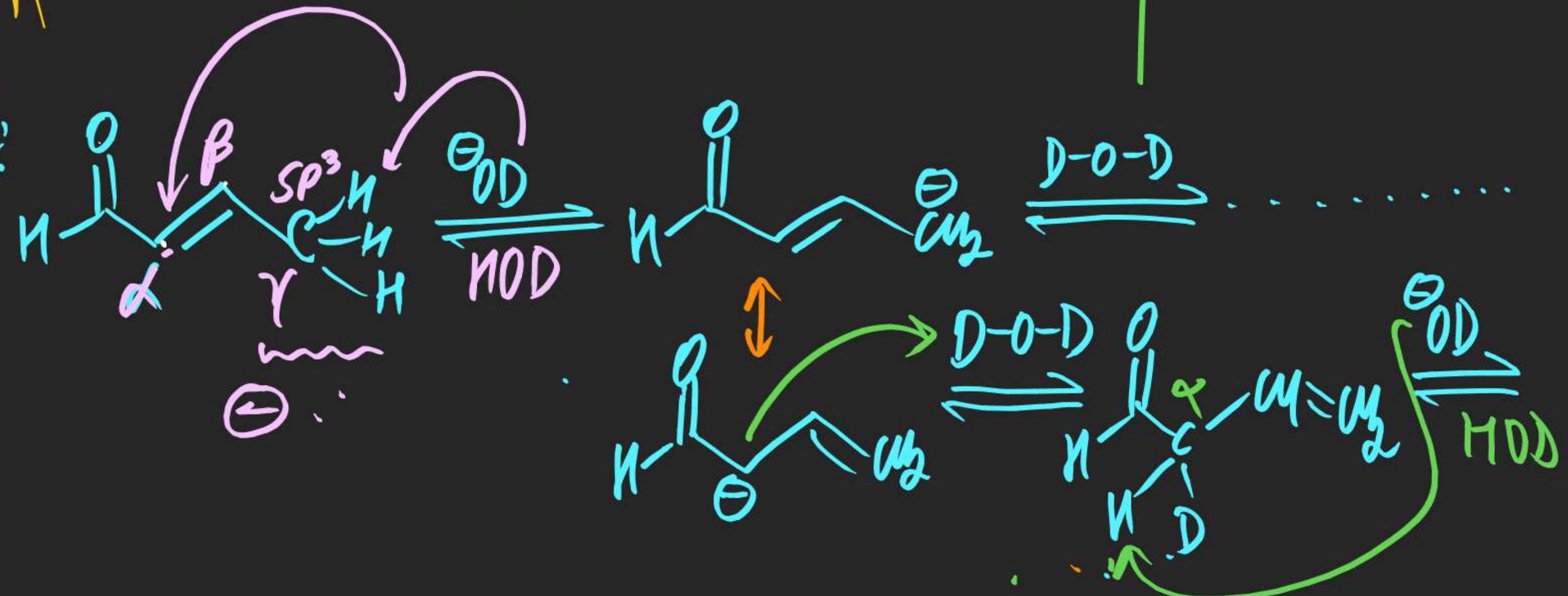
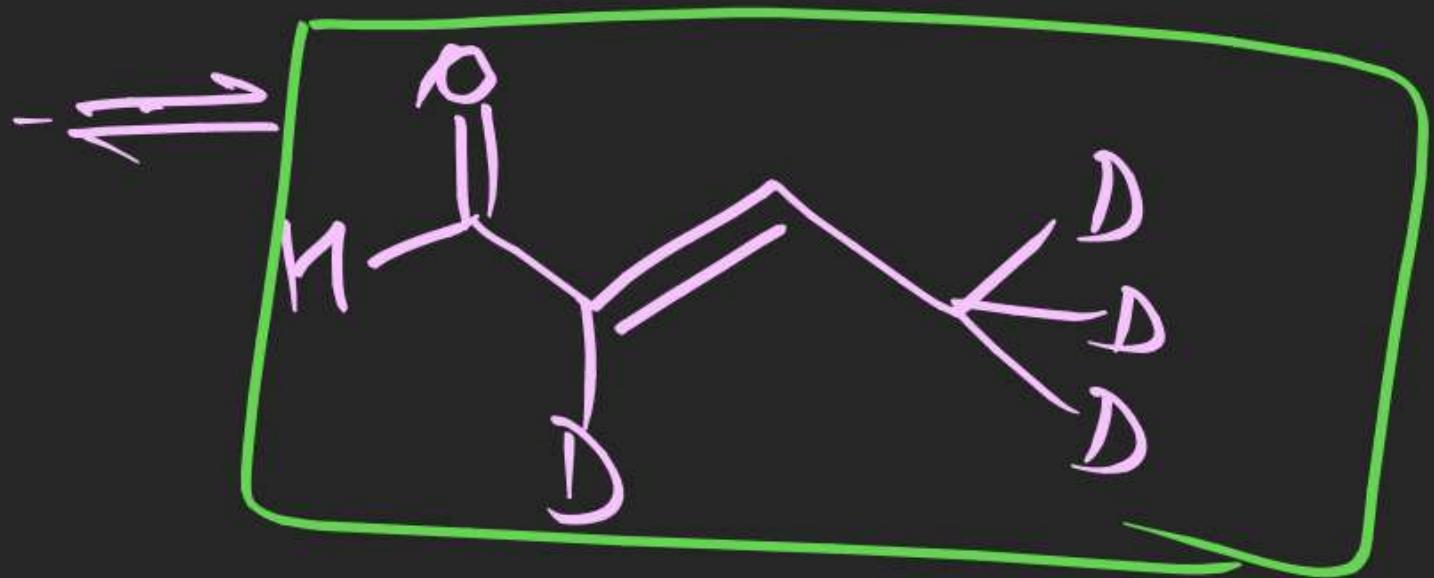
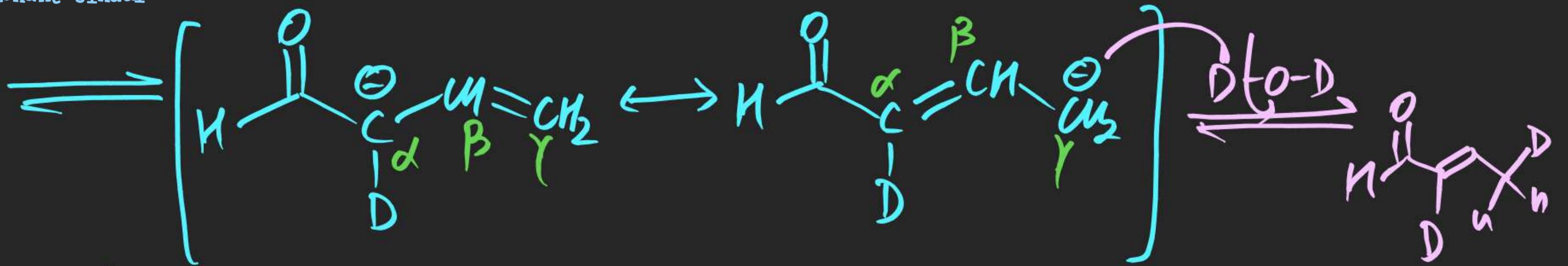
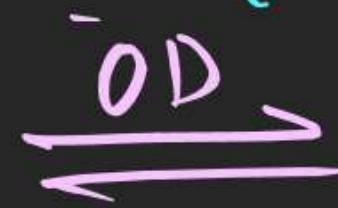


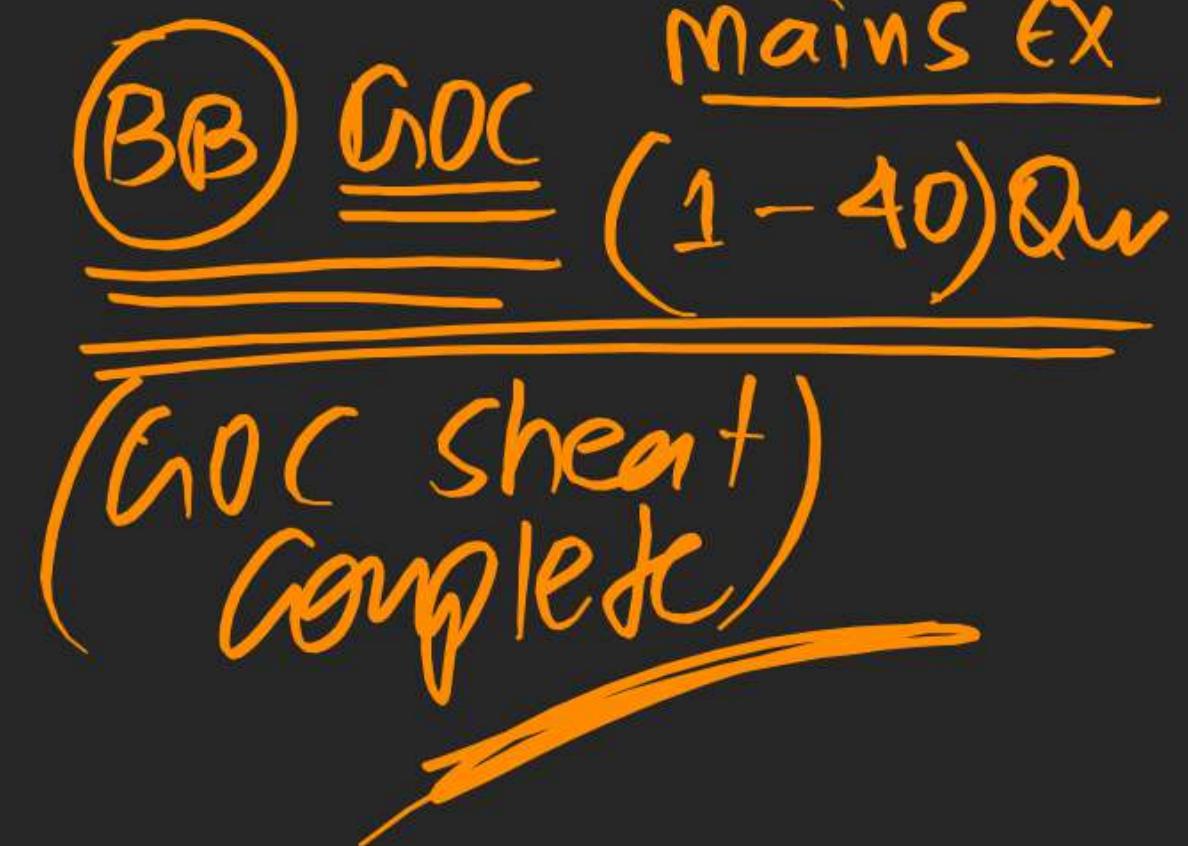
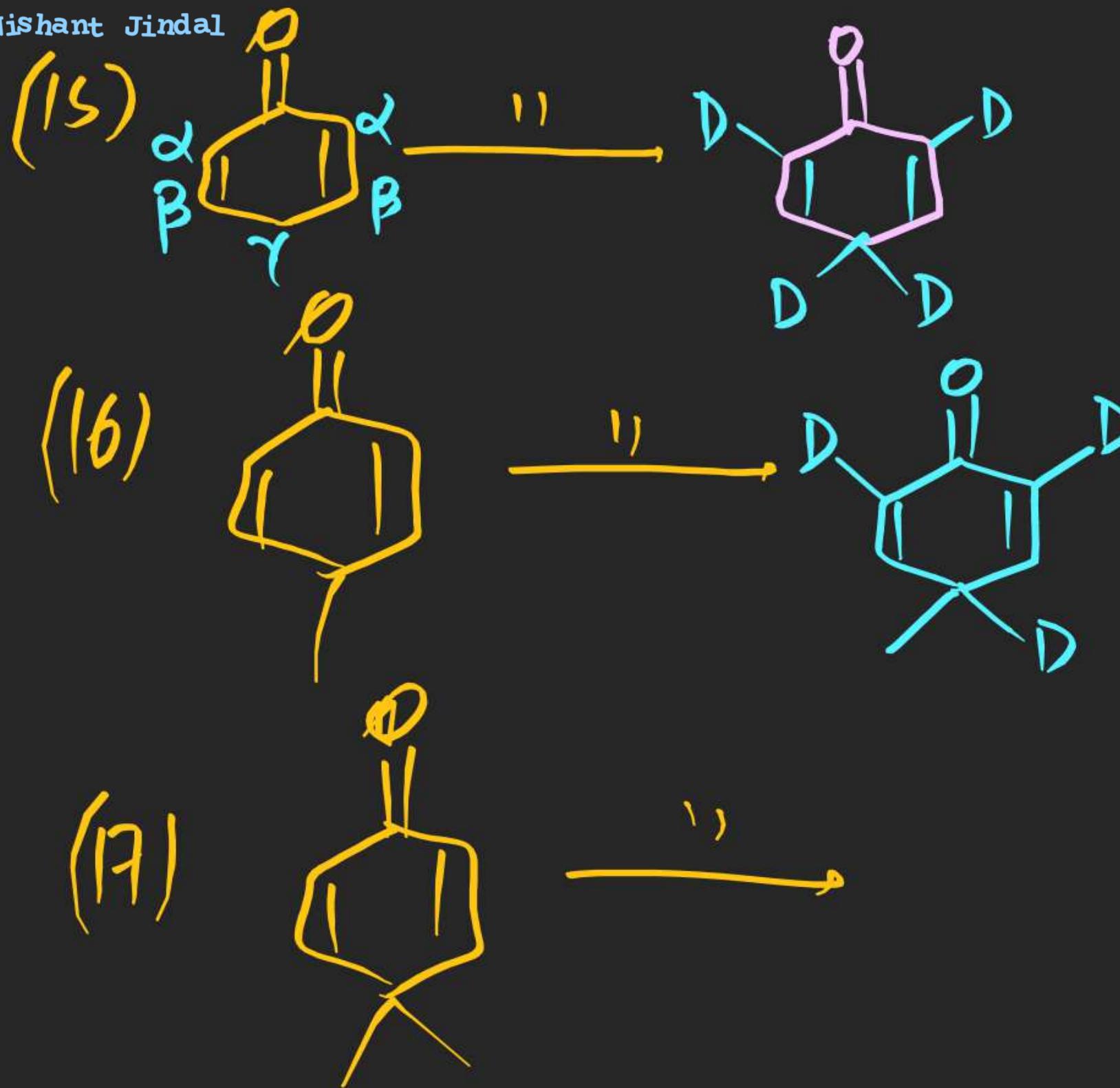
Telegram
skm-Nucleusedu
academy



