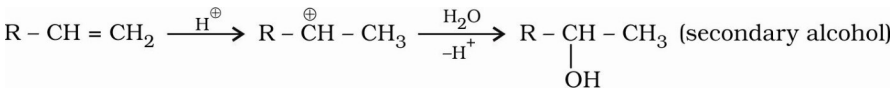
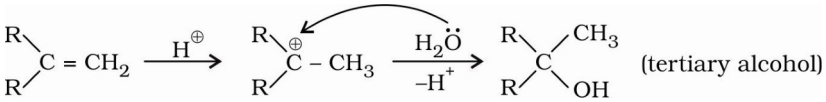
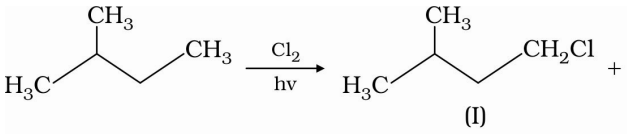
76.(C) $R_2CuLi + 2R'X \longrightarrow 2R - R' + CuX + LiX$

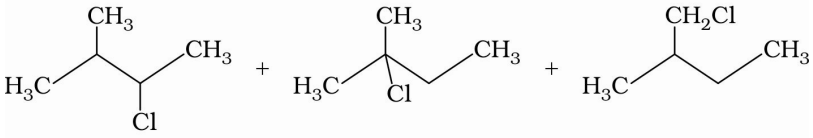
77.(B)





78.(B)





Since, fractional distillation cannot separate enantiomers (II + III and V + VI), M = 4 and N = 6.

79.(A) NOCl undergoes electrophilic addition on alkene as :

$NOCl \longrightarrow {}^{+}N = O + Cl^{-}$

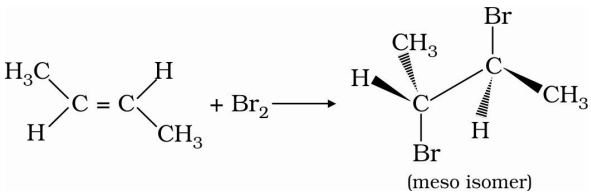
$CH_3 - CH = CH_2 + {}^{+}NO \longrightarrow CH_3 - \overset{+}{C}H - CH_2 \xrightarrow{Cl^-} CH_3 - CH(Cl) - CH_2(NO)$

80.(D) Electrophilic addition reaction more favourable.

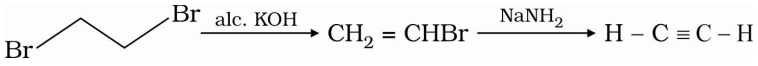
$H_2C = CH - OCH_3 \xrightarrow{HBr} H_3C - \overset{\oplus}{C}H - OCH_3 \xrightarrow{Br^-} H_3C - CH(Br) - OCH_3$

(more stable)

81.(A) Br_2 undergo anti-addition on C = C bonds as :

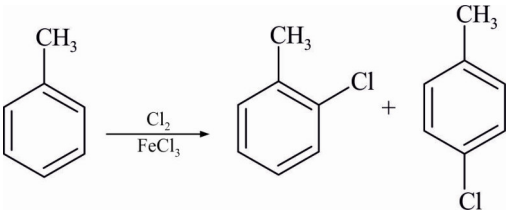


82.(B)



83.(A) $CH_3 - C \equiv CH + HBr \xrightarrow[\text{(from HBr)}]{\text{electrophilic addition of } H^+} CH_3 - C(Br) = CH_2 \xrightarrow{HBr} CH_3 - C(Br)_2 - CH_3$

84.(C) Due to o- and p-directing nature of CH_3 group.



85.(D) $-NO_2$ group shows $-M$ effect, so withdraws the electron density from the ring and hence deactivate the ring towards electrophilic aromatic substitution.

86.(C) Any aliphatic carbon with hydrogen attached to it, in combination with benzene ring, will be oxidized to benzoic acid by $KMnO_4 / H^+$.

87.(D) $CH_3 - CH = CH - CH_3 \xrightarrow{O_3} CH_3 - \underset{\underset{O-O}{|}}{\overset{O}{\diagup\diagdown}}CH - CH - CH_3 \xrightarrow[H_2O]{Zn} 2CH_3CHO$

88.(B) $-NO_2$ is electron withdrawing which will destabilize σ-complex.

89.(D) $CH_3 - MgX + CH_3 - C \equiv C - H \longrightarrow CH_4 + CH_3C \equiv C - MgX$

90.(D) $CH_3CH_2C \equiv C^- + Br - CH_2CH_2CH_2CH_3 \rightarrow \underset{\text{3-octyne}}{CH_3CH_2 - C \equiv C - CH_2CH_2CH_2CH_3}$