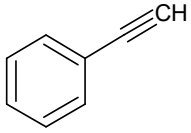
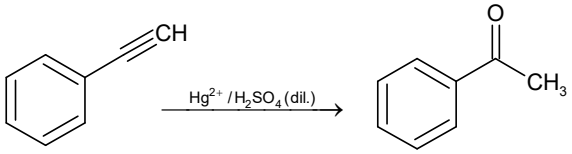
Daily Tutorial Sheet-15	Level - 3

159. (a) Molecular formula suggests that (A) is

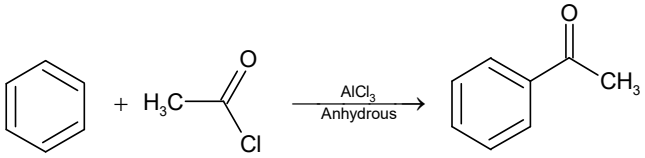


(b)



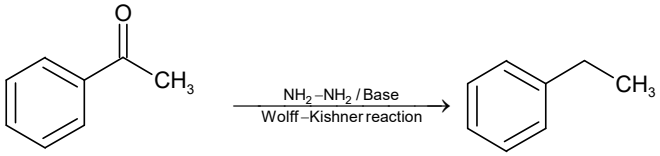
(A) (B)

(c)



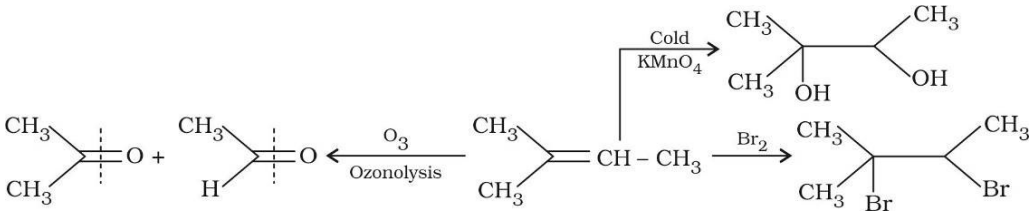
(B)

(d)



(C)

160. (A) : $(CH_3)_2C = CHCH_3$



161. (A): $(CH_3)_3CC \equiv CH$ (B): $(CH_3)_3CC \equiv C^-Na^+$

(C): $(CH_3)_3CC \equiv C - CH_2CH_2CH_3$ (D): $(CH_3)_3CCH = CHCH_2CH_2CH_3$

Reactions involved are

Only terminal alkyne reacts with $NaNH_2$

$$(CH_3)_3CC \equiv CH \xrightarrow{NaNH_2} (CH_3)_3CC \equiv C^-Na^+$$

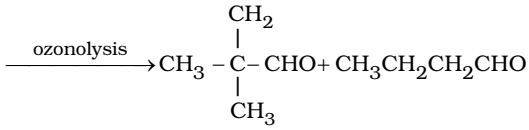
(A) (B)

$$(CH_3)_3CC \equiv C^-Na^+ + ClCH_2CH_2CH_3 \longrightarrow (CH_3)_3CC \equiv C - CH_2CH_2CH_3$$

(B) (C)

$$(CH_3)_3CC \equiv C - CH_2CH_2CH_3 + H_2 \xrightarrow[\text{catalyst}]{\text{Lindlar}} (CH_3)_3CCH = CHCH_2CH_2CH_3$$

(C) (D)



162. C_6H_{12} (A) decolourises Br_2 water $\Rightarrow$ A is unsaturated compound.

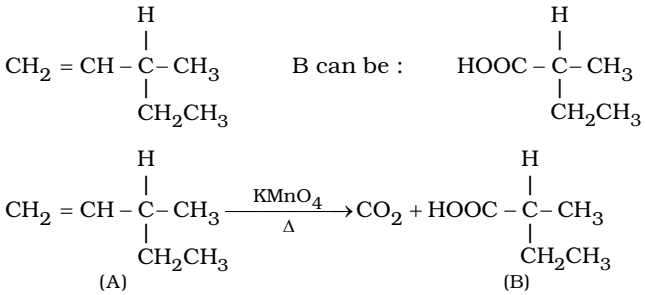
Molecular formula of

(A) Suggested (A) is alkene with one (C = C) bond.

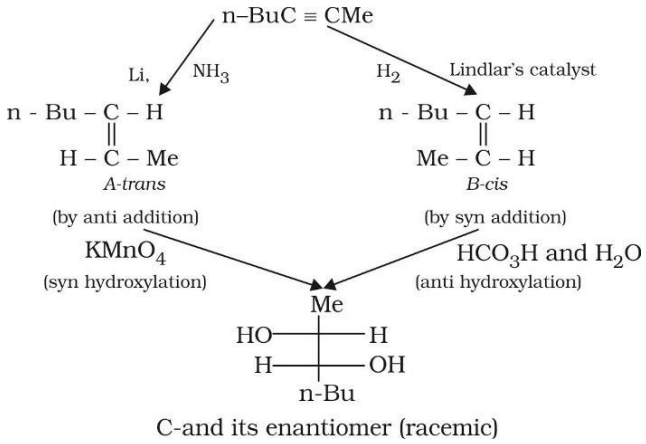
(B) has five carbon atoms which indicates that terminal carbon is lost during $KMnO_4$ oxidation.

Hence, (C = C) is at terminal position. $CH_2 = CH - R$(A)

Since (B) is resolvable hence, B and hence, R of (A) has chirality. A can be :

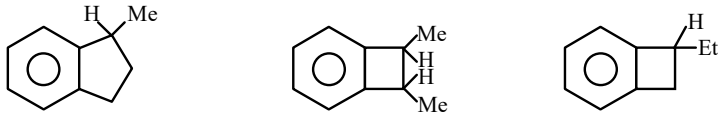


163.



C-and its enantiomer (racemic)

164. (a) The formula reveals a fifth degree of unsaturation in addition to the four of the benzene ring. This fifth degree of unsaturation must be a ring, not C = C, because the Br_2 test is negative. Production of phthalic acid means the ring is fused to the benzene ring. This fused ring has the chiral carbon and must be a mono–alkyl–substituted five–membered or di–alkyl–substituted four– membered ring. Only in this way we can account for the additional four carbons of the formula.



1–Methylindane trans–1,2–Dimethylbenzcyclobutane 1–Ethylbenzcyclobutane

(b) The extra unsaturation is in the single side chain: (E) is 3–phenyl–1–butene, $CH_3CHPhCH = CH_2$