## Write three structural isomer of alkenes corresponding to $C_6H_{12}$ with their IUPAC names.

## SOLUTION

Structural isomers of alkenes

$$\left(C_6H_{12}
ight)$$

(1)

$$CH_3 - CH = CH - CH_2 - CH_2 - CH_3$$

$$2-Hexene$$

(2)

$$H_2C = CHCH_2CH_2CH_2CH_3$$

$$1-Hexene$$

(3)

$$H_3CCH_2HC = CHCH_2CH_3$$

$$3-Hexene$$

Draw cis and trans isomers of the following compounds. Also, write their IUPAC names:

- (i) CHCl = CHCl
- (ii)  $C_2H_5CCH_3 = CCH_3C_2H_5$
- (i) cis and trans isomers of CHCl = CHCl are as follows:

(ii) cis and trans isomers of C<sub>2</sub>H<sub>5</sub>CCH<sub>3</sub> = CCH<sub>3</sub>C<sub>2</sub>H<sub>5</sub> are as follows:

$$CH_3$$
  $CH_3$   $CH_5$   $C=C$   $C_2H_5$   $C=C$   $C_2H_5$   $C=C$   $C_2H_5$   $C=C$   $C_2H_5$   $C_2H_5$ 

cis 3, 4 Dimethylhex-3-ene trans 3, 4-Dimethylhex-3-ene

Write IUPAC names of the following compounds:

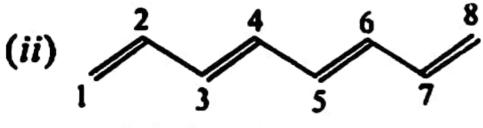
(i) 
$$(CH_3)_2CH - CH = CH - CH_2 - CH$$

$$CH_3 - CH - CH$$

$$CH_3 - CH - CH$$
(ii)  $CH_2 = C(CH_2CH_2CH_3)_2$ 

$$CH_3$$
  
 $1 2 | 3 4 5 6$   
 $CH_3 - CH - CH = CH - CH_2 - CH$   
 $8 | | CH_3 - CH - 7 CH$ 

2. 8-Dimethyl-3, 6-decadiene:



1, 3, 5, 7 Octatetraene

Calculate the number of sigma ( $\sigma$ ) and pi  $(\pi)$  bonds in the following structures:

(i) 
$$(CH_3)_2CH - CH = CH - CH_2 - CH$$
 $CH_3 - CH - CH$ 

(ii)  $CH_2 = C(CH_2CH_2CH_3)_2$ 

- (i)  $\sigma$  bonds 33,  $\pi$  bonds 2
- (ii)  $\sigma$  bonds 7,  $\pi$  bonds 4