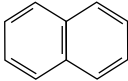
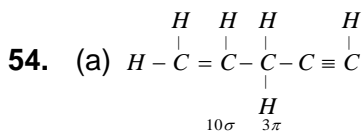


Bonding and hybridisation in organic compounds

41. (c) Geometry in sp^2 -hybridisation is trigonal.
42. (a) $\underset{sp^2}{CH} = \underset{sp}{C} = \underset{sp^2}{CH} - \underset{sp^3}{CH_3}$
43. (c) Single bond has longest distance of bonds so C_2H_6 ethane is correct answer.
44. (b) and (c) A **conjugated system** means **double – single – double** pattern, AND all carbons involved must be **sp^2 hybridized** → allows π -electron delocalization.
45. (b) $CH_3 - \underline{CH_2}OH$
46. (a) $109^\circ 28'$
47. (b) $H\underset{sp}{C} \equiv \underset{sp}{C} - \underset{sp^2}{CH} = CH_2$
48. (c) In ethylene molecule carbons are sp^2 hybridised so its structure is trigonal planar
49. (a) $\underset{sp}{CH} \equiv \underset{sp}{CH}$
50. (c) sp^3 -hybridised orbitals
51. (c) sp^2
52. (c)  5 π bonds are present in naphthalene.



53. (c) sp^3

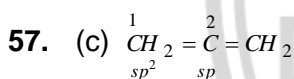


55. (C) To compare acidity of hydrocarbons (alkane, alkene, alkyne), we check **stability of conjugate base**.

More **s-character** = more acidity

Bond type	Hybridization	% s-character	Acidity order
C-H (alkane)	sp^3	25%	Least acidic
C=C-H (alkene)	sp^2	33%	Moderate
C≡C-H (alkyne)	sp	50%	Most acidic ✓

56. (c) Graphite is in planar form while diamond is in tetrahedral form



58. (a) C_2H_5OH

