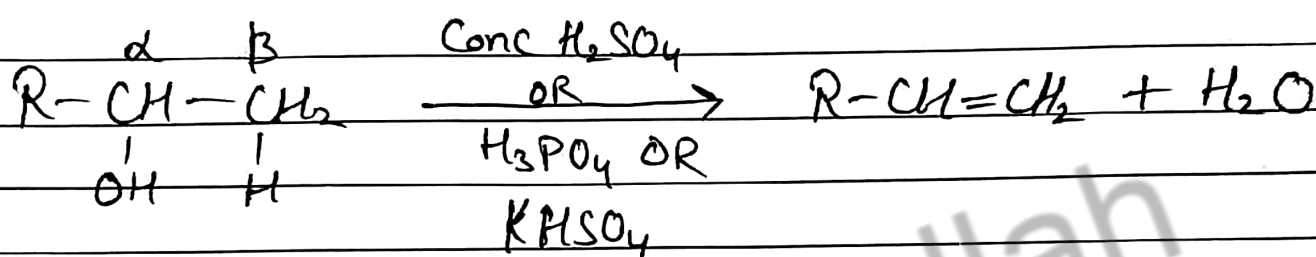


# Alcohols, Phenols & Ethers - 07

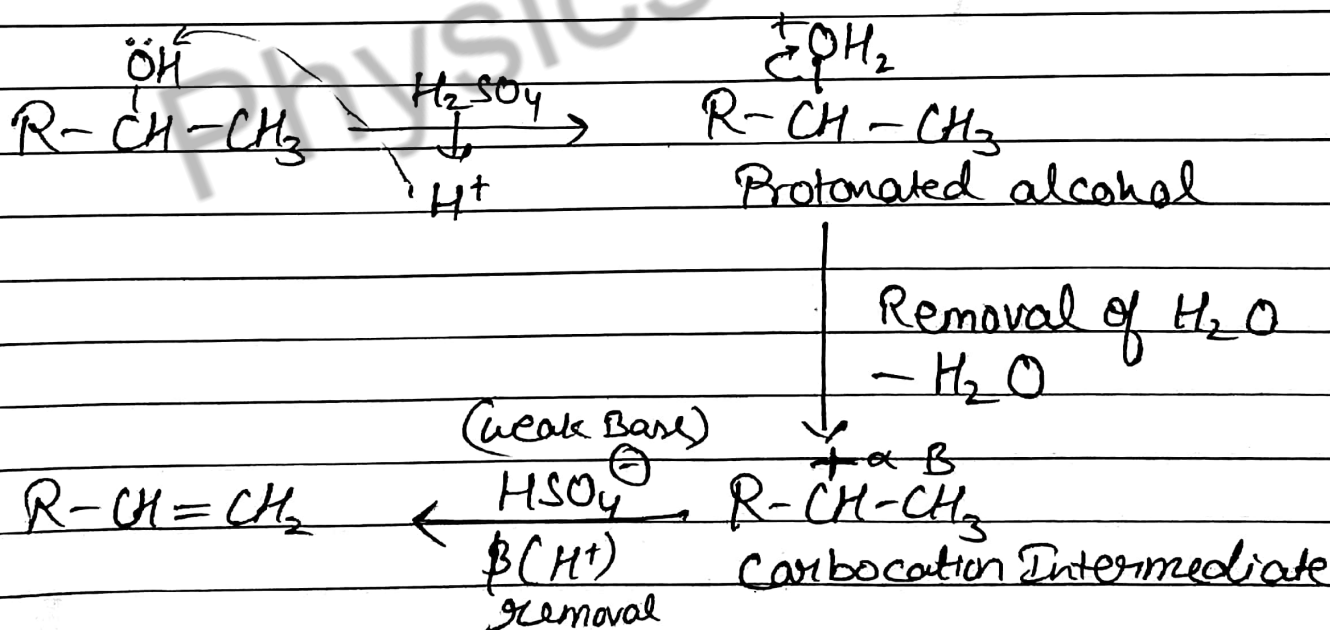
## Properties of Alcohols - 3

### Dehydration of Alcohols

↓  
Removal of  
 $H_2O$  Molecule



