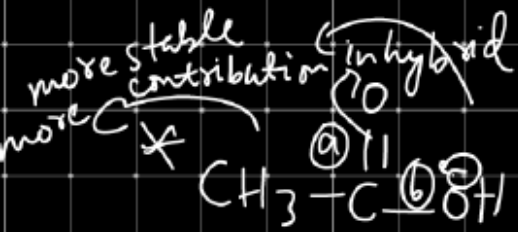
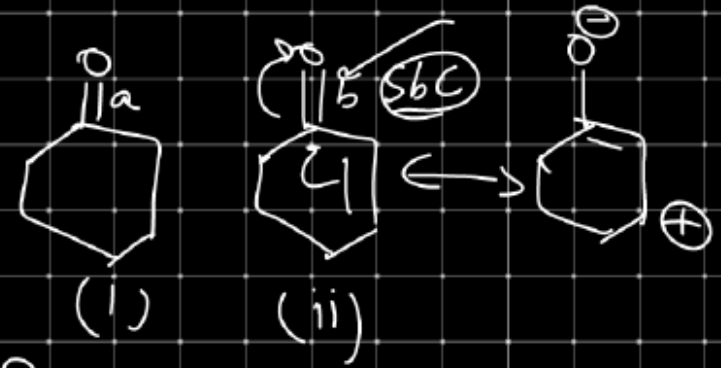
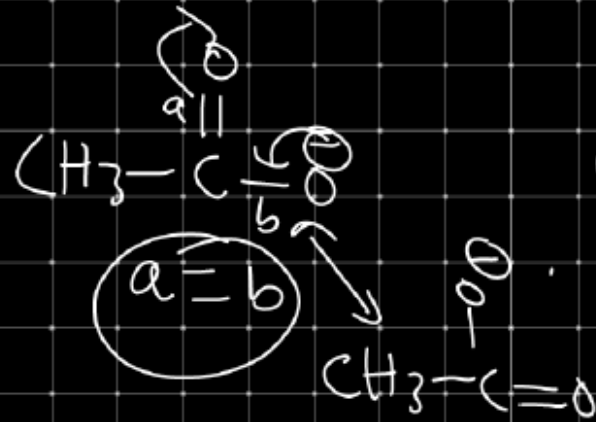


# Application of Electronic displacement



Bond Length

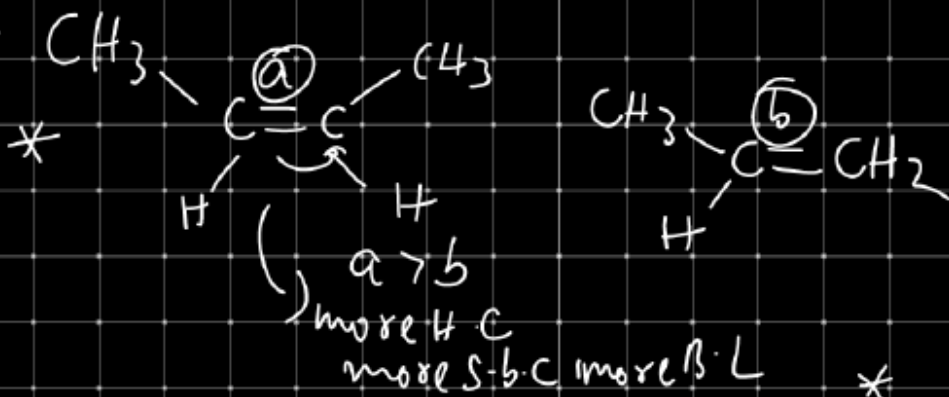
B.L<sub>b</sub> > B.L<sub>a</sub>



B.L<sub>b</sub> > B.L<sub>a</sub>

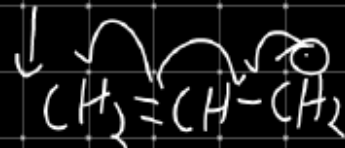
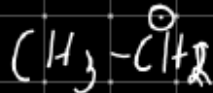
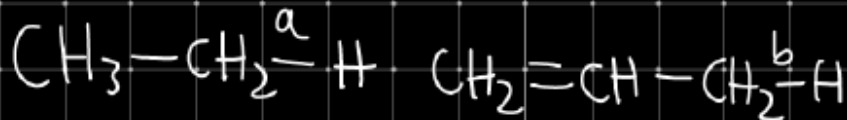
Due to resonance s-b-c in double bond

