WS – 2 Alkenes/Alkynes

Structural Isomers

1. Build the isomers of butene, C_4H_8. Draw the **condensed** and **line structural diagrams** for each isomer.

Alkenes

1. Draw and name the five possible noncyclic isomers of C_5H_{10}.

2. Name the following compounds:

a) $CH_2 = CH_2$

b) $CH_2 = CH - CH_3$

c) $CH_2 = CH - CH_2 - CH_3$

d) $CH_2 - CH = CH - CH_3$

e)
$$CH_3 - CH_2 - \underset{\displaystyle CH_3}{\overset{|}{C}} = CH_2$$

f)
$$CH_3 - CH_2 - \underset{\displaystyle CH_2 - CH_3}{\overset{|}{C}} = \underset{\displaystyle CH_2 - CH_3}{\overset{|}{C}} - CH_2 - CH_3$$

3. Draw each of the following compounds:

a) oct-3-ene

b) 2,4-dimethylpent-2-ene

c) 4-ethyl-3-methylhex-2-ene

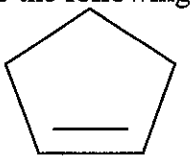
d) methylpropene

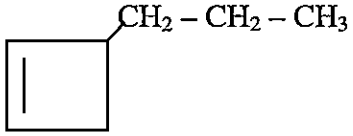
e) 3-ethylpent-1-ene

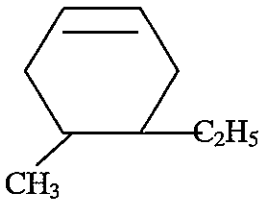
f) ethene

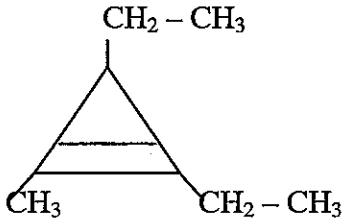
Cycloalkenes

1. Name the following compounds:

a) 

b) 

c) 

d) 

2. Draw the following compounds:

a) cyclooctene

b) 1-ethyl-3-methylcyclopropene

c) 3,3-dimethyl-1-propylcyclopentene

d) 4-butyl-1-methylcyclohexene

Alkynes

1. Name the following compounds:

a) $CH \equiv CH$

b) $CH \equiv C - CH_3$

c) $CH \equiv C - CH_2 - CH_3$

d) $CH_3 - C \equiv C - CH_3$

e)
$$CH \equiv C - \underset{\displaystyle CH_2 - CH_3}{\underset{|}{C}} - CH_3$$

f)
$$CH_3 - \underset{\displaystyle CH_2 - CH_3}{\underset{|}{CH}} - C \equiv C - CH_2 - CH_3$$

2. Draw the following compounds:

a) non-3-yne

b) 5-ethyl-4-propylhept-2-yne

c) 4,4-diethylhex-1-yne

d) 2,2,3,3-tetramethyloct-4-yne