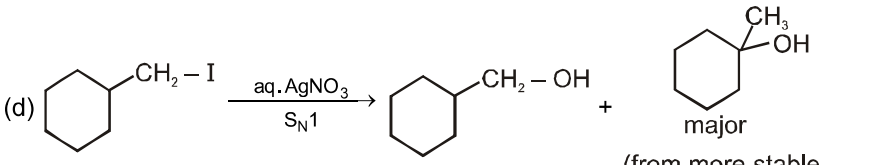
major (from rearranged 3° carbocation) (minor)

(c)



major (from rearranged allylic cation) minor

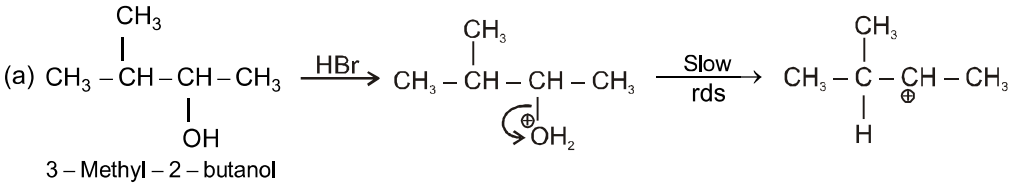
(d)



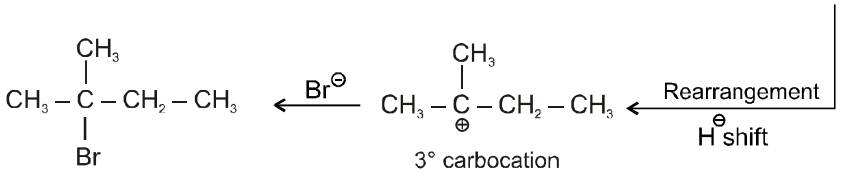
(minor) major (from more stable rearranged carbocation)

A-5. 5

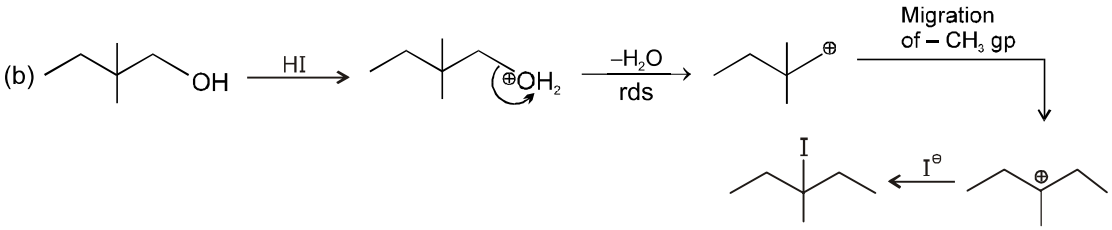
Sol. X = 1, Y = 4

A-6. (a) 

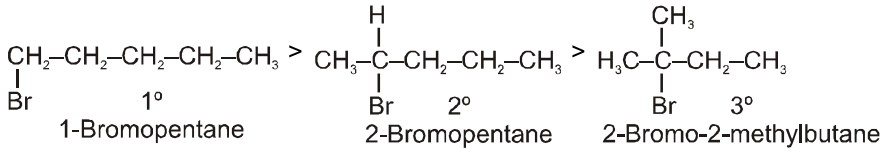
3 – Methyl – 2 – butanol



2-Bromo-2-methylbutane

(b) 

B-1. (a) II > III > I, (b) IV > II > I > III

Sol. (a) 

B-2. 3

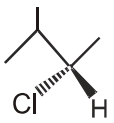
Sol. P,Q,R

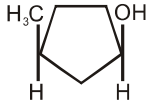
B-3. (a) $PhCMe_2Br$ (b) $PhCH_2CH_2Br$

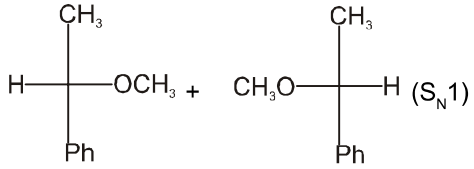
Sol. (a) Rate of S_N1 reaction $\propto$ stability of carbocation intermediate.