Compare  
B.L



Bond Energy

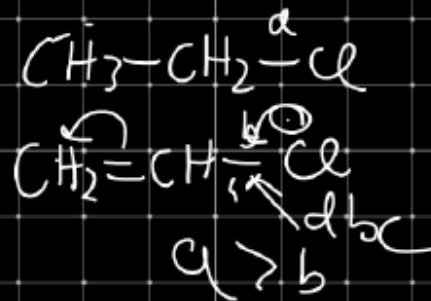
Compare  
B.E

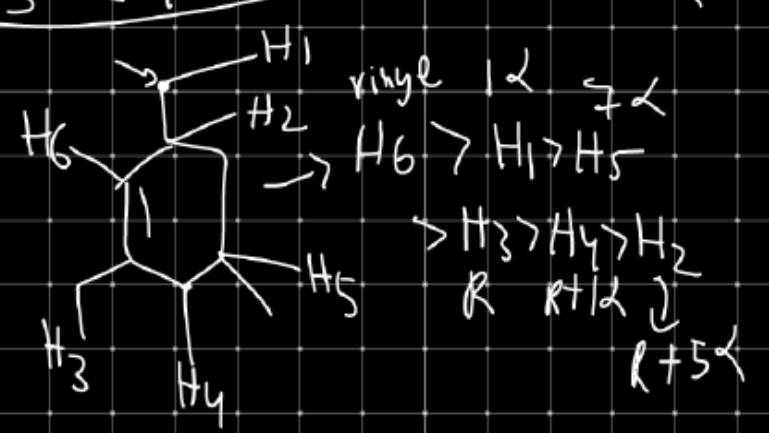
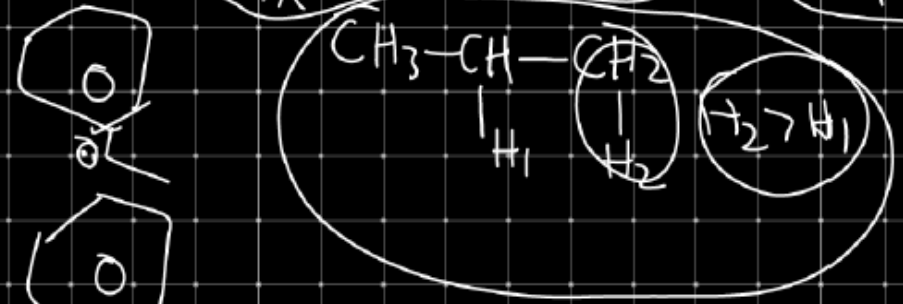
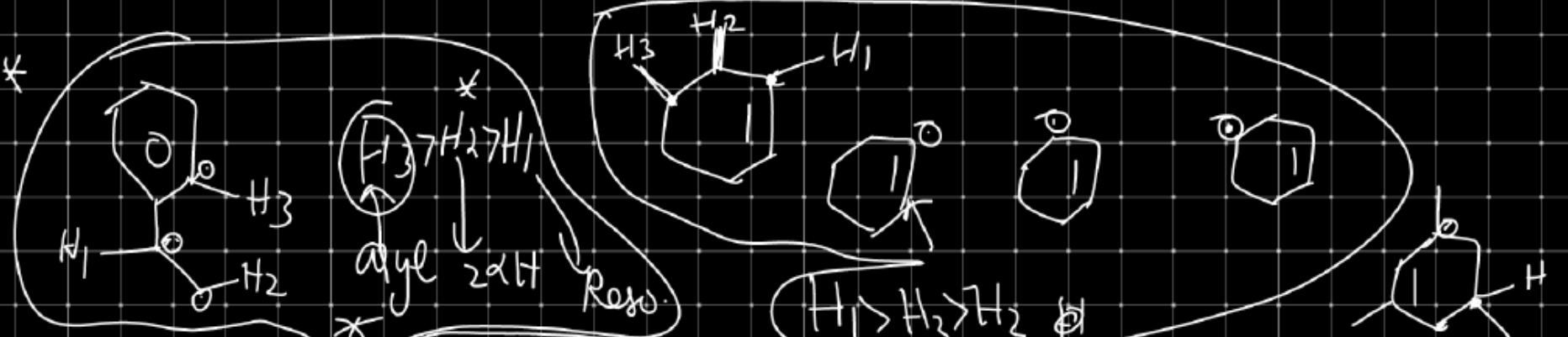