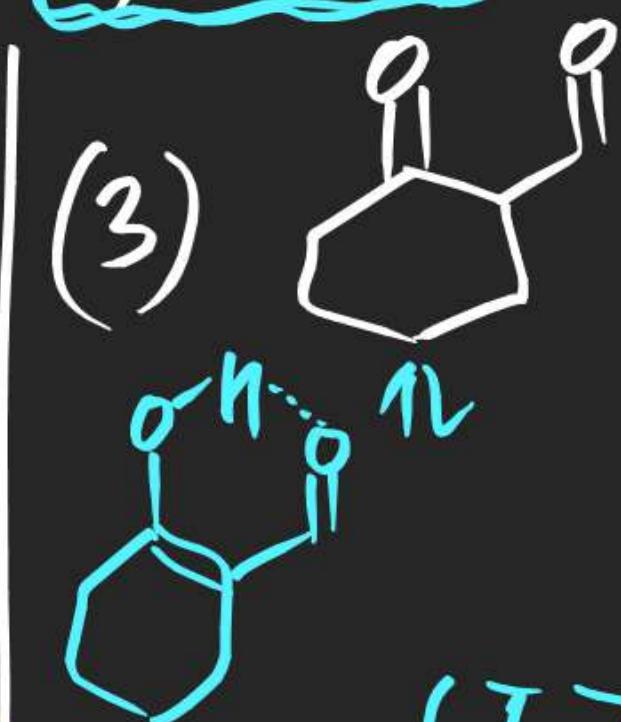
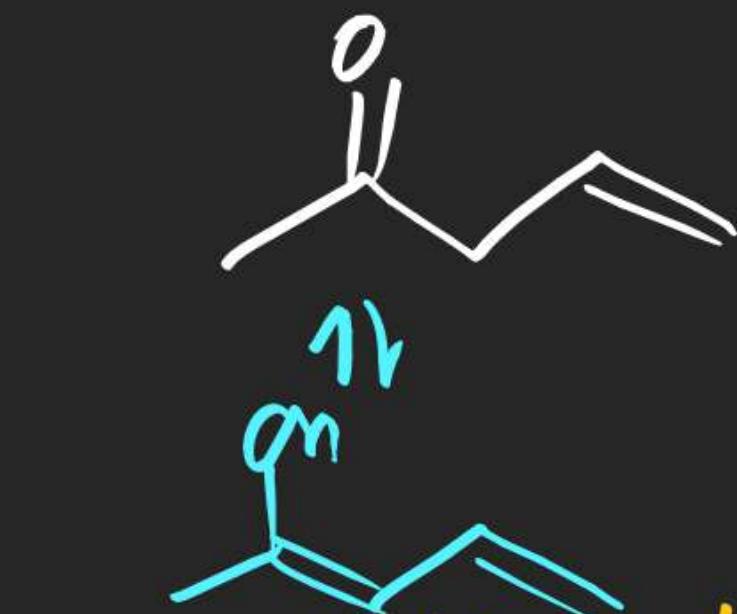
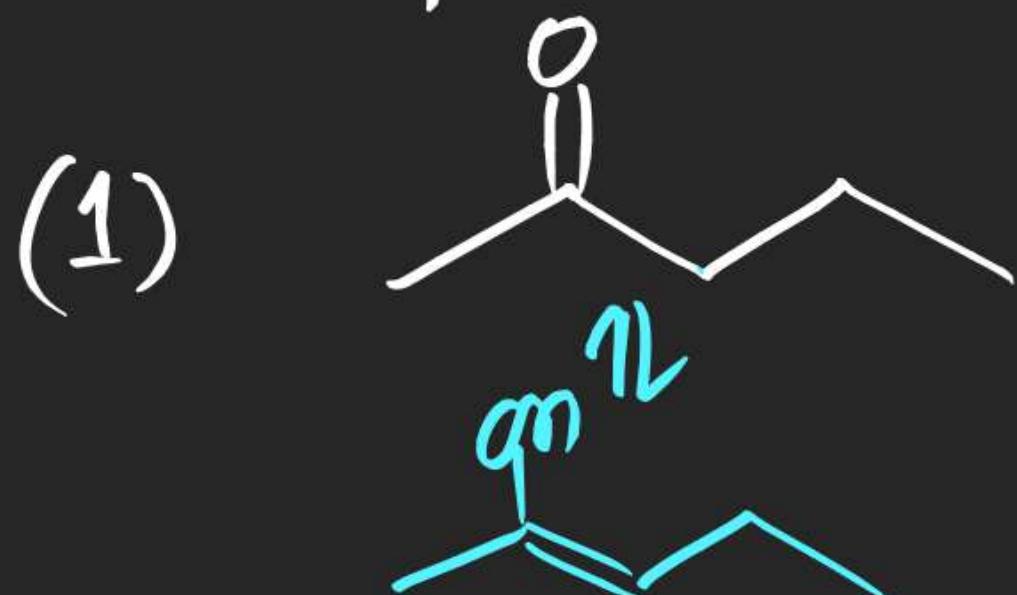
mech?

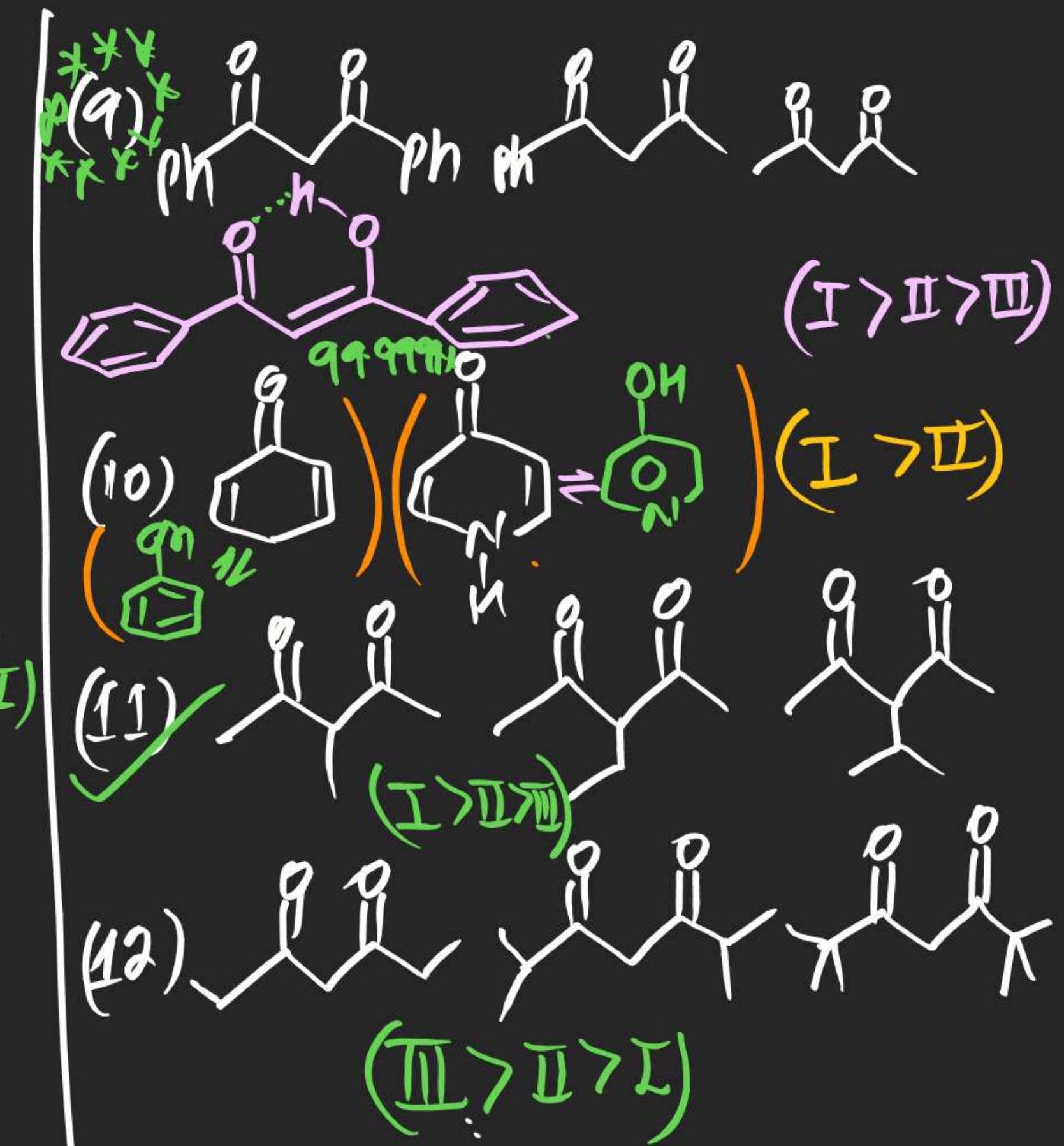
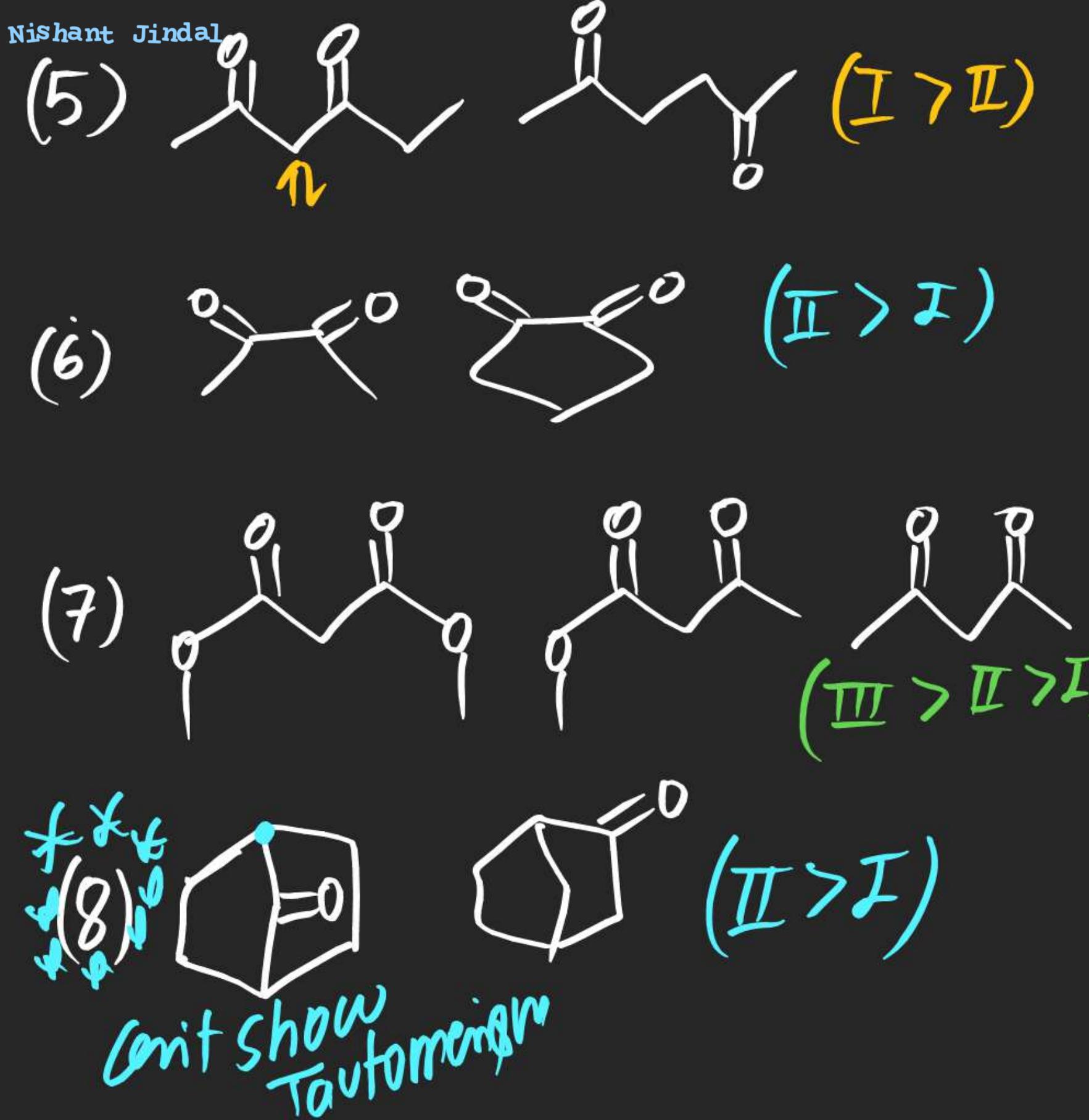






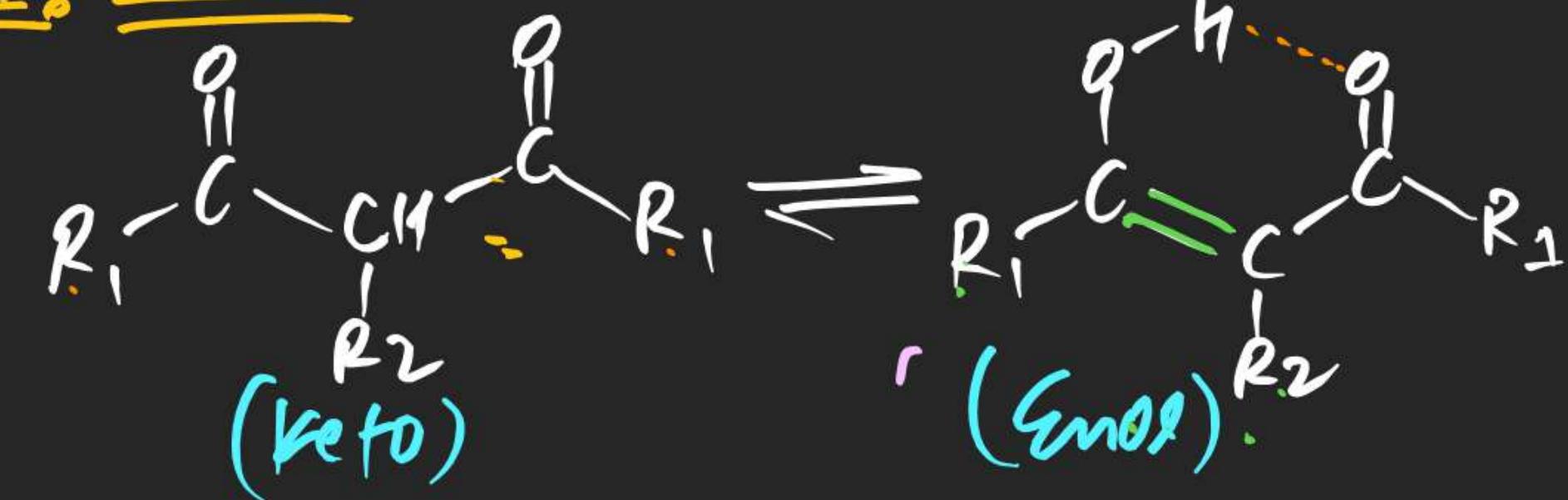
Ex: Anhyd following in ↓ order of % Enol.





(#) Factors affecting % Enol:

(i) Structure of keto:

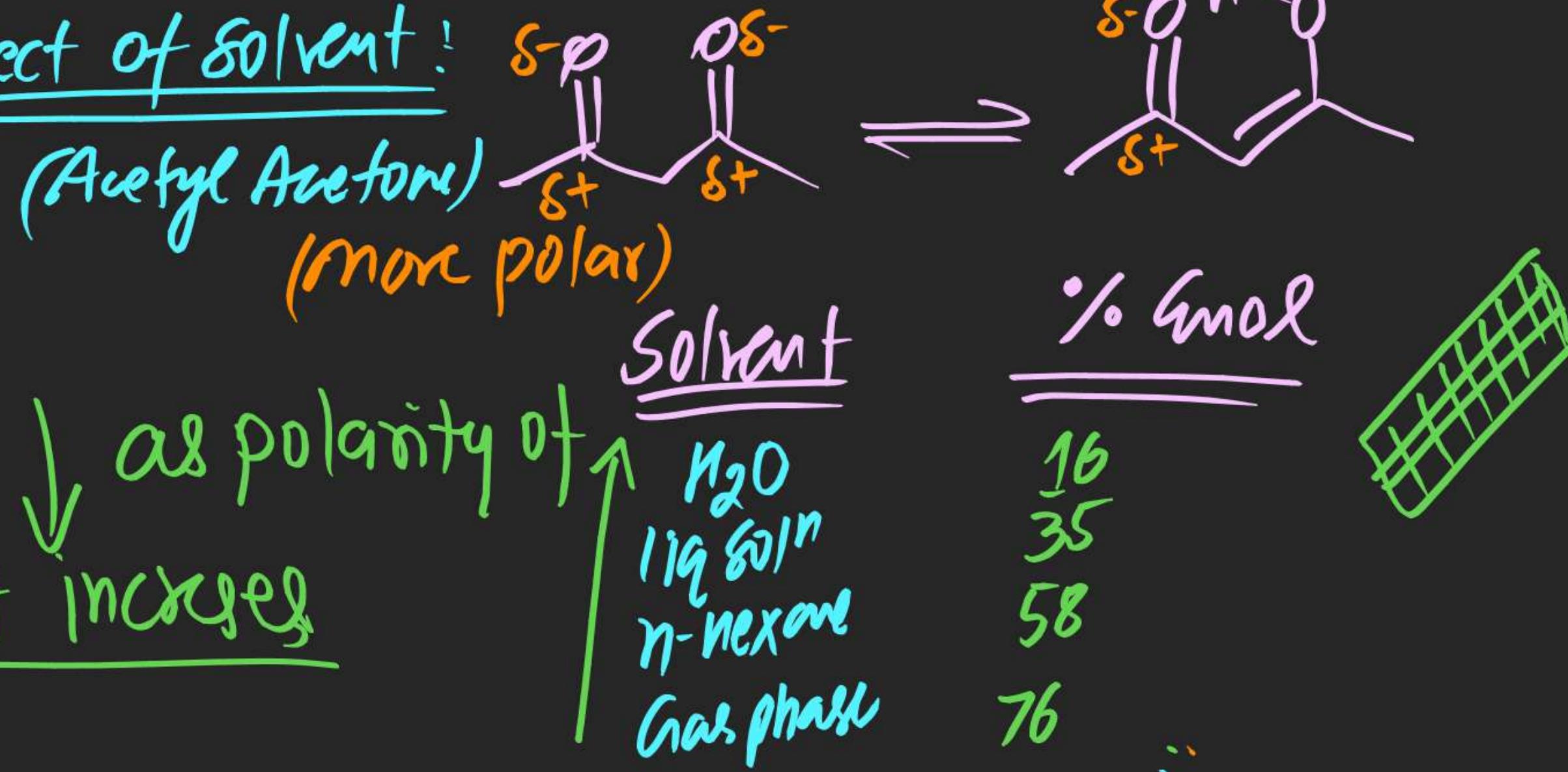


\Rightarrow If size of R_2 increases \Rightarrow Steric crowding would increase in Enol & hence % Enol decreases

\Rightarrow If size of R_1 increases \Rightarrow wd cause steric chelation b/w OH & =O hence increases % Enol.

