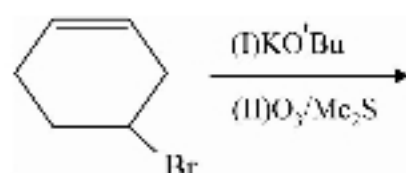


41. The major product(s) obtained in the following reaction is/are : (2019)



- (A) $\text{OHC}-\text{CH}_2-\text{CHO}$ (B) $\text{OHC}-\text{CH}_2-\text{CH}(\text{O}^t\text{Bu})-\text{CH}_2-\text{CHO}$
 (C) $\text{OHC}-\text{CH}_2-\text{CH}_2-\text{CHO}$ and $\text{OHC}-\text{CHO}$ (D) $\text{OHC}-\text{CH}_2-\text{CH}=\text{CH}-\text{CHO}$

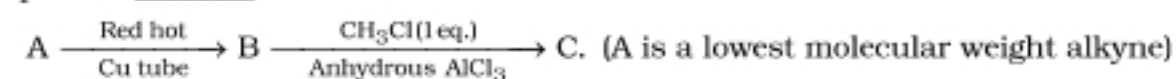
42. But-2-ene on reaction with alkaline KMnO_4 at elevated temperature followed by acidification will give :

- (A) one molecule of CH_3CHO and one molecule of CH_3COOH (2019)
 (B) 2 molecules of CH_3CHO
 (C) $\text{CH}_3-\underset{\text{OH}}{\text{CH}}-\underset{\text{OH}}{\text{CH}}-\text{CH}_3$
 (D) 2 molecules of CH_3COOH

43. The major product of the following addition reaction is : $\text{H}_3\text{C}-\text{CH}=\text{CH}_2 \xrightarrow{\text{Cl}_2/\text{H}_2\text{O}}$ (2019)

- (A) (B) $\text{H}_3\text{C}-\underset{\text{Cl}}{\text{CH}}-\underset{\text{Cl}}{\text{CH}_2}$ (C) (D) $\text{H}_3\text{C}-\underset{\text{OH}}{\text{CH}}-\underset{\text{Cl}}{\text{CH}_2}$

44. In the following sequence of reactions the maximum number of atoms present in molecule 'C' in one plane is _____. (2020)



45. The number of sp^2 hybrid orbitals in a molecule of benzene is : (2020)

- (A) 24 (B) 6 (C) 12 (D) 18

46. The correct order of heat of combustion for following alkadienes is : (2020)

- (a) (b) (c)
 (A) (b) < (c) < (a) (B) (a) < (b) < (c) (C) (a) < (c) < (b) (D) (c) < (b) < (a)