Mechanism:  $E^{\ominus}$  elimination

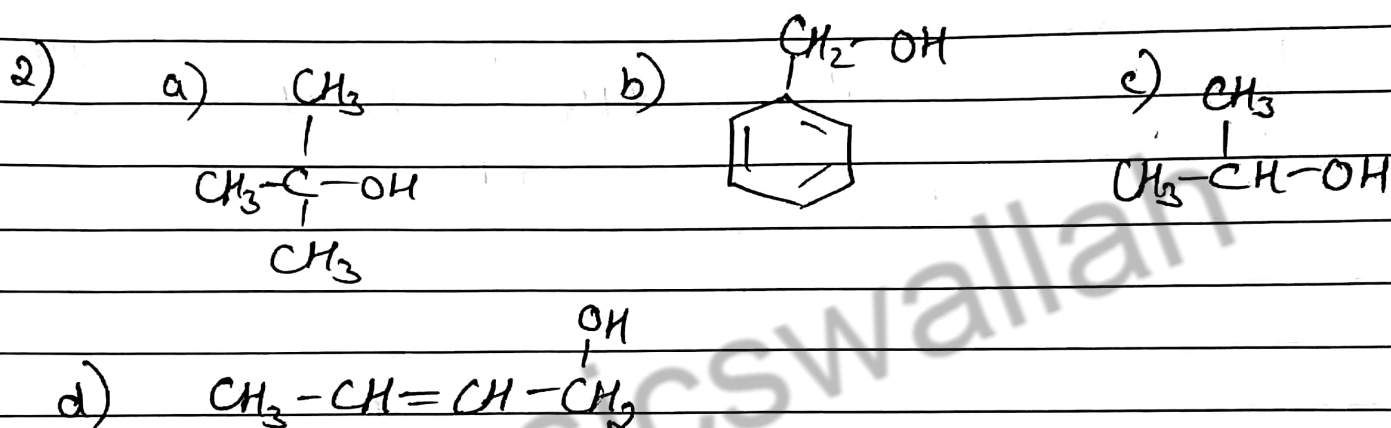
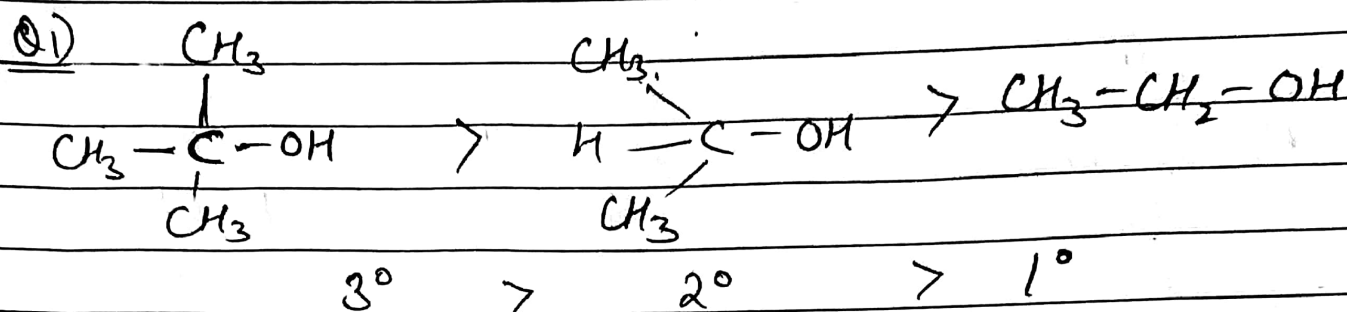


Key points:

i) Carbocation Intermediate, so  
Rate of Dehydration  $\propto$  Stability of Carbocation