(##) effect of Temp:

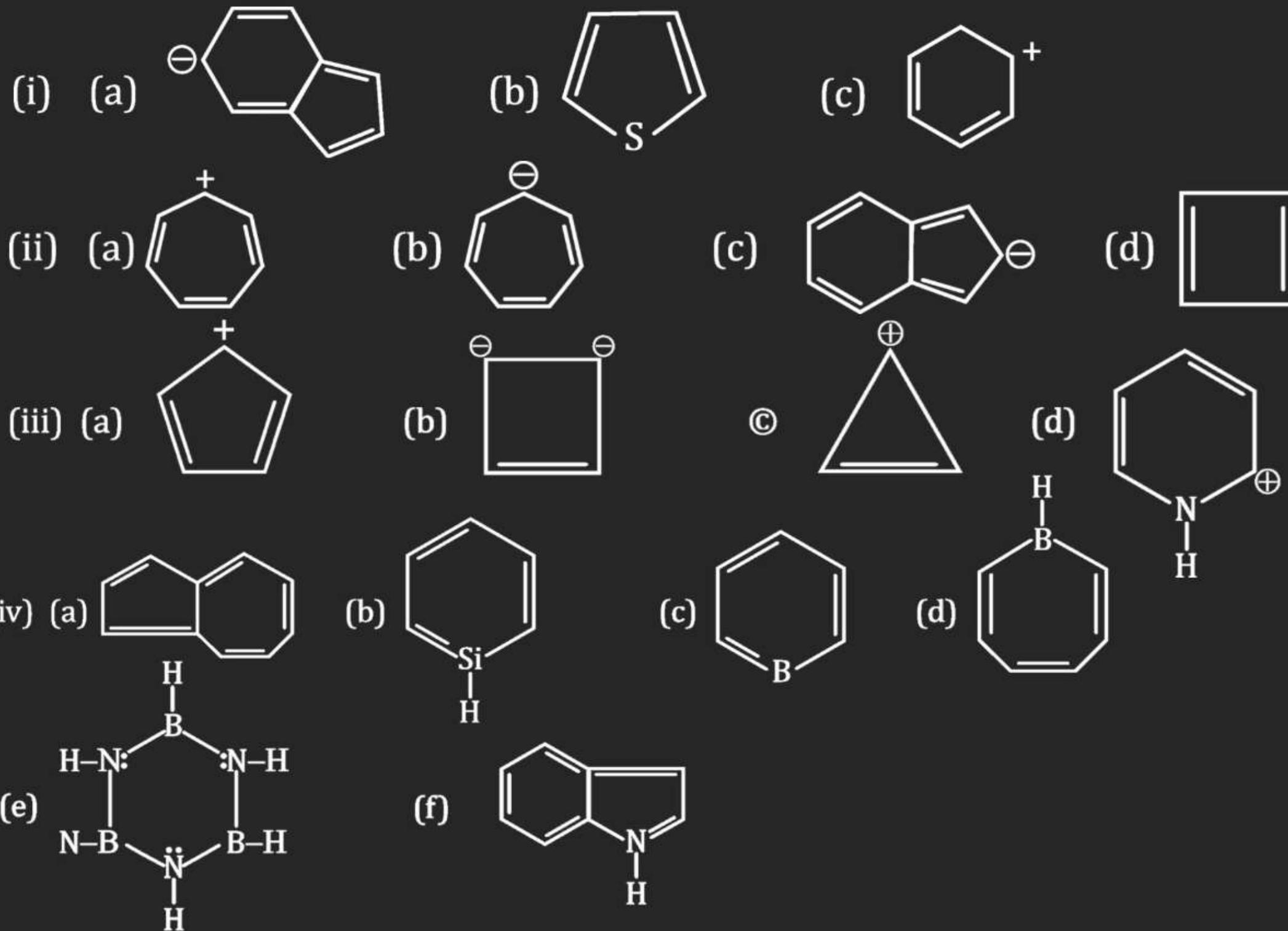
On increasing Temperature % Enol decreases
bcz chelation gets destroyed.

(##) effect of solvent:

General Organic Chemistry

EXERCISE - II

Q.1 In each set of species select the aromatic species.



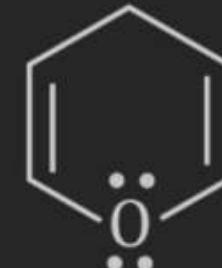
Q.2 Which of the given compound is aromatic, antiaromatic or nonaromatic.



isoxazole



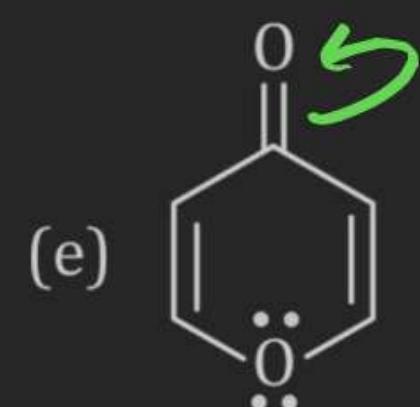
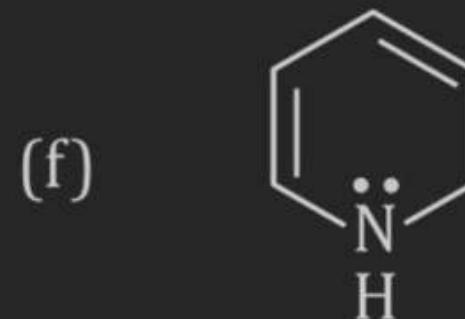
1,3-thiazole



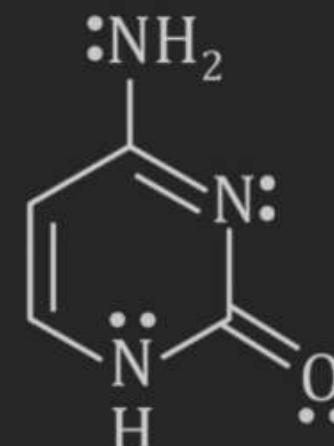
pyran



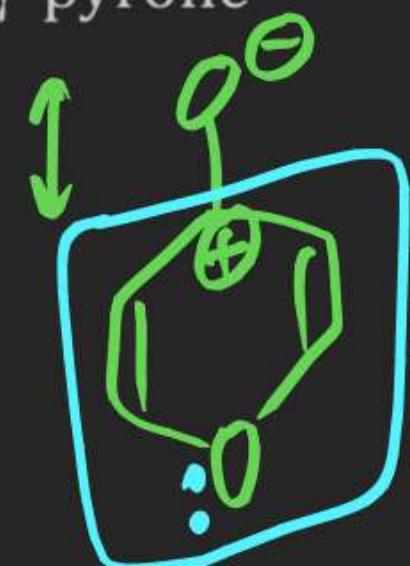
pyrylium ion

 γ -pyrone

1, 2-dihydropyridine

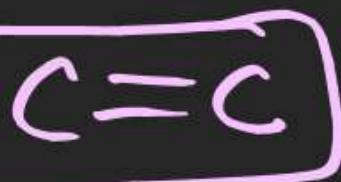
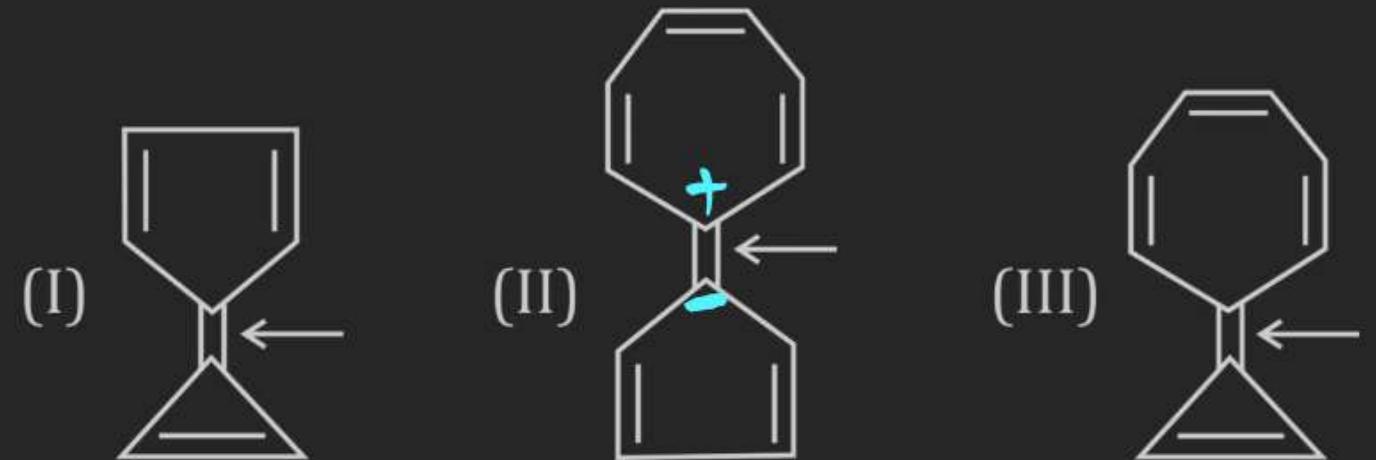


cytosine



6π electrons
Aromatic

Q.3



Tough Bond Rotation.

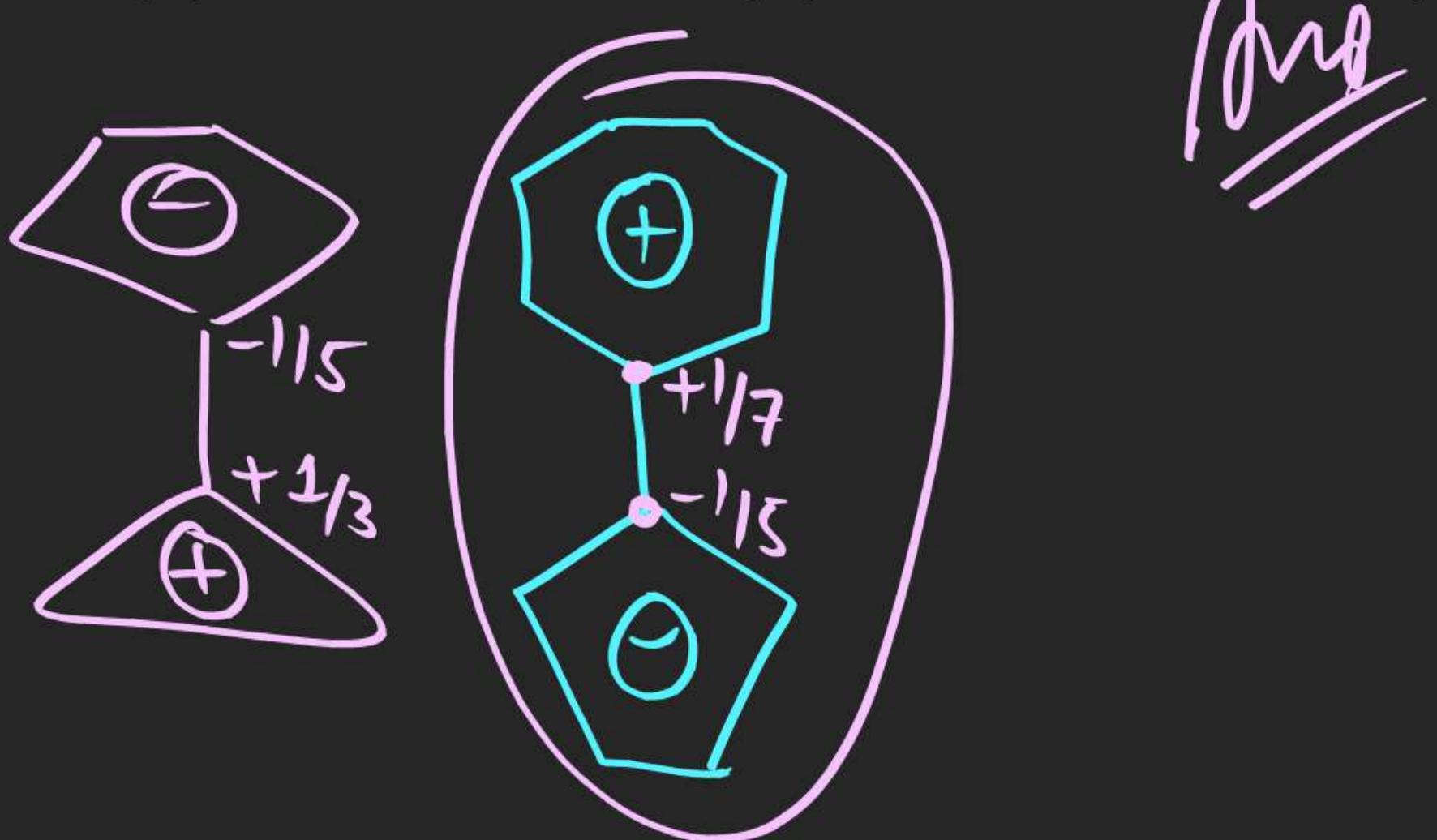
Compare carbon-carbon bond rotation across I, II, III.

(A) I > II > III

(B) I > III > II

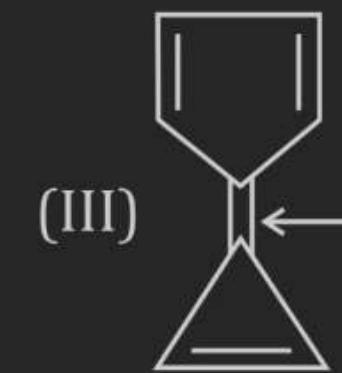
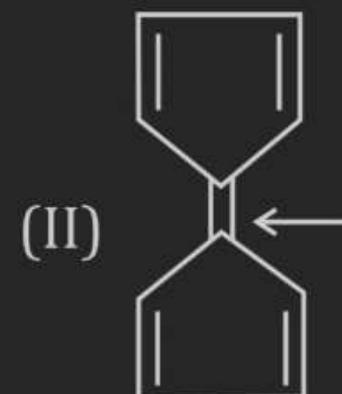
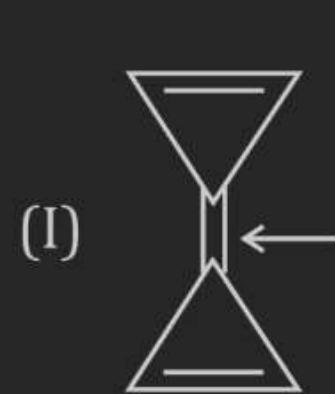
(C) II > I > III

(D) II > III > I



Bond
Single character

Q.4 Which of the given compounds has **minimum rotation energy barrier** across indicated carboncarbon bond.



Compare carbon-carbon bond rotation across I, II, III.

