Question 4.Toluene reacts with a halogen in the presence of iron (III) chloride giving ortho and para halo compounds. The reaction is

- (a) electrophilic elimination reaction
- (b) electrophilic substitution reaction
- (c) free radical addition reaction
- (d) nucleophilic substitution reaction Solution:

(b)

$$\begin{array}{c} CH_3 \\ + X_2 \\ \hline \end{array} \begin{array}{c} CH_3 \\ \hline \end{array} \begin{array}{c} CH_3 \\ \hline \end{array} \begin{array}{c} X \\ \hline \end{array}$$

This is an example of electrophilic substitution reaction.