B.E  $a > b$

B.E  $a$

Stability of F.R

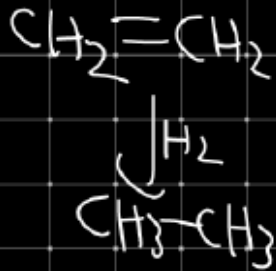
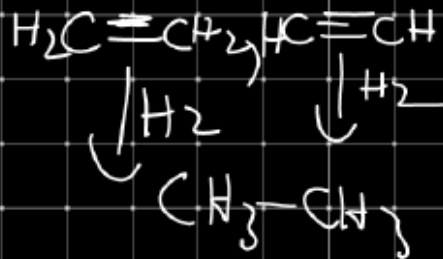
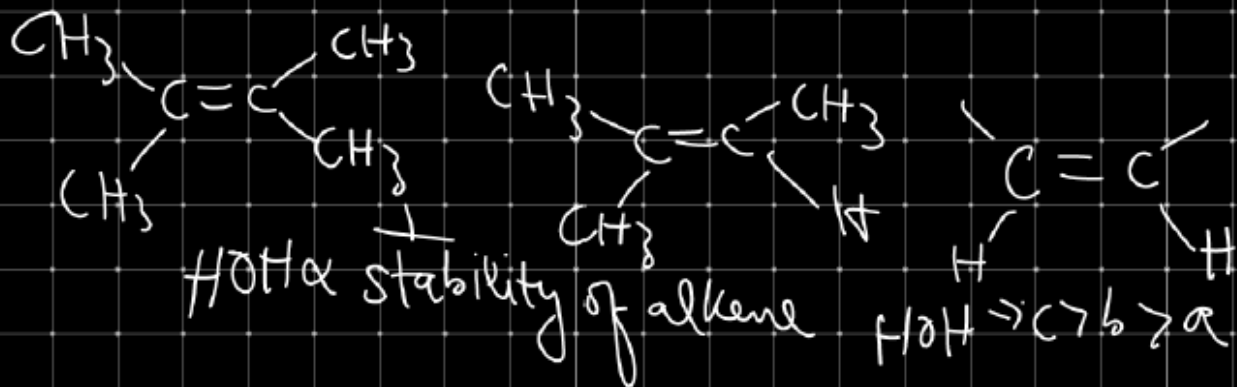




V. imp Heat of hydrogenation  $\Delta H = -ve$

Amount of heat released during  $H_2$  addition across  $\pi$  bond b/w two carbon

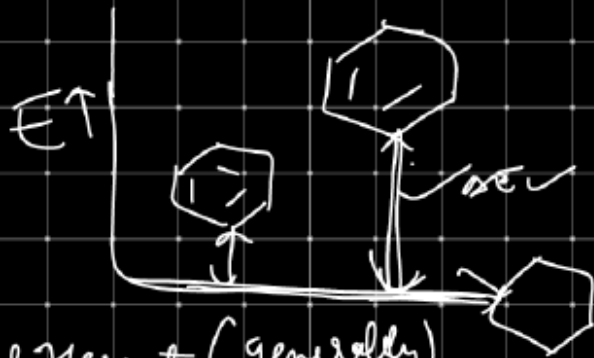
Case 2 when no of  $\pi$  bond are same



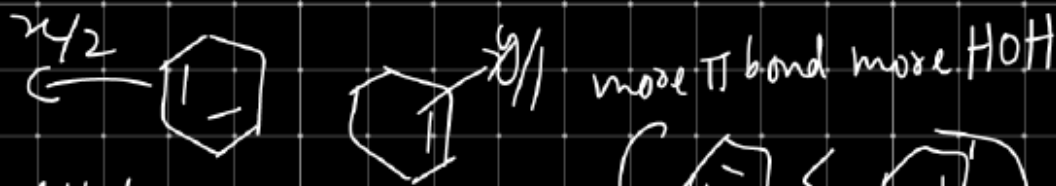
Compare  
\*  
HOH



HOH (b7c7a)