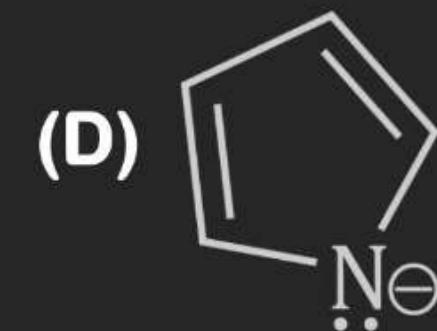
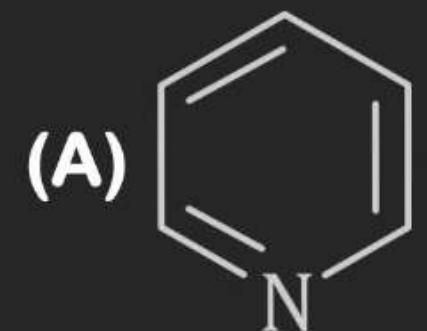
(A) I > II > III

(B) I > III > II

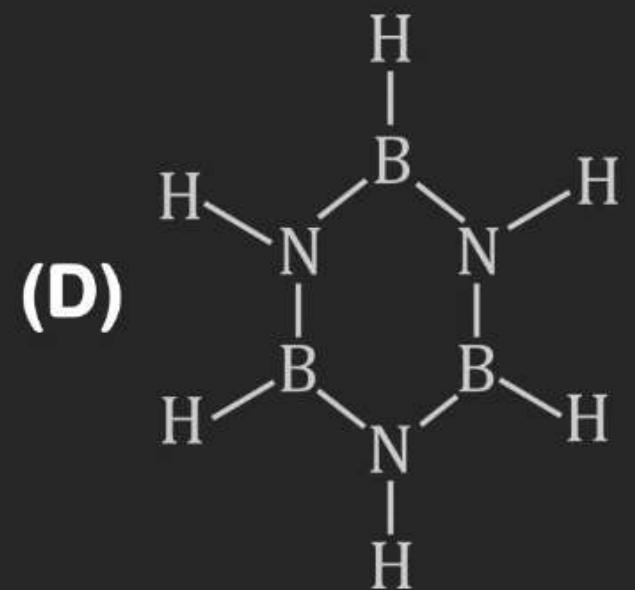
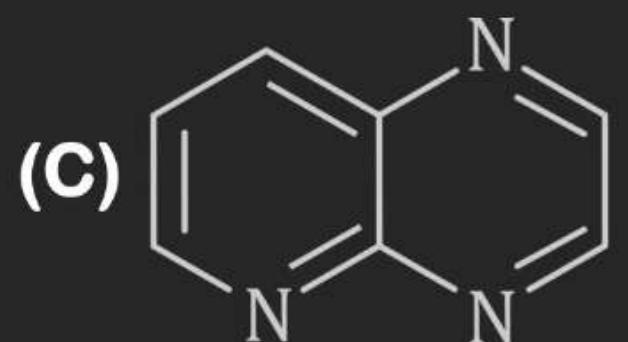
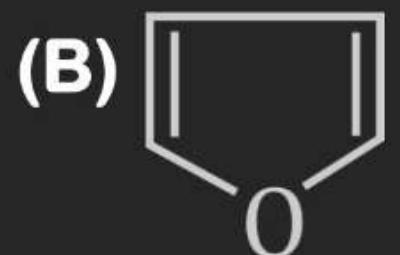
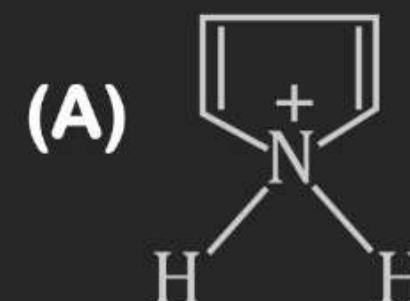
(C) II > I > III

(D) II > III > I

Q.5 Which species is not aromatic?



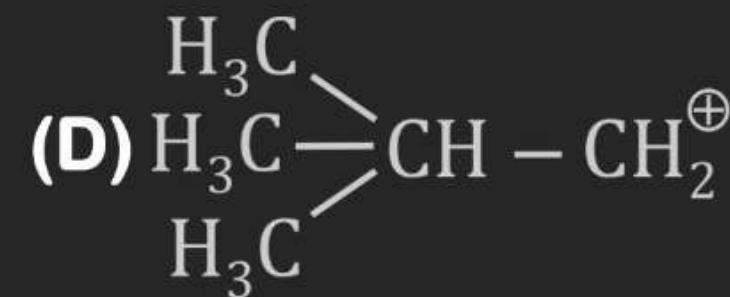
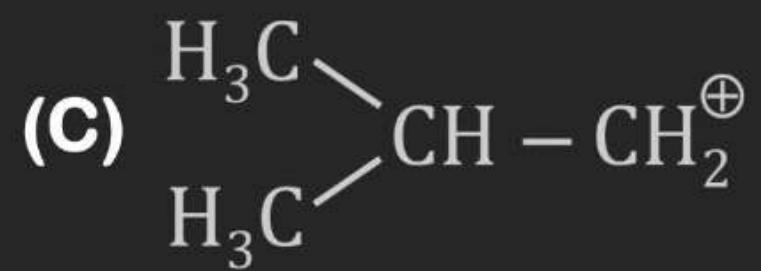
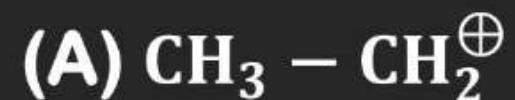
Q.6 Which of the following are non-aromatic



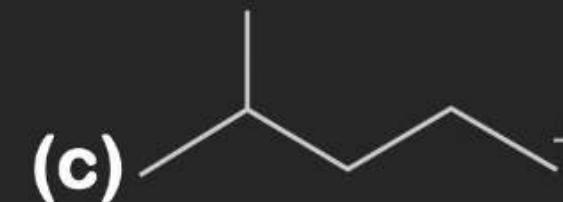
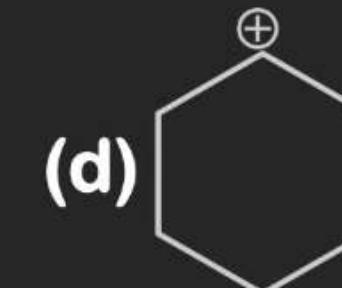
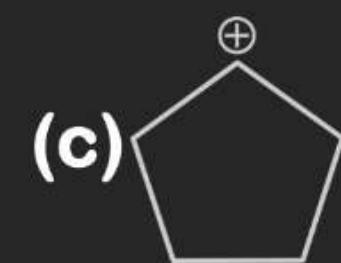
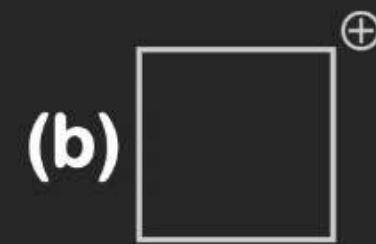
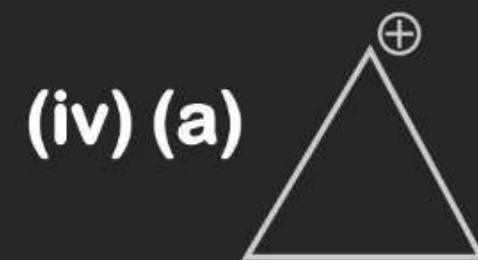
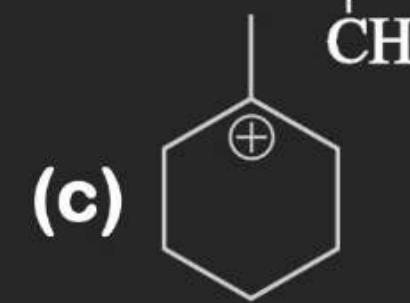
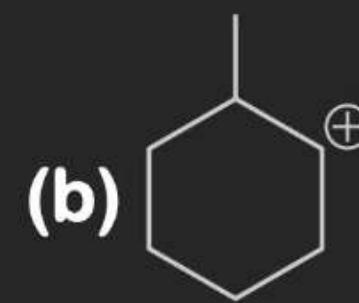
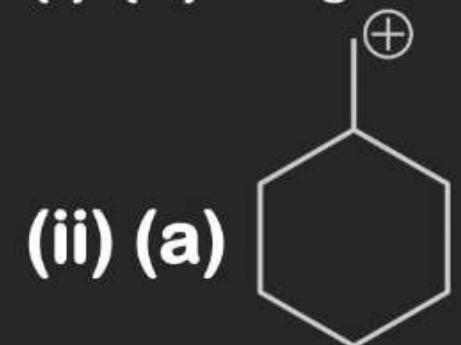
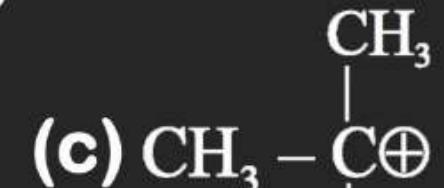
Q.7 Write down the structure of the following molecule and comment on aromaticity?

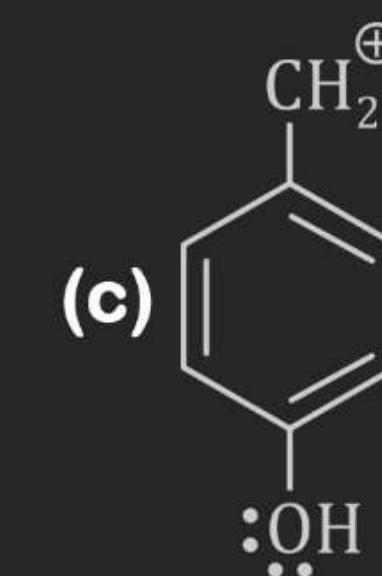
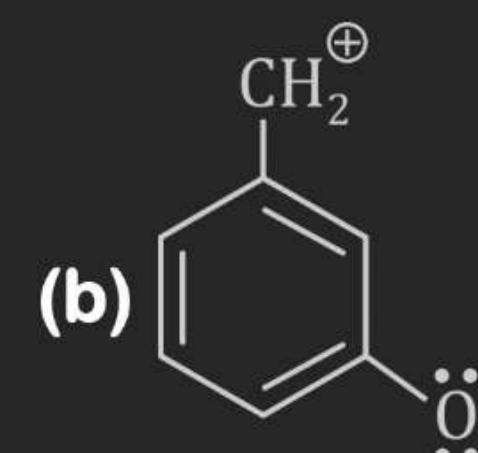
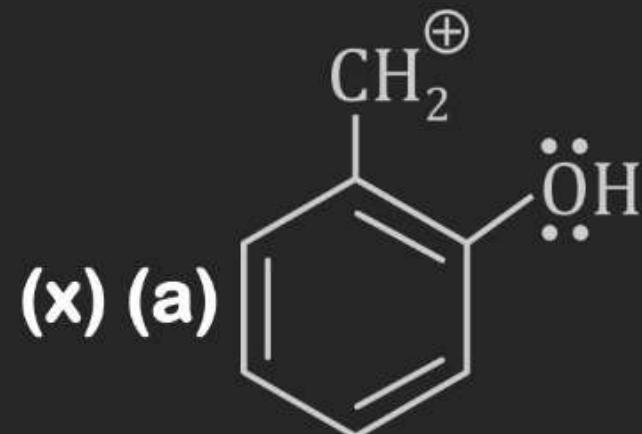
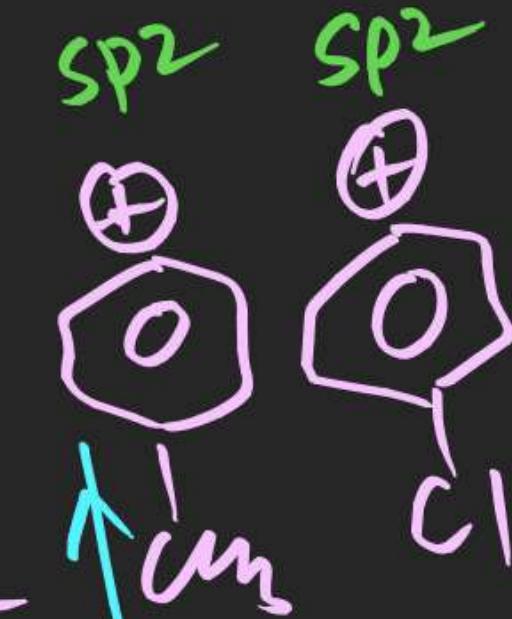
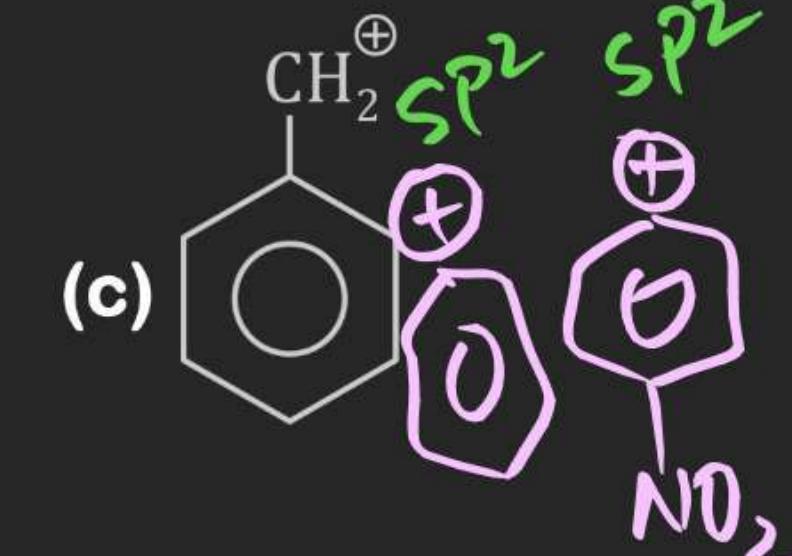
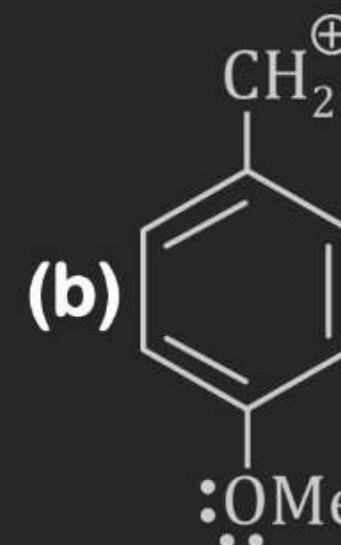
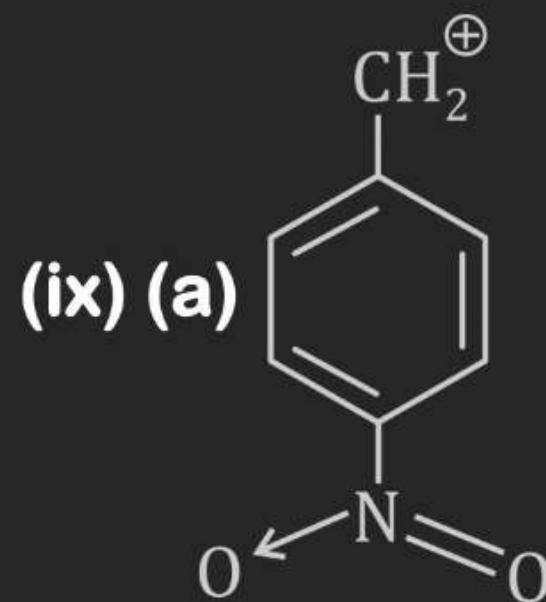
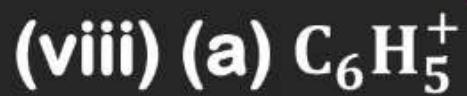
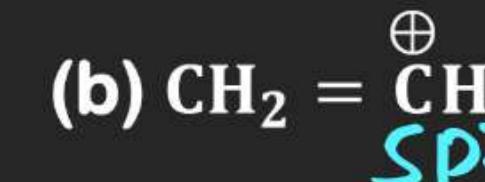
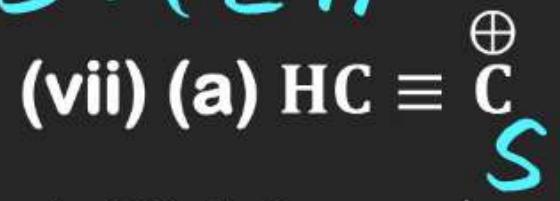


