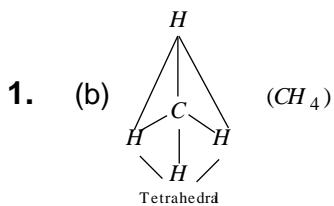


Bonding and hybridisation in organic compounds



2. (c) Tetrahedron

3. (b) $CH_2 = CH_2$ both the carbon atoms are sp^2 hybridised.

4. (b) sp^2

5. (c) Type

sp^3

s-character

25%

sp^2

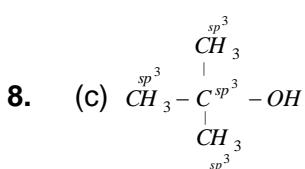
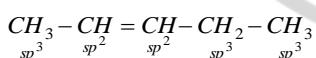
33.33%

sp

50%

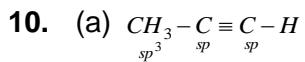
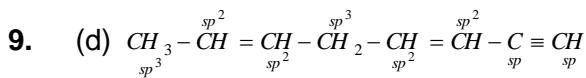
6. (a) $\overset{sp}{CH} \equiv \overset{sp}{CH}$

7. (b) sp^2 and sp^3

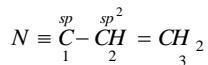


All the carbon atoms are sp^3 hybridized.

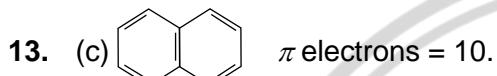




11. (c) sp and sp^2



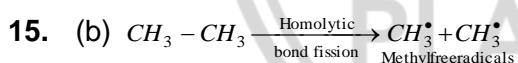
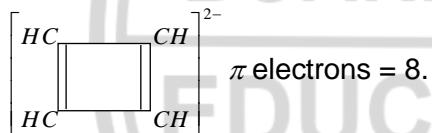
12. (c)



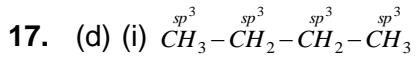
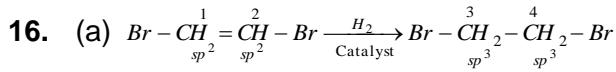
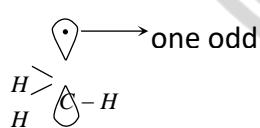
π bonds = 5

hence electrons are double

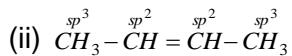
14. (d) Cyclobutadienyl anion $(C_4H_4)^{2-}$



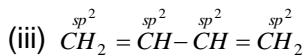
free radical is formed which is sp^2 -hybridized.



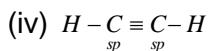
only sp^3 hybridized carbon



Both sp^2 and sp^3 hybridized carbon.

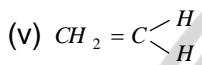


Only sp^2 hybridized carbon.

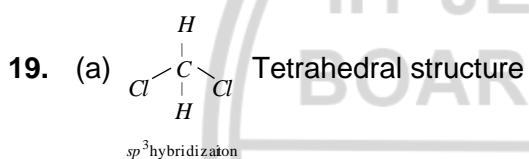


Only sp hybridized carbon.

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.



20. (c) $\begin{array}{ccccccc} & H & & H & & H & \\ & | & & | & & | & \\ H - C & = & C & - & C & - & C - H ; & 11\sigma \text{ bonds and } 1\pi \text{ bond.} \\ & | & & | & & | & \\ & H & & H & & H & \end{array}$