\* Case II When no of  $\pi$  bonds are different (generally)

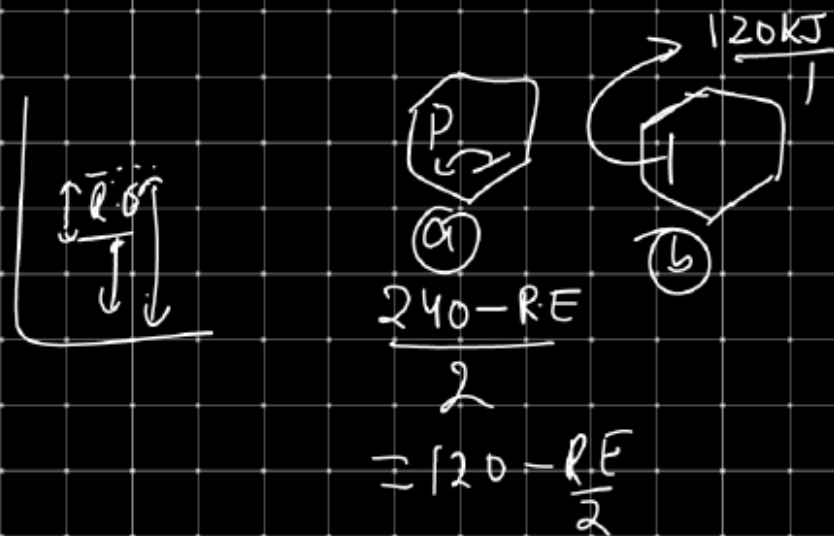


more  $\pi$  bond more HOH

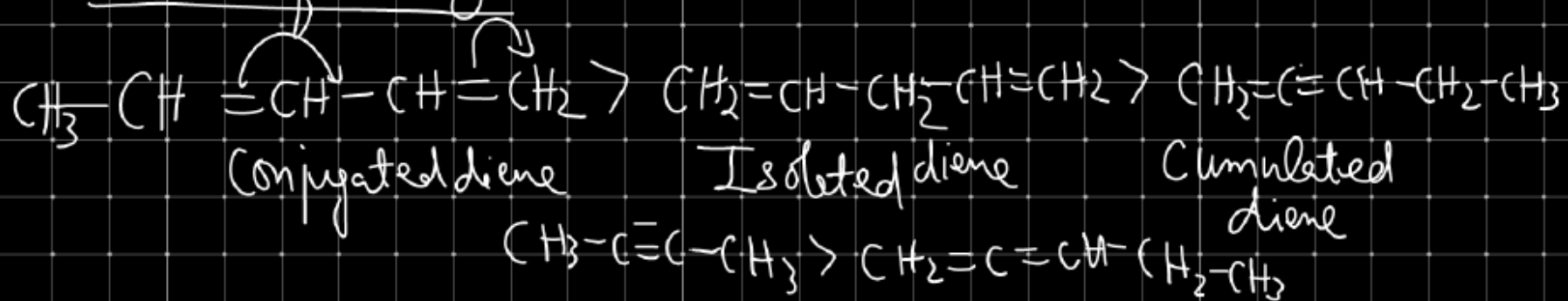
Case III per mol  $H_2$  / per  $\pi$  bond



$\uparrow$  HOH per  $\pi$  bond / per mole of  $H_2 \propto \frac{1}{\text{stability}}$



Order of stability



# Compare HOH

a



b > c > a

b



c > b > a

c



b > a

d



b > a > c > d