Q.8 Select the least stable one :

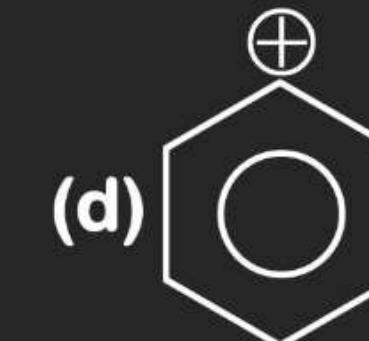
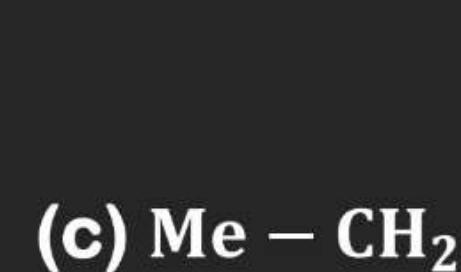
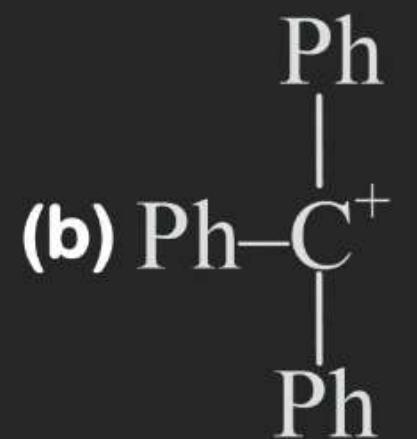
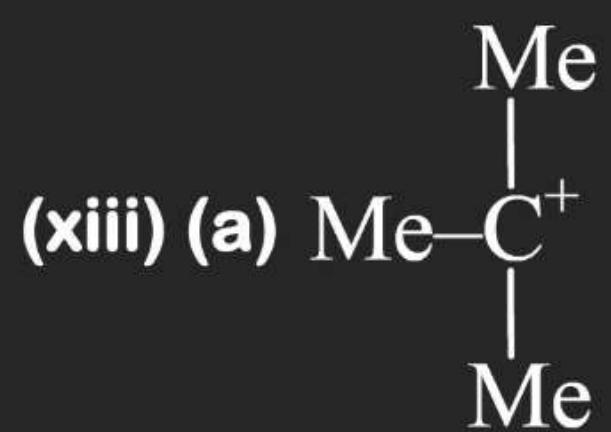
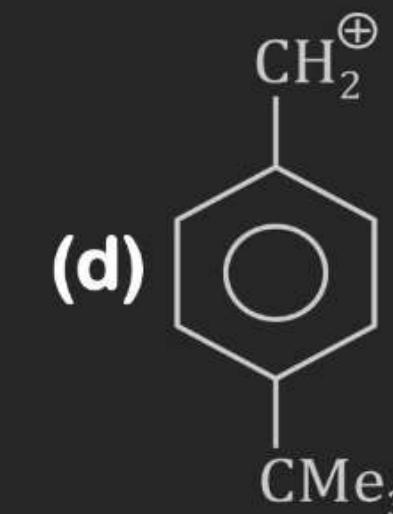
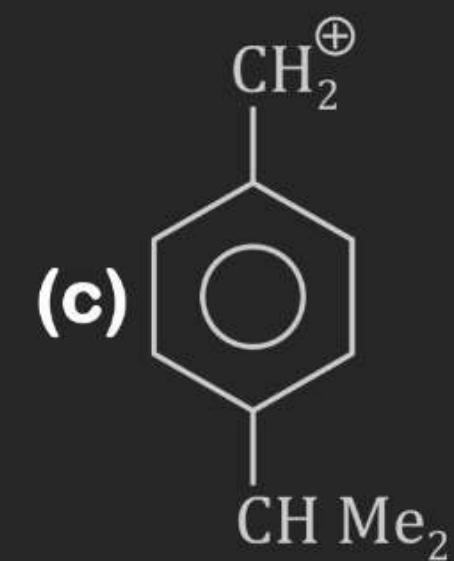
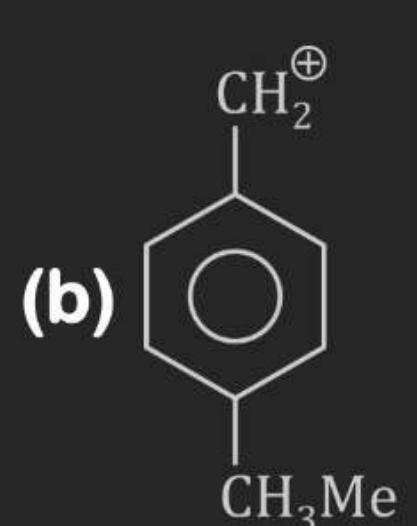
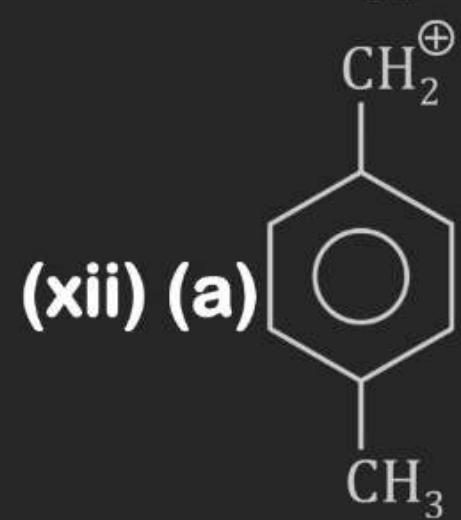
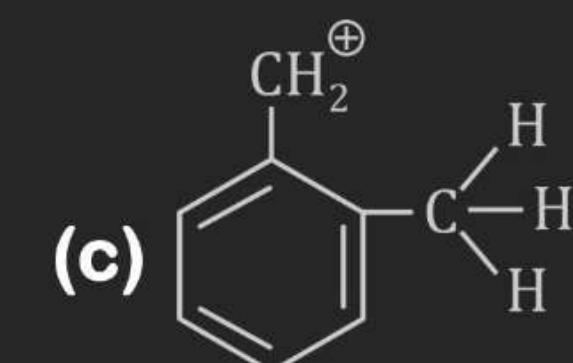
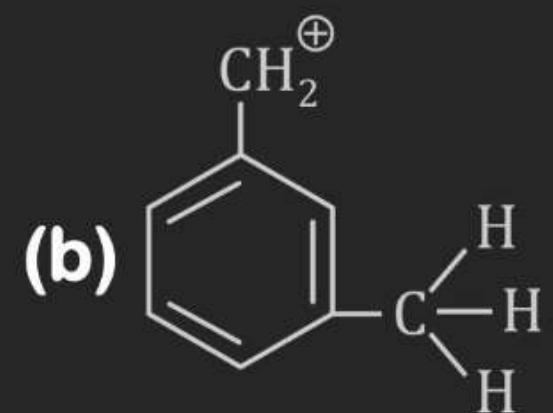
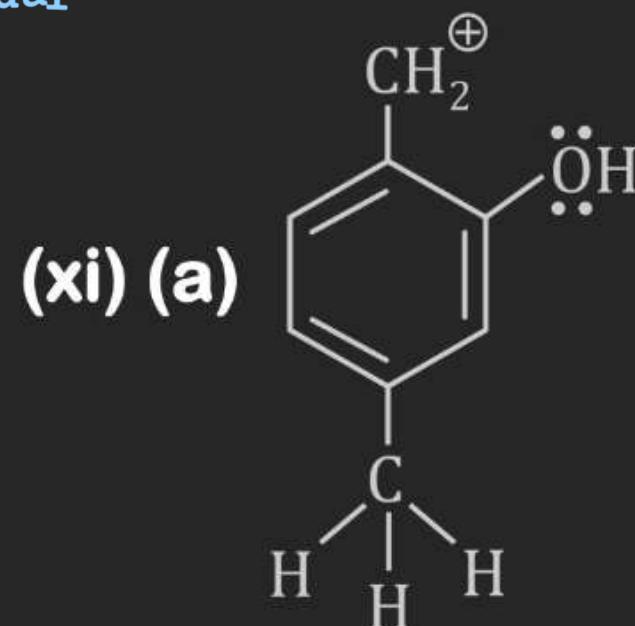


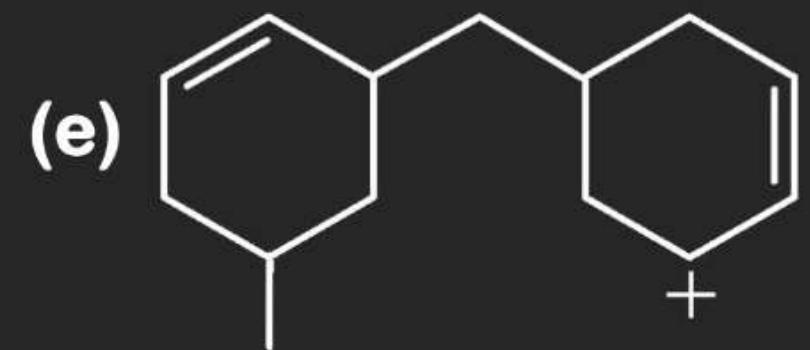
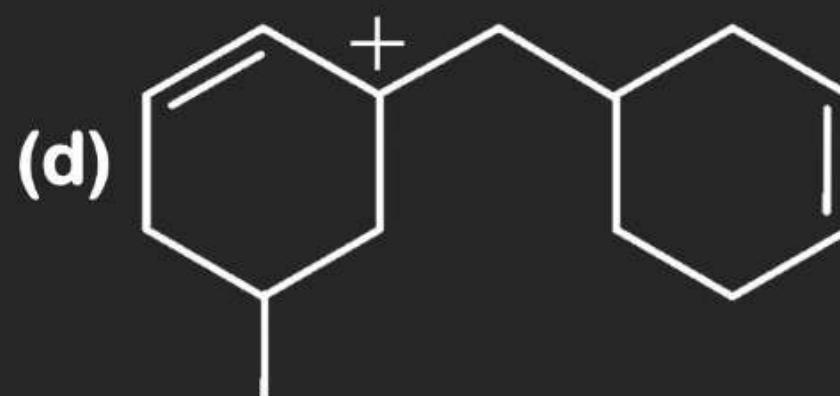
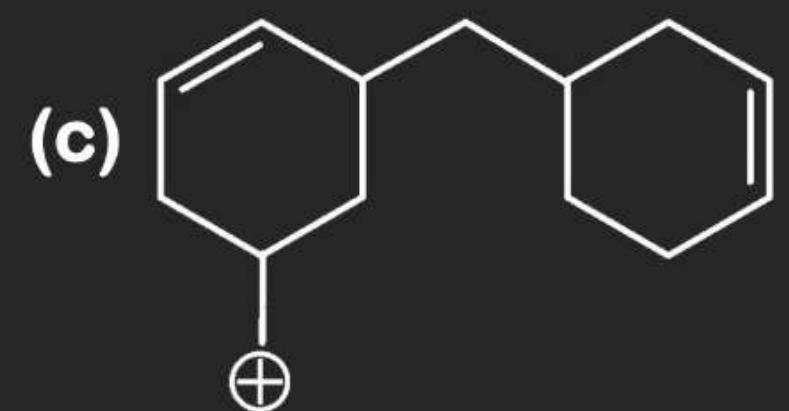
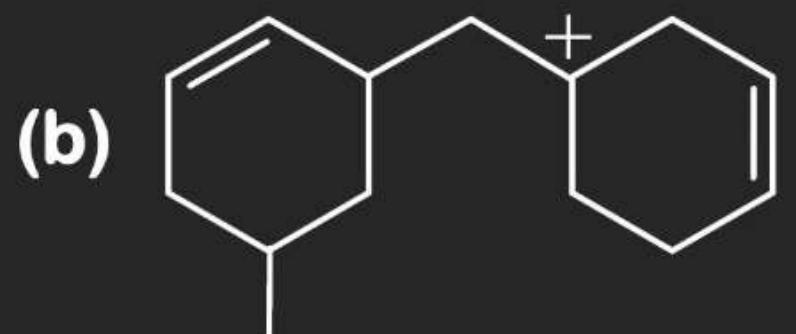
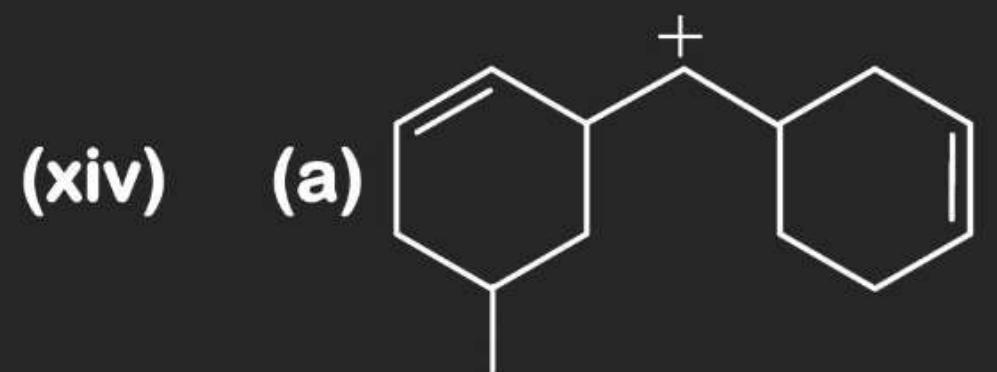
Q.9 Write stability in decreasing order of following intermediates:

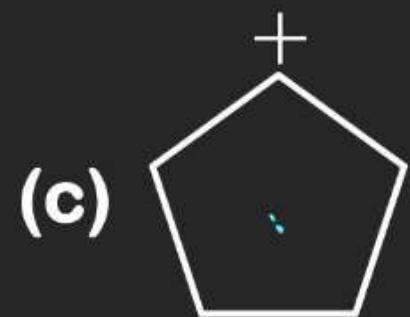
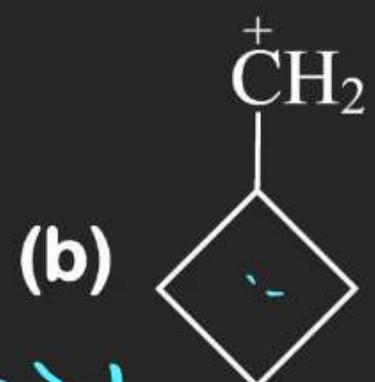
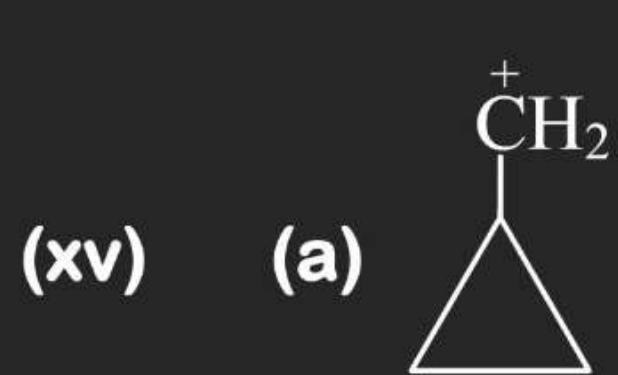


