

Answer on Question #43829 - Chemistry - Inorganic Chemistry

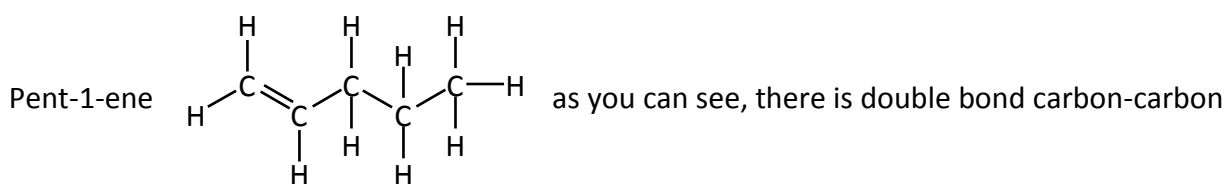
Question:

Pentene and Cyclopentane are related to each other not as stereoisomers but as _____ isomers.

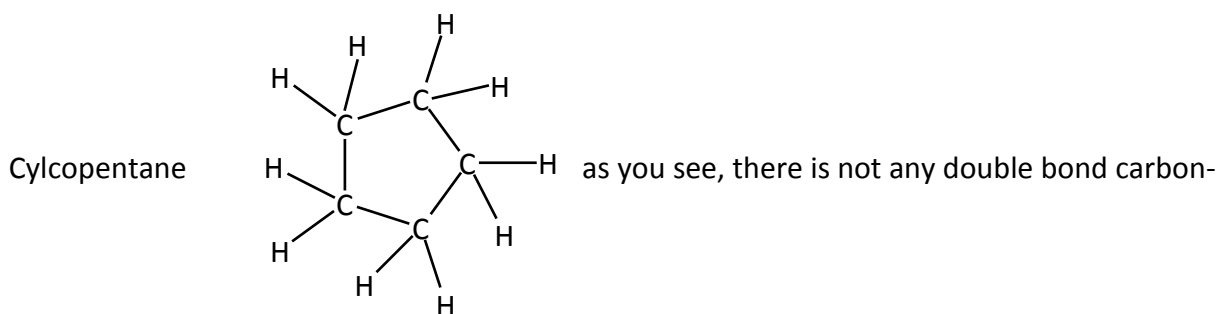
Solution:

Pentene and Cyclopentane are related to each other not as stereoisomers but as functional isomers. Functional isomers are compounds that have the same molecular formula, but the atoms of the molecule are connected in different ways. Therefore, this phenomenon is called functional group isomerism, if molecules have the same formula but different functional groups, so such compounds belong to different classes.

Molecular formulas of these compounds are the same: C_5H_{10} . But molecular formula doesn't show the difference between two compounds. Then, draw the structures of the compounds:



as a functional group in this molecule. This compound belongs to alkene hydrocarbons.



carbon in this compound but carbon atoms are connected to each other forming ring. Cyclopentane belongs to cyclic hydrocarbons without multiple bonds carbon-carbon.

Answer: Pentene and Cyclopentane are related to each other not as stereoisomers but as functional isomers.