

Exercise 14 - Isomerism

Question One

Draw all 5 of the isomers of hexane: C_6H_{14} , showing only the C atoms. Identify all of the 1° , 2° and 3° carbons.

Question Two

Heteroatoms are no problem. Just remember in CHON Tinkertoy, there are 3 holes in N, 2 in O, 4 in C and 1 in H. Work out the connectivities of the 4 isomers of C_3H_9N and 3 isomers of C_3H_8O .

Question Three

Draw all of the isomers (structural and stereoisomers) having the formula C_3H_7N and C_3H_4O . How many units of unsaturation in each molecule? There are a surprising number of isomers for C_3H_4O .

Question Four

There are more than one answer for some of these.

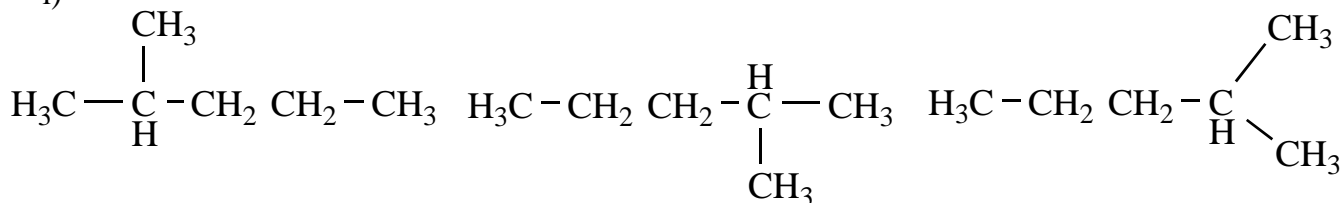
Give the structure of an organic molecule (carbon and hydrogen only) that has:

- more than three carbons and has only primary hydrogens (primary hydrogens are hydrogens attached to a primary carbon, etc.)
- only five carbons and has only secondary carbons
- only tertiary hydrogens.

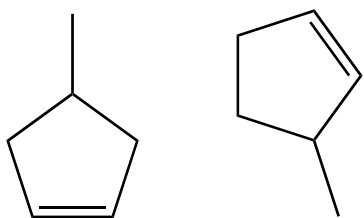
Question Five

In each of the following sets, indicate whether the diagrams are of the same or different molecules.

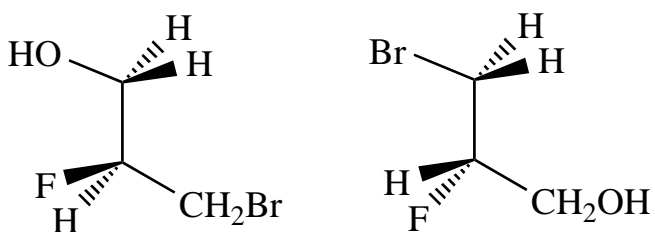
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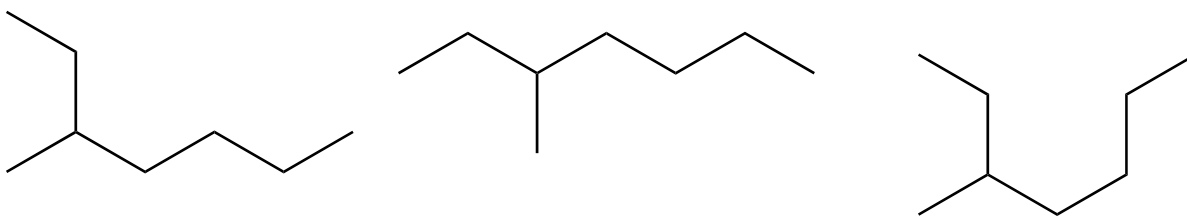
ii)



iii)



iv)



v)