YsdEn

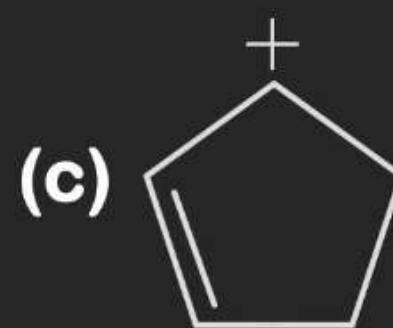
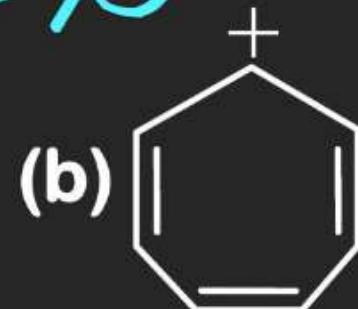
C > a > d > b







a > c > b



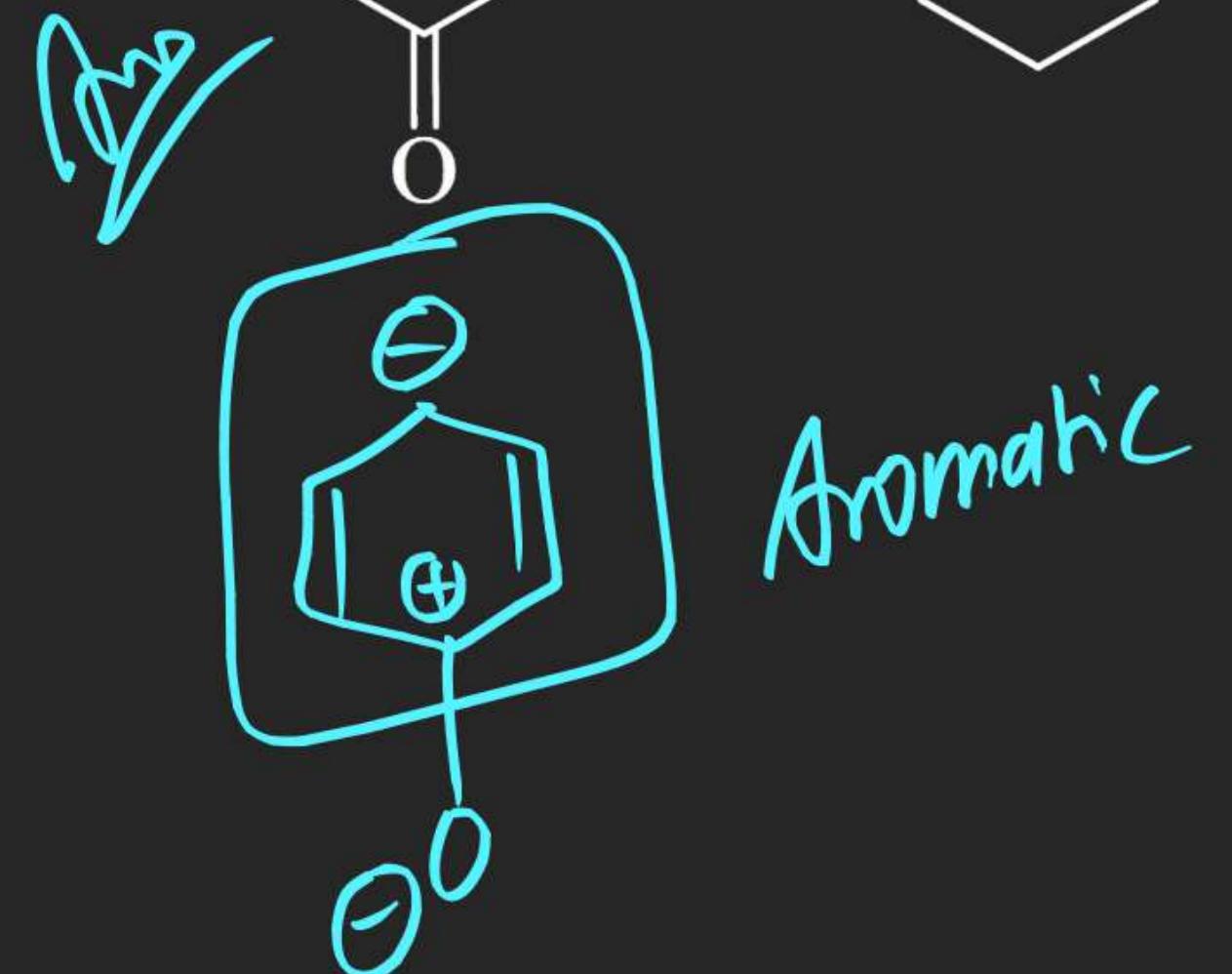
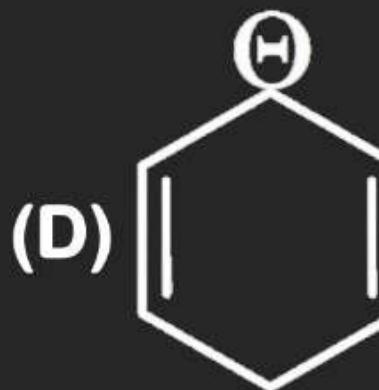
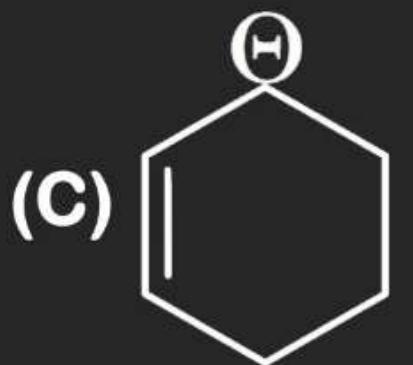
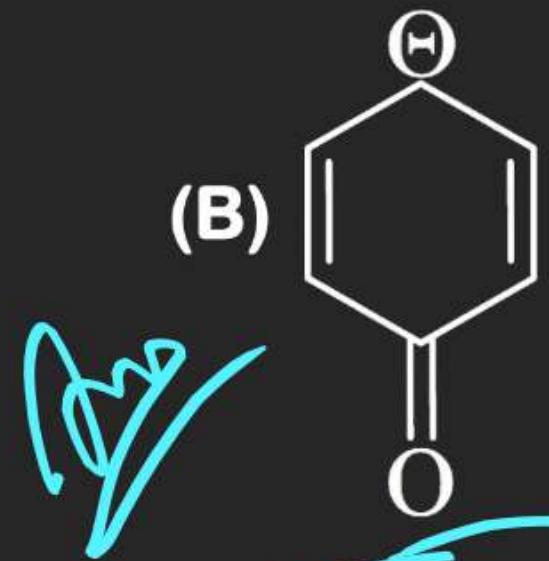
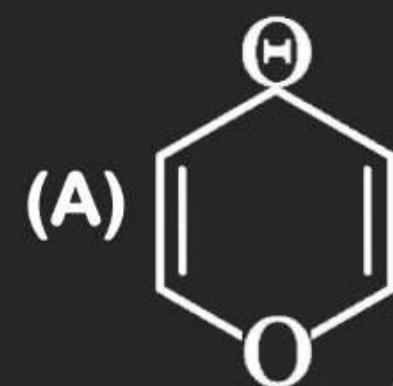
Anti Aromatic

Aromatic

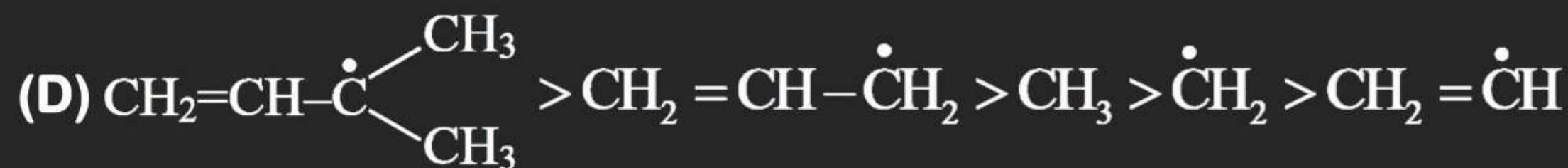
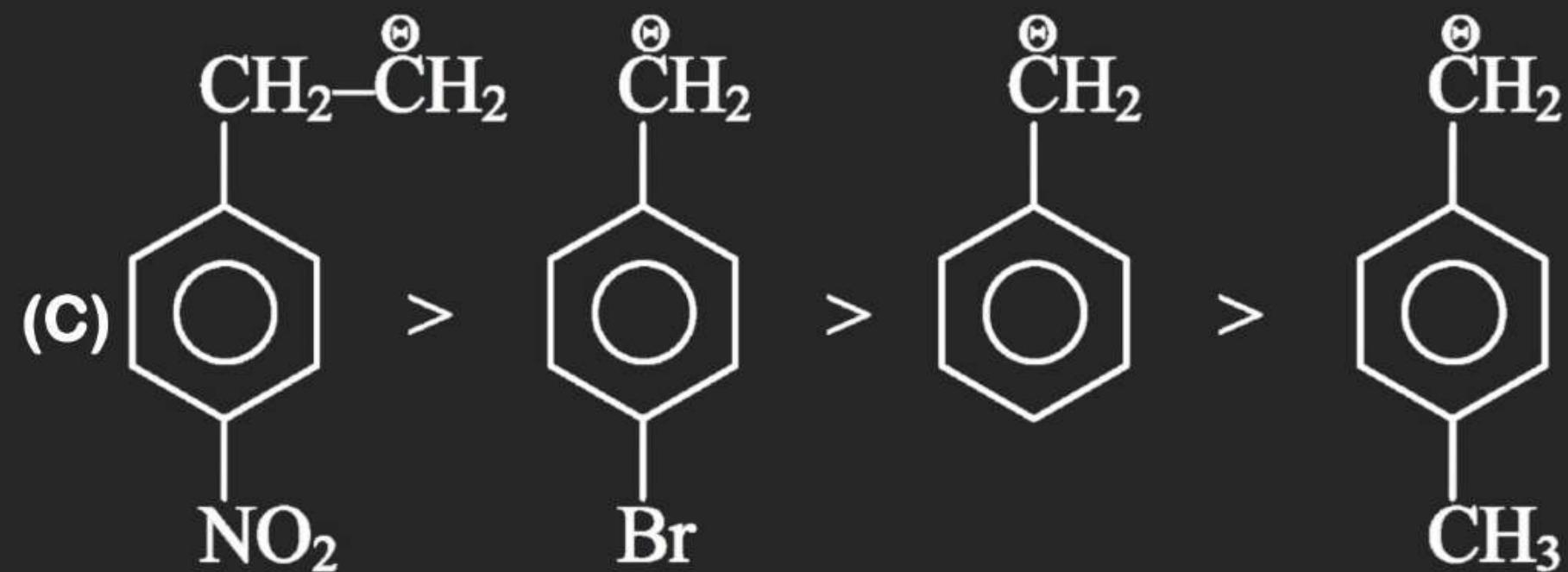
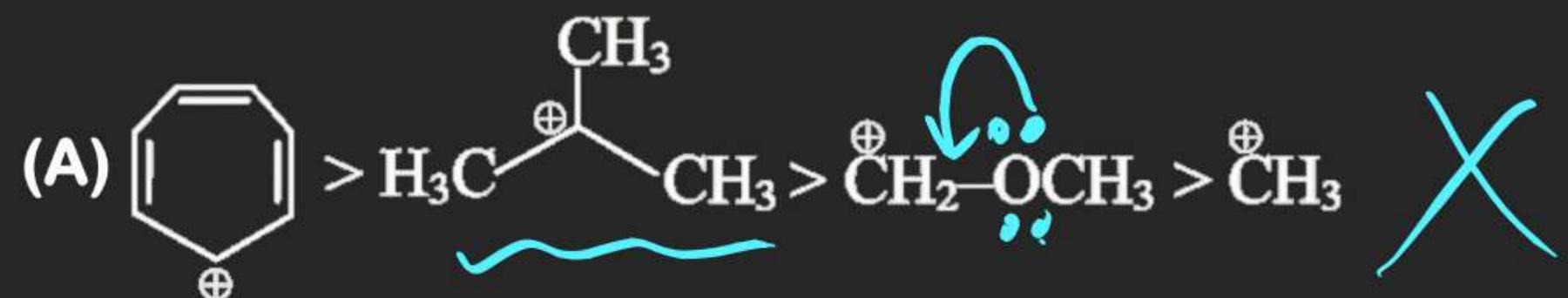
Non Am

b > c > a

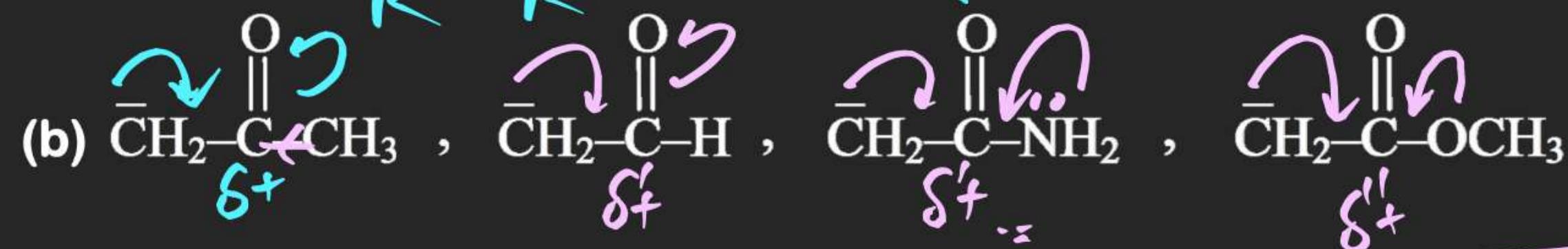
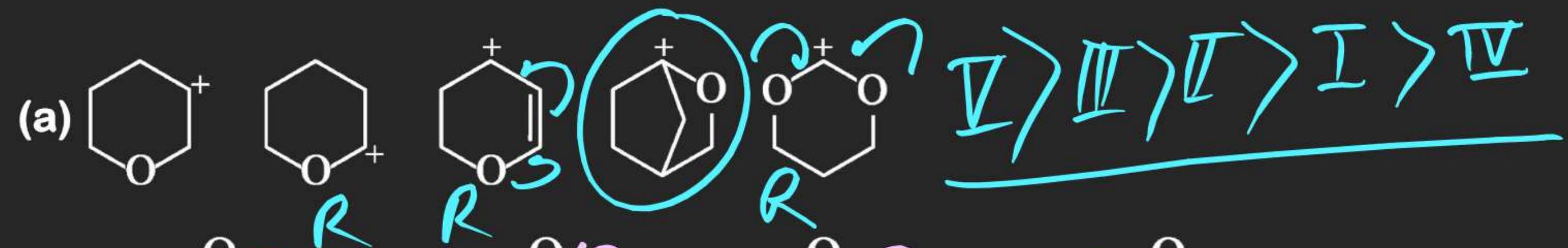
Q.20 Identify the most stable anion.



Q.21 Correct order of stability:



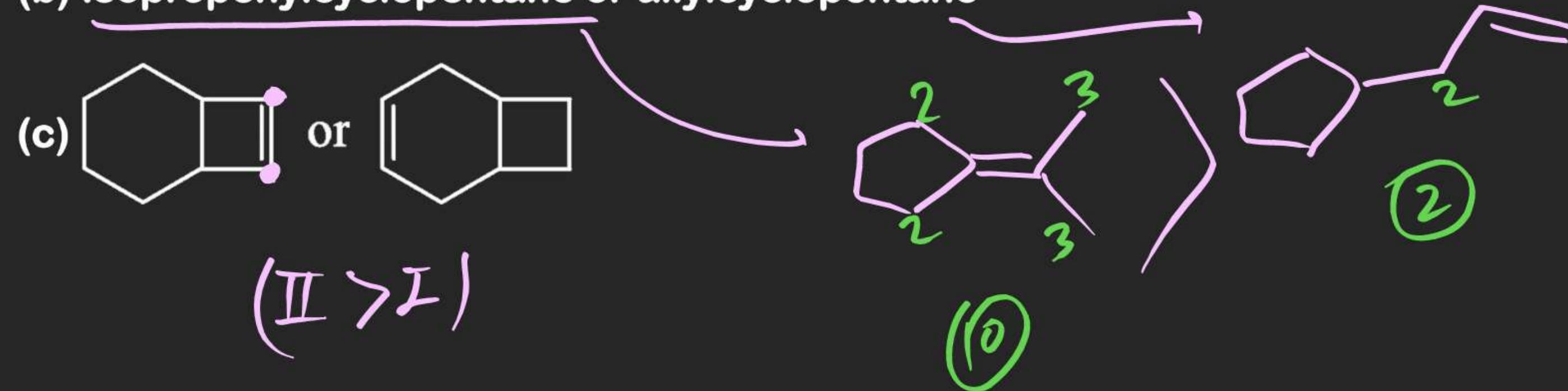
Q.22 Rank the following sets of intermediates in increasing order of their stability giving appropriate reasons for your choice.



Q.25 Choose the more stable alkene in each of the following pairs. Explain your reasoning.