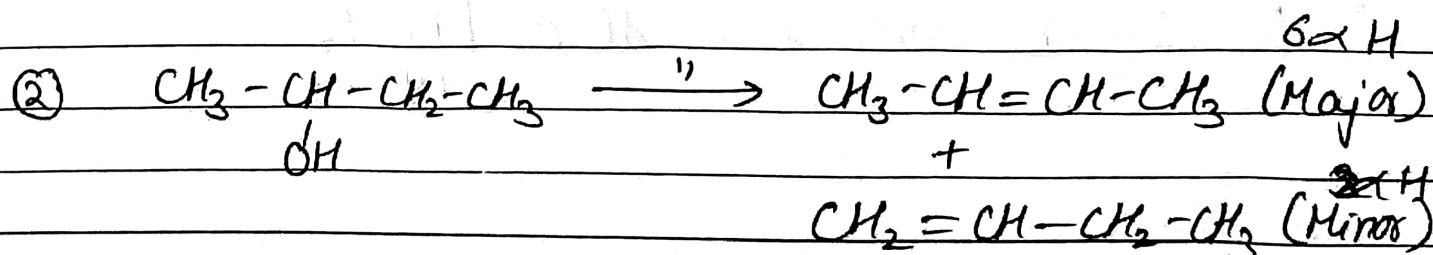
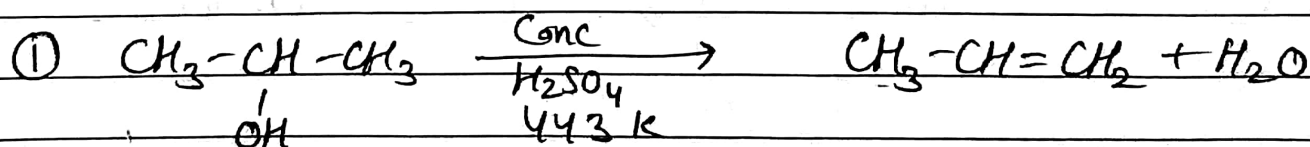
ii) Rearrangement of Carbocation may takes place  
like  $H^{\oplus}$ ,  $CH_3^{\oplus}$ ,  $Ph^{\oplus}$  Shift.