(b) Rate of S_N2 reaction $\propto \dfrac{1}{\text{steric crowding}}$

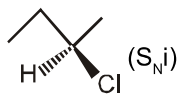
B-4. 4

B-5. (a) 

(b) 

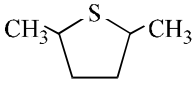
(c) 

(S_N1)

(d) 

(S_Ni)

B-6. 3 (S_1,S_3, S_4)

Sol. 

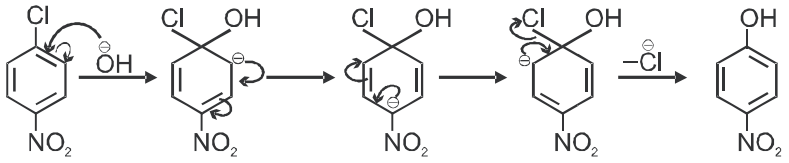
C-1. II > III > I

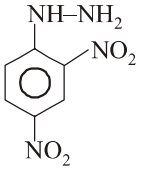
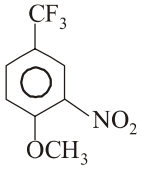
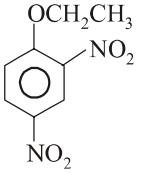
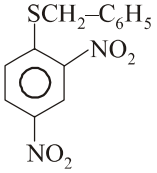
Sol. NO_2 group at ortho & para position to Cl group facilitate the nucleophilic attack for substitution reaction.

C-2. 3

Sol. (i), (ii), (vi)

C-3. **Mechanism**

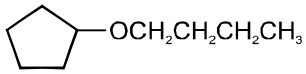
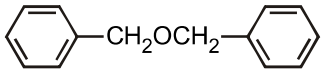


C-4. **(i)**  **(ii)**  **(iii)**  **(iv)** 

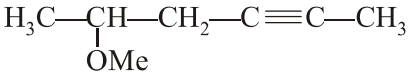
D-1. (3)

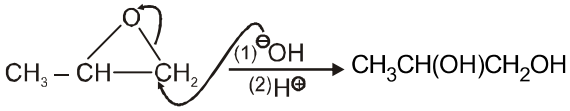
Sol. (a), (b), (c)

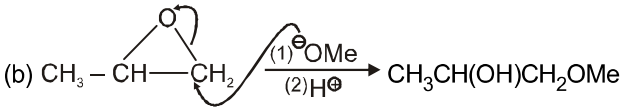
D-2. 1

D-3. a =  b = 

D-4. (a) X = $CH_3CH(OH)CH_2OH$ (b) Y = $CH_3CH(OH)CH_2OMe$

(c) 

Sol. (a) 

(b) 

PART - II

A-1.	(A)	**A-2.**	(B)	**A-3.**	(A)	**A-4.**	(D)	**A-5.**	(A)	**A-6.**	(A)	**A-7.**	(B)	**A-8.**	(B)	**A-9.**	(A)	**A-10.**	(C)
A-11.	(B)	**B-1.**	(B)	**B-2.**	(C)	**B-3.**	(D)	**B-4.**	(C)	**B-5.**	(A)	**B-6.**	(D)	**B-7.**	(B)	**B-8.**	(B)	**B-9.**	(B)
B-10.	(D)	**B-11.**	(B)	**C-1.**	(C)	**C-2.**	(A)	**C-3.**	(D)	**C-4.**	(B)	**D-1.**	(B)	**D-2.**	(B)	**D-3.**	(A)	**D-4.**	(B)
D-5.	(C)	**D-6.**	(C)																

PART - III

1. (A) **2.** (B)