(a) 1-Methylcyclohexene or 3-methylcyclohexene

(b) Isopropenylcyclopentane or allylcyclopentane

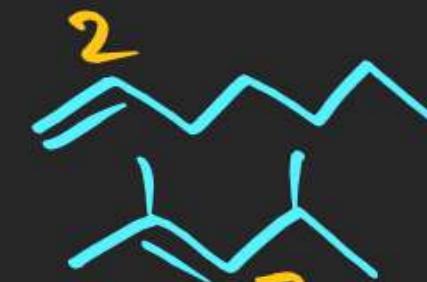


Q.26 Match each alkene with the appropriate heat of combustion:

Heats of combustion (kJ/mol) : 5293; 4658; 4650; 4638; 4632

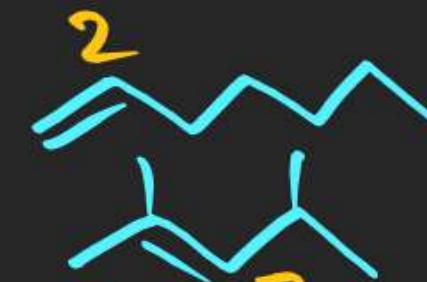
(a) 1-Heptene

7C



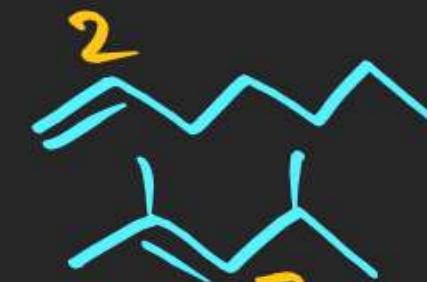
(b) 2,4-Dimethyl-1-pentene

7C



(c) 2,4-Dimethyl-2-pentene

7C

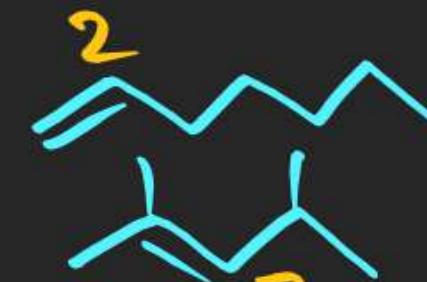


(d) 4,4-Dimethyl-2-pentene

7C

(e) 2,4,4-Trimethyl-2-pentene

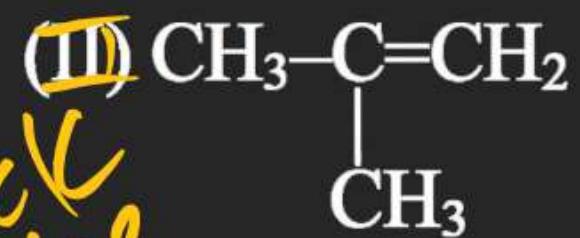
8C



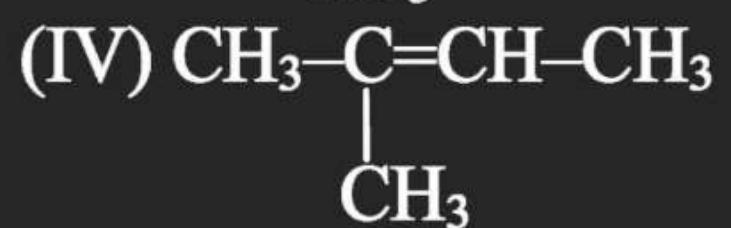
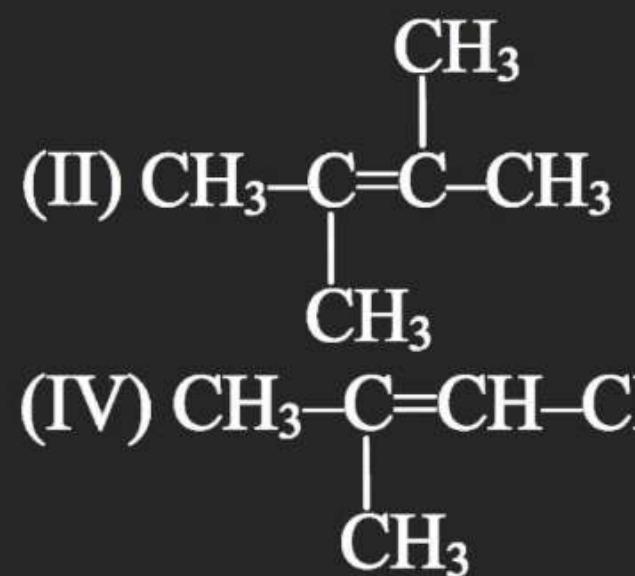
C \Rightarrow 4632

NO. of C atom
d $\frac{1}{\text{Stability}}$

C \Rightarrow 5293

Q.27 Stability of:

Check notes.



in the increasing order is :

- (A) I < III < IV < II
(C) I < IV < III < I

- (B) I < II < III < IV
(D) II < III < IV < I

Q.29 Rank the following alkenes in decreasing order of heat of combustion values:



(I)



(II)



(III)



(IV)

(A) II > III > IV > I

(B) II > IV > III > I

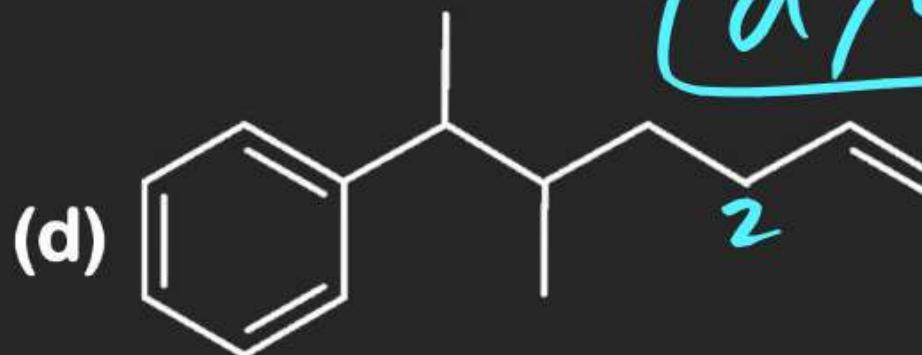
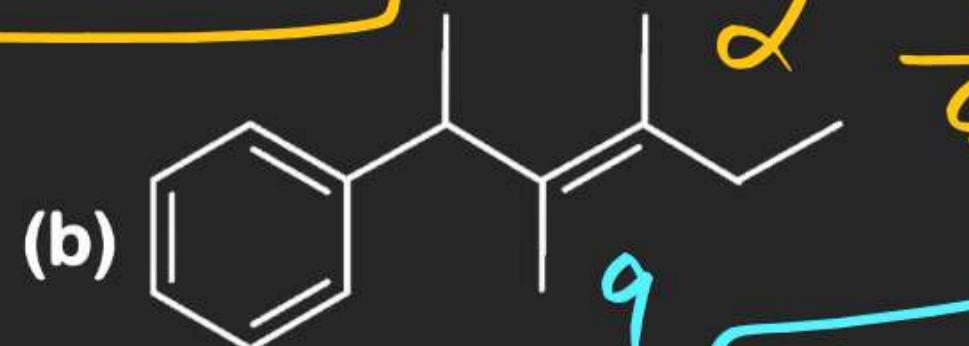
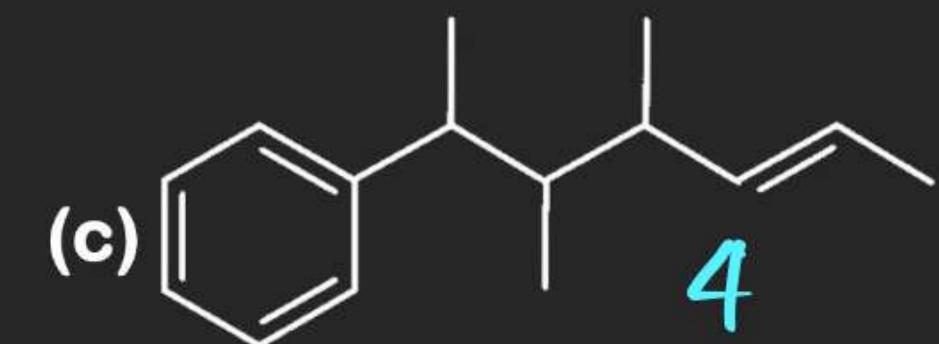
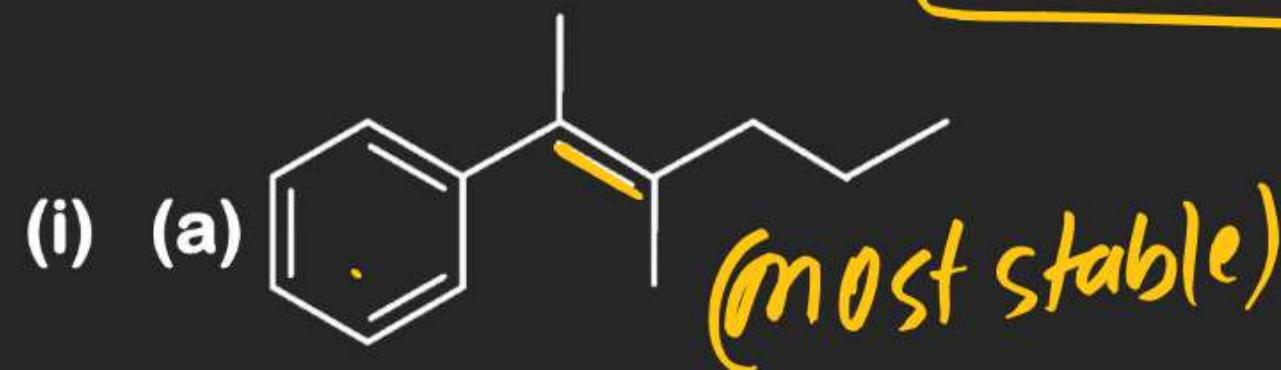
(C) I > III > IV > II

(D) I > IV > III > II

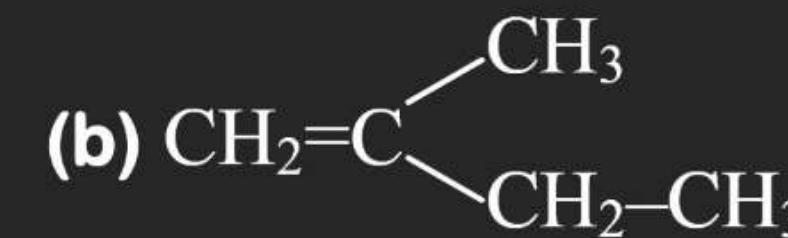
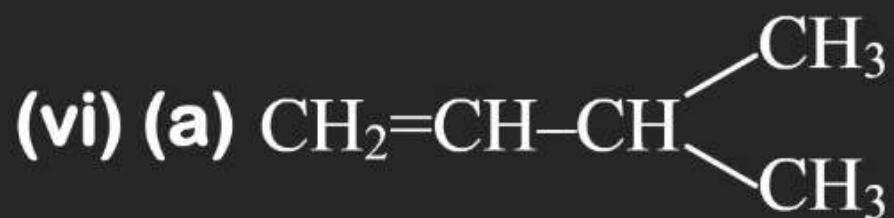
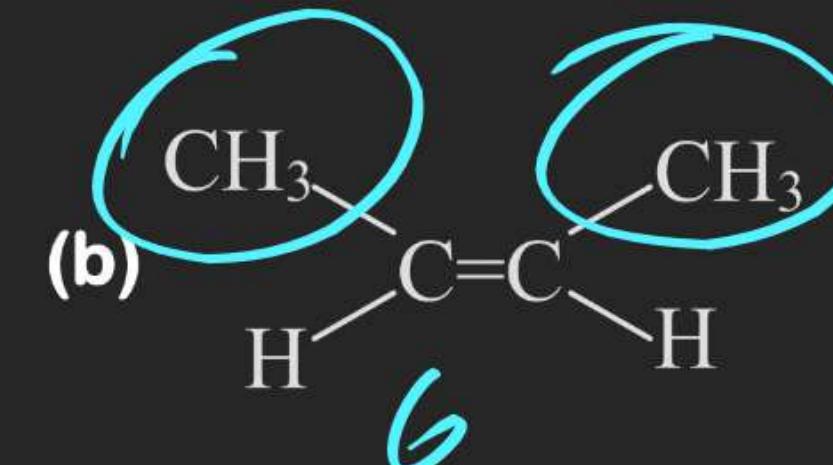
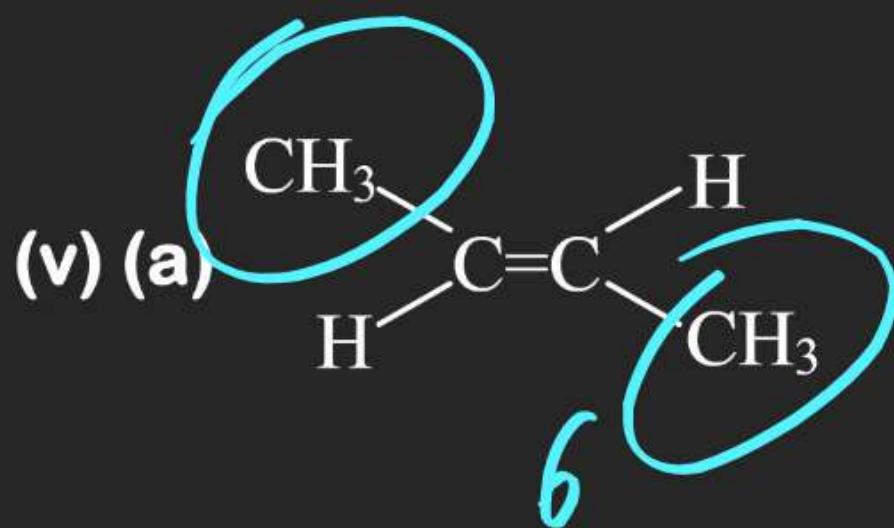
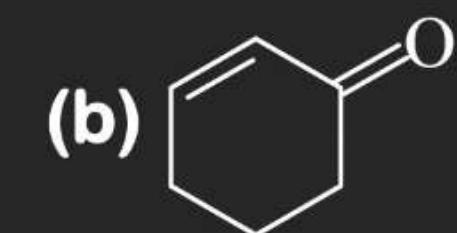
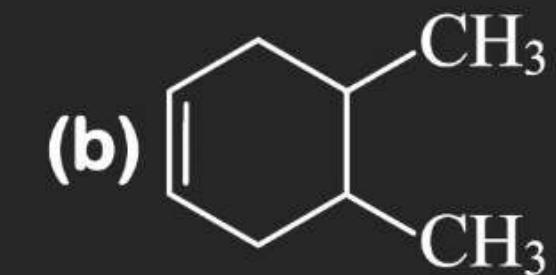
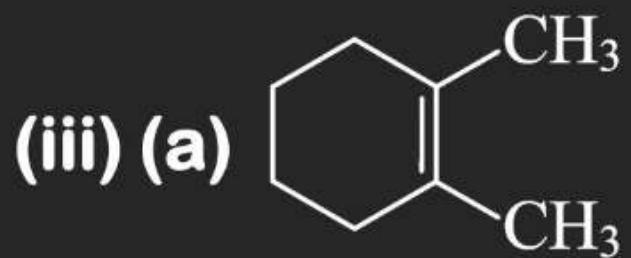
no C d Stability

Q.30 Write decreasing order of heat of hydrogenation :

$\text{HOH} \propto \text{no. of } \alpha\text{-Buns}$
 \propto stability.