# Ease of Dehydration of Alcohol $\propto$ Stability of Carbocation

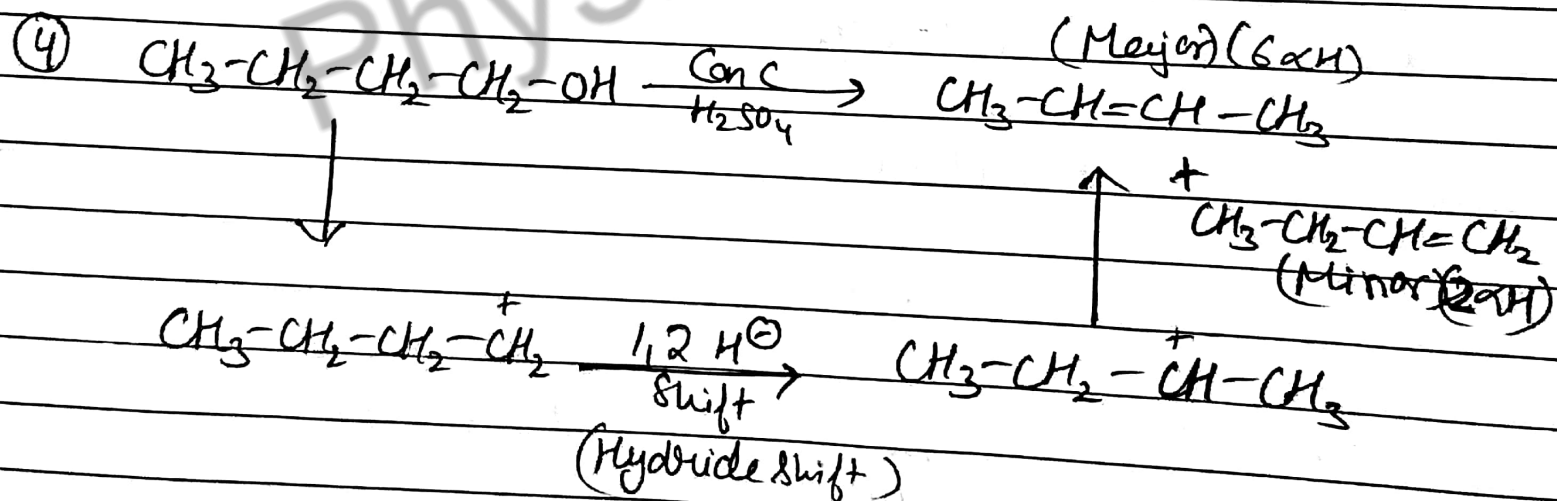
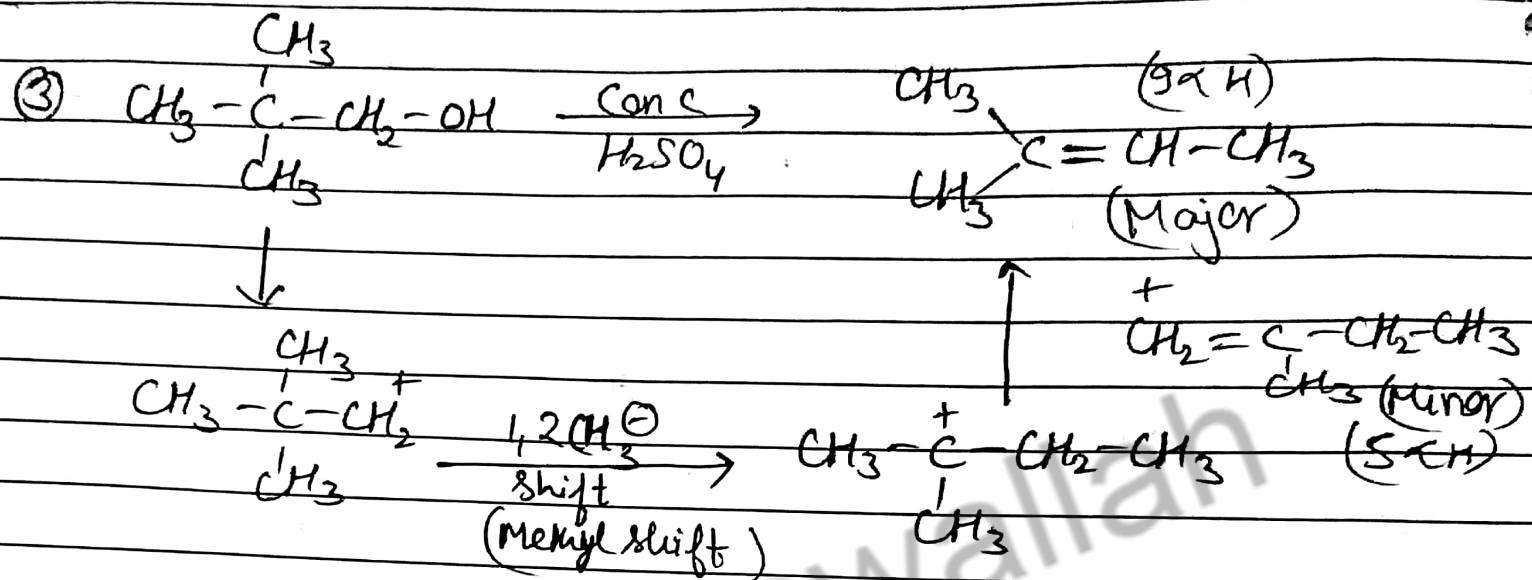


Solution  $a > b > d > c$

## Form the Product



(Saytzeff Rule: Form More Stable alkene)  
 $\downarrow$   
 More Number of  $\alpha$ -H



Note: If Dehydrating Agents like  $\text{Al}_2\text{O}_3$  /  $\text{P}_2\text{O}_5$  /  $\text{POCl}_3$  (in presence of pyridine) are used,

$\text{E}^2$  elimination occurs

⇒ No Carbocation

⇒ No Rearrangement

Rest All same

Each proceeds through different Mechanism

