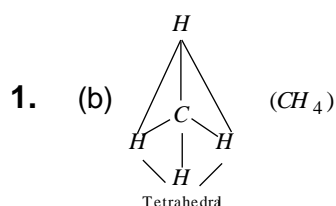


Bonding and hybridisation in organic compounds



2. (c) Tetrahedron

3. (b) CH₂ = CH₂ both the carbon atoms are sp² hybridised.

4. (b) sp²

5. (c) Type

sp³

s-character
25%

sp²

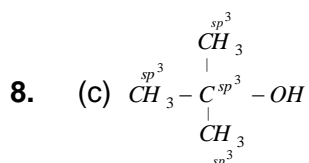
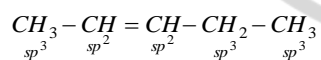
33.33%

sp

50%

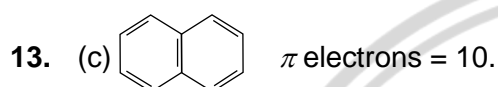
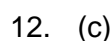
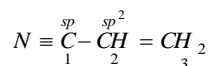
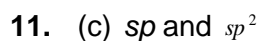
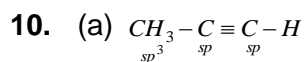
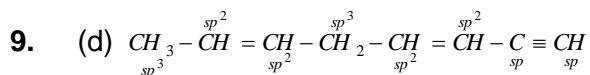
6. (a) $\overset{sp}{CH} \equiv \overset{sp}{CH}$

7. (b) sp² and sp³



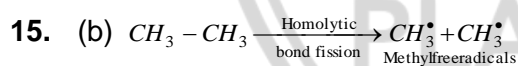
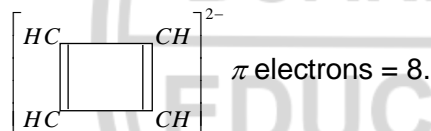
All the carbon atoms are sp³ hybridized.



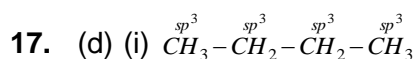
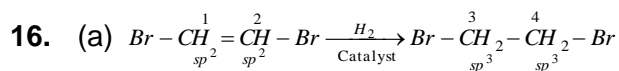
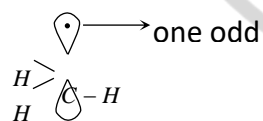


π bonds = 5

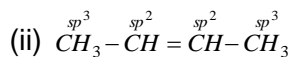
hence electrons are double



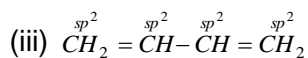
free radical is formed which is sp^2 -hybridized.



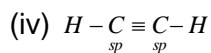
only sp^3 hybridized carbon



Both sp^2 and sp^3 hybridized carbon.

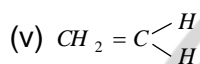


Only sp^2 hybridized carbon.



Only sp hybridized carbon.

18. (a) (i) Benzene and its derivatives are always planar because all the carbon in benzene are sp^2 hybridized.



Both the carbon are sp^2 hybridized. Therefore planar.

19. (a) $\begin{matrix} H \\ | \\ Cl - C - Cl \\ | \\ H \end{matrix}$ Tetrahedral structure
 sp^3 hybridization

20. (c) $\begin{matrix} & H & H \\ & | & | \\ H - C = C - C - C - H \\ | & | & | & | \\ H & H & H & H \end{matrix}$; 11 σ bonds and 1 π bond.