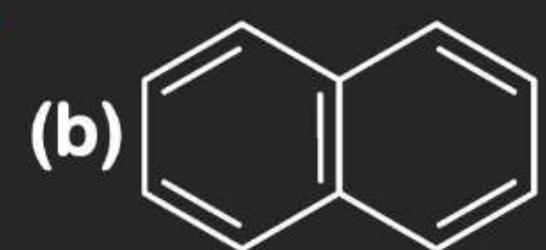
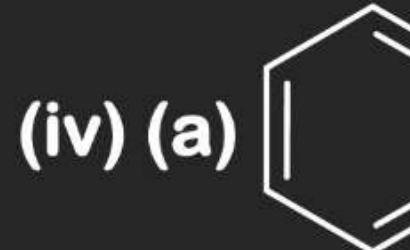
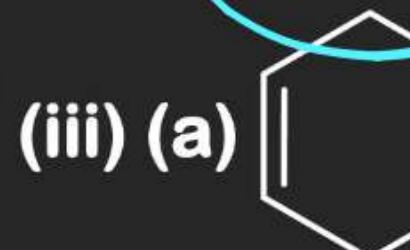
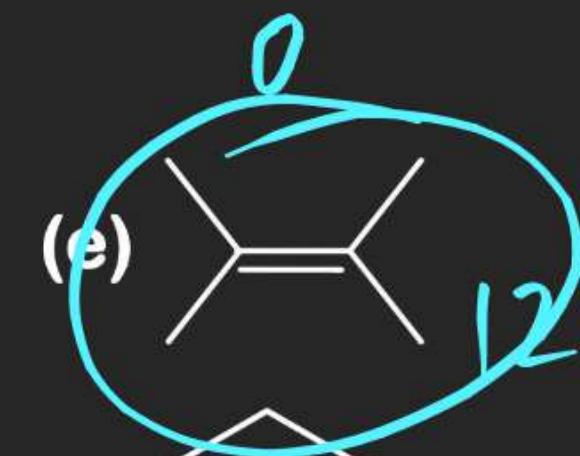
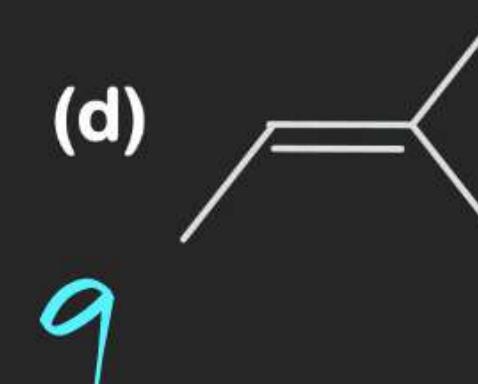
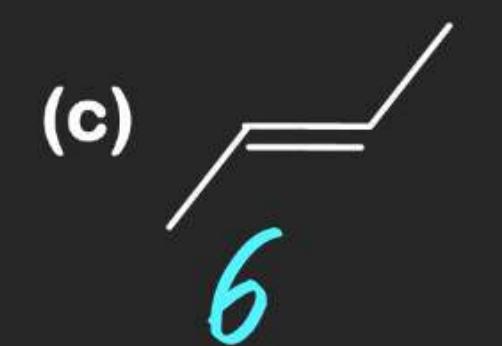
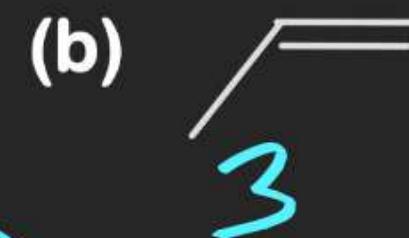
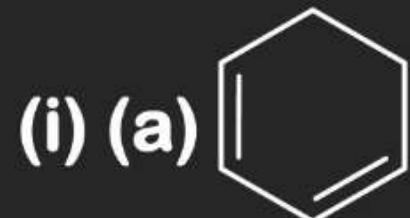


$d > c > b > a$



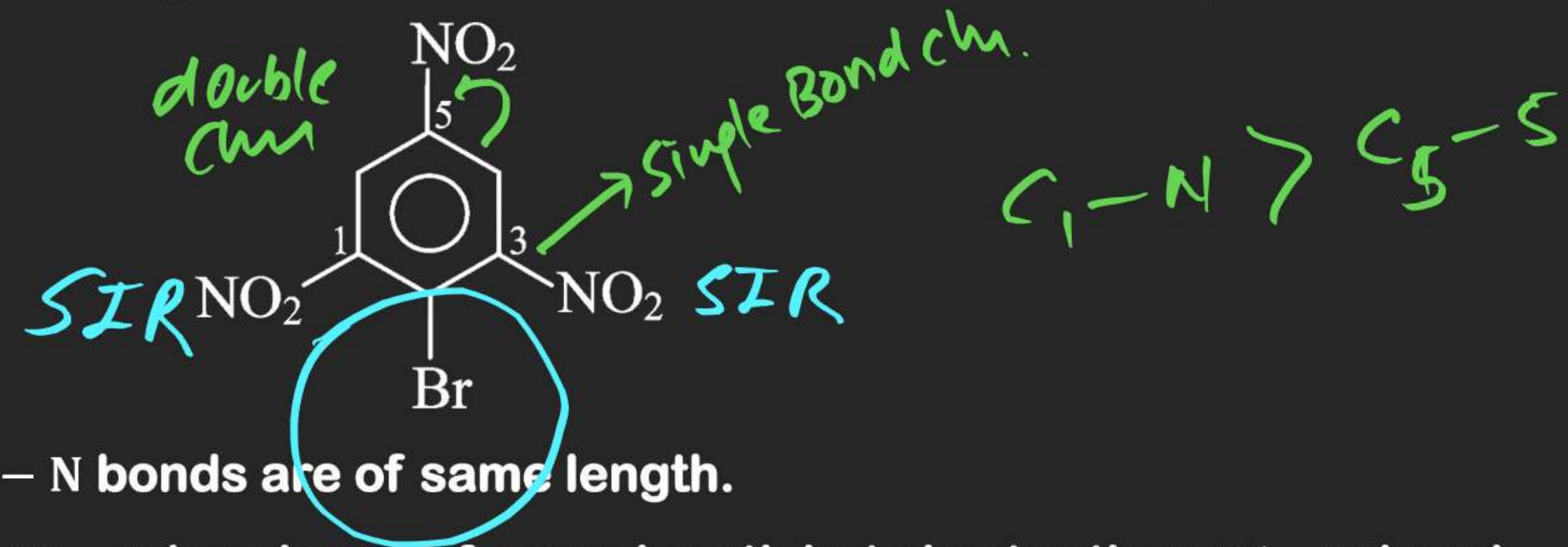
31. Write increasing order of heat of hydrogenation :

Stability.



(HOH per benzene ring)

38. Which of the following statements would be true about this compound:

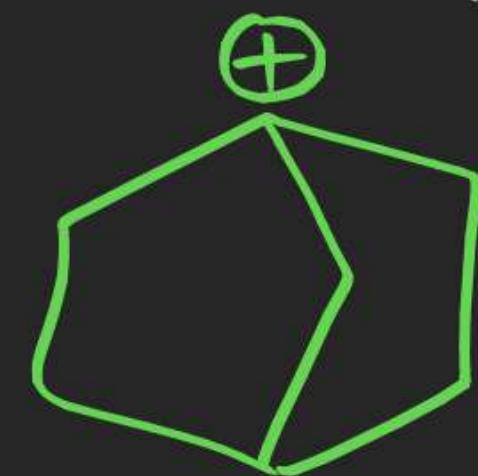


- (A) All three $\text{C} - \text{N}$ bonds are of same length.
- (B) $\text{Cl} - \text{N}$ and $\text{C}_3 - \text{N}$ bonds are of same length but shorter than $\text{C}_5 - \text{N}$ bond.
- (C) $\text{Cl} - \text{N}$ and $\text{C}_3 - \text{N}$ bonds are of same length but longer than $\text{C}_5 - \text{N}$ bond.
- (D) $\text{Cl} - \text{N}$ and $\text{C}_3 - \text{N}$ bonds are of different length but both are longer than $\text{C}_5 - \text{N}$ bond

40. Why a cation like



is not possible.



(11) Aromatic

(13) Aromatic

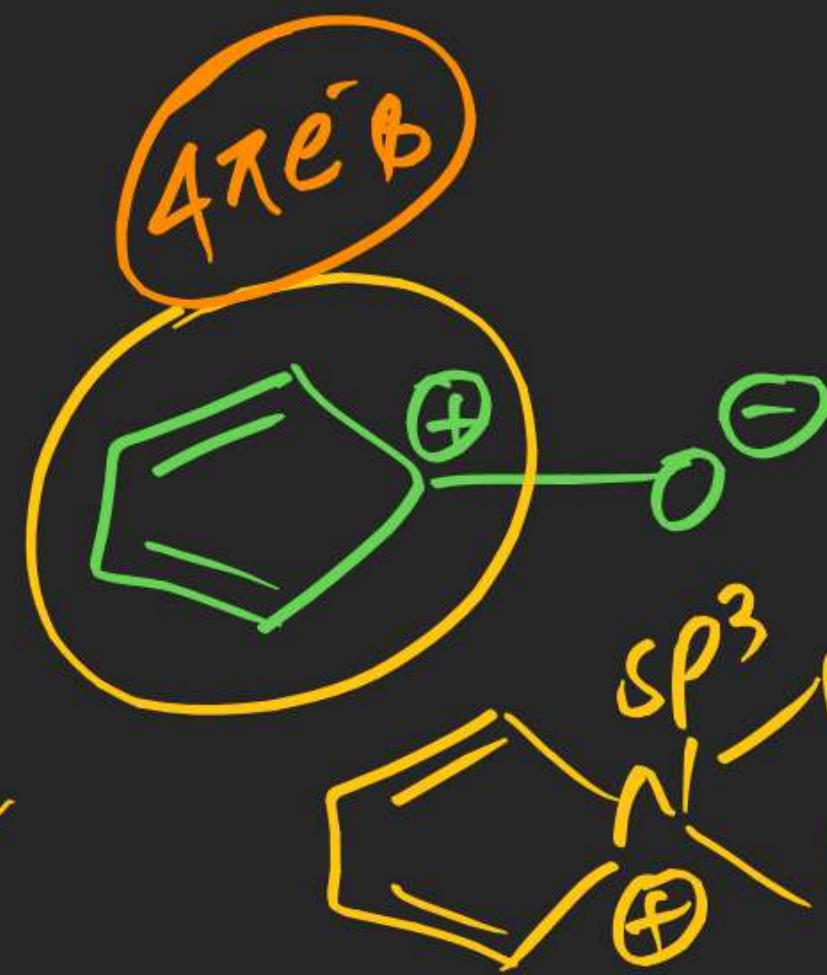
(14) "

(15) Anti Aromatic

(16) Non Aromatic

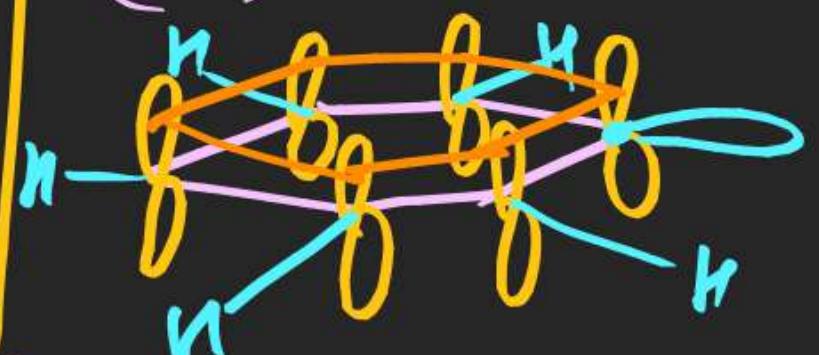
(17) Aromatic

(18) - (20) (Non Aromatic)

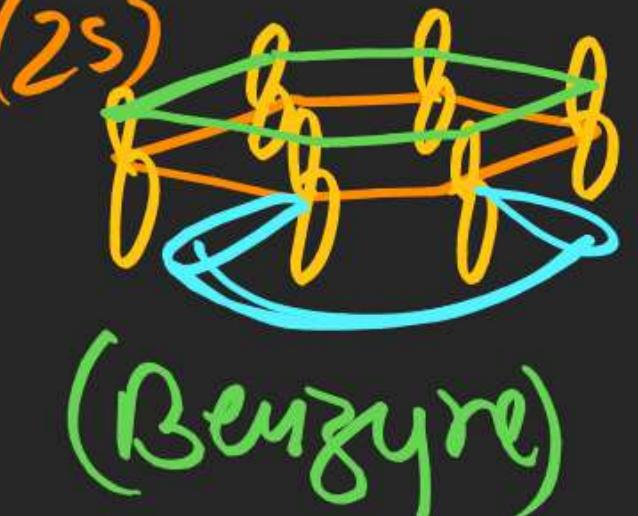


(21) - (30) Aromatic

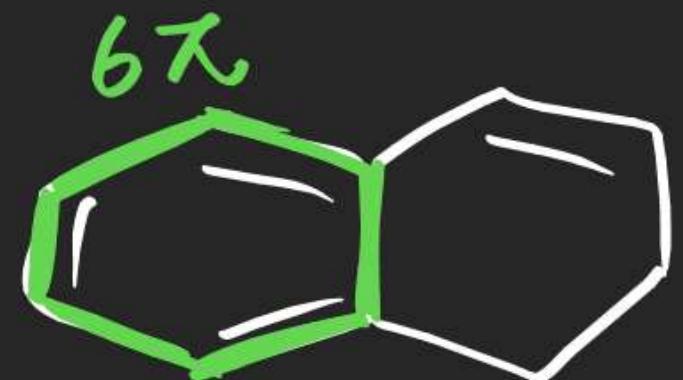
(22)



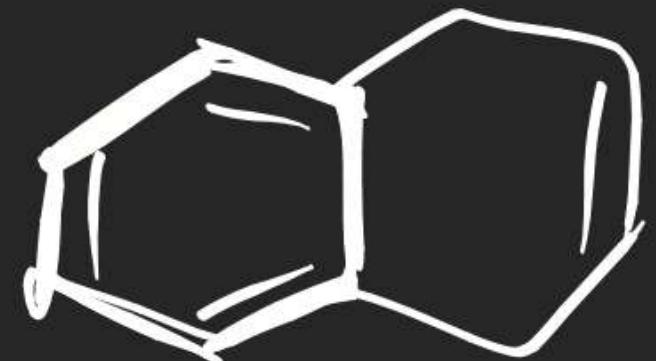
(25)



(28)

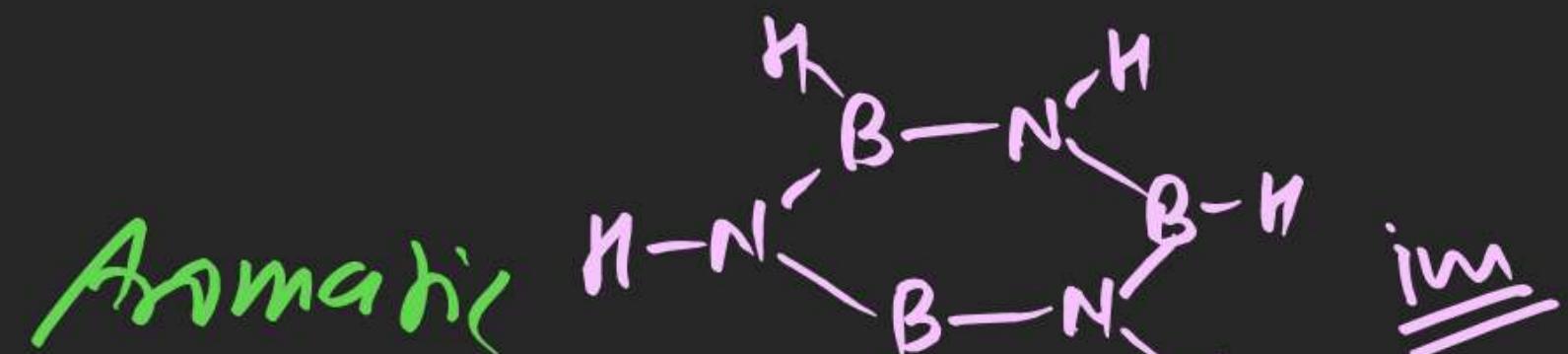


(29)



(31) And Aromatic

(32) Aromatic



(33) - (39) Aromatic

(40) Non Aromatic

(41) & (42) Aromatic

(43) Non Aromatic



(44) - (45) Aromatic (Tub shaped)

(46) Non Aromatic

(47) Aromatic

(48) N-Aromatic

(49) Aromatic

(50) Nl-Aromatic

(51) Aromatic

(52) Aromatic

Sheat Excessus

SKM - Nucleus
edvalency