Chemistry 11

Organic Chemistry Practice Test

Name:
Date:
Block:

Multiple Choice.

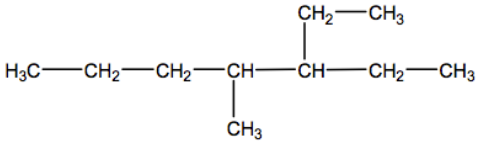
_____ 1. Carbon...
A. Has four valence electrons
B. Forms chains and rings with carbon-carbon bonds
C. Forms single, double and triple bonds
D. All of the above

_____ 2. Carbon compounds that contain only single carbon-carbon bonds are said to be:
A. Alkynes
B. Aromatic
C. Saturated
D. Unsaturated

_____ 3. A hydrocarbon with a triple carbon-carbon bond is said to be an
A. Alkane
B. Alkene
C. Alkyne
D. Aromatic

_____ 4. Compounds with benzene rings in them are called:
A. Additive
B. Aliphatic
C. Aromatic
D. Anhydrous

_____ 5. Consider the following molecule:



The correct name for the given compound is:
A. 3-methyl-4-ethylhexene
B. 3-ethyl-4-methylhexane
C. 3-ethyl-4-methylheptane
D. decane

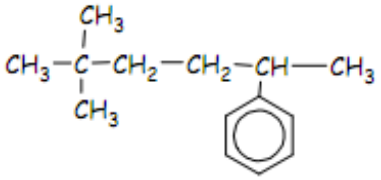
6. Explain your answer to the question above:

_____ 7. Carboxylic acids contain:
A. A carbon double bond to an oxygen only.
B. A carbon double bond to an oxygen and an –OH group.
C. A carbon double bond to an oxygen and a nitrogen.
D. A carbon double bond to an oxygen and a halogen.

_____ 8. Isomers

A. Contain only carbons
B. Have different structures but the same name
C. Have different structures and different names, but the same molecular formula
D. Are made up of structures with single bonds

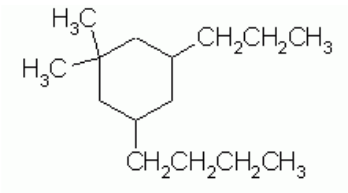
Use the following diagram for number 9:



_____ 9. The correct name for the given compound is:

A. 5,5-dimethyl-2-phenylhexane
B. 1-octylbenzene
C. 2,2-dimethyl-5-phenylhexane
D. 1-hexylbenzene

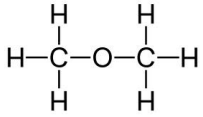
Use the following diagram for number 10:



_____ 10. The correct name for the given compound is:

A. 1-butyl-5,5-dimethyl-3-propylcyclohexane
B. 5-butyl-1,1-dimethyl-3-propylcyclohexane
C. 3-butyl-1,1-dimethyl-5-propylcyclohexane
D. None of the above are correct

_____ 11. Consider the following molecules. Which of the following are isomers?

C_2H_6O	1-ethanol		$C_4H_{12}O_2$
I	II	III	IV

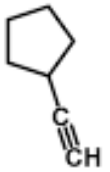
A. I and II
B. I and III
C. I, II, and III
D. I, II, III and IV

12. Explain your answer to the question above:

_____ 13. The following molecule has how many hydrogen atoms?

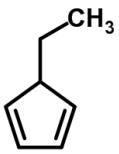
A. 8
B. 10
C. 12
D. 14

_____ 14. The name for the following compound is:



A. 1-cyclopentyl-1-ethyne
B. 1-cyclopentyl-2-ethyne
C. 1-ethylcyclopentane
D. 1-ethyne cyclopentane

_____ 15. The molecular formula for the following compound is:



A. C_6H_{14}
B. C_7H_{10}
C. C_8H_{12}
D. C_9H_9

Draw the following molecules. You may draw a structural formula, condensed structural formula or in carbon skeleton form*:*

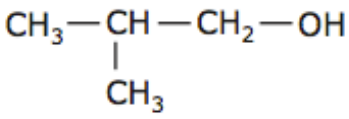
1,1,2-trifluoro-2-pentanol

4-chloro-2-hexyne

3-cyclobutyl-1-cyclopentyl-5-cyclopropylbenzene

3-methyl-2-butanol

Name the following molecules:



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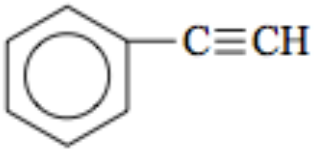

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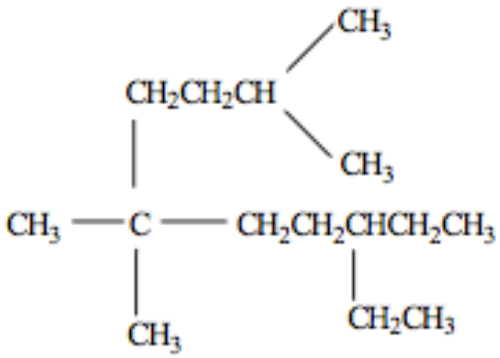

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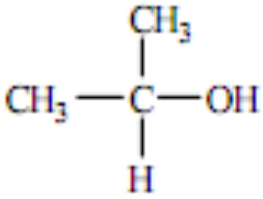

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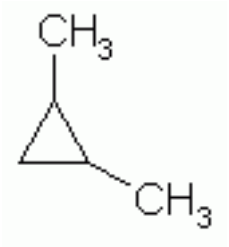

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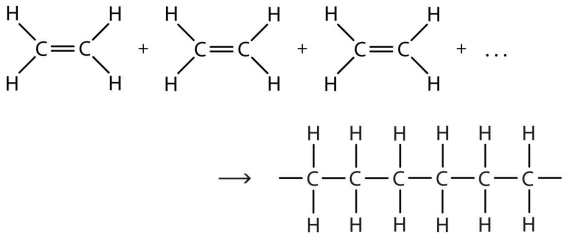
C_9H_{16} has multiple isomers. Draw and name 3 of them. You may draw a structural formula, condensed structural formula or in carbon skeleton form.

Classify the following type of reactions as combustion, substitution, addition, elimination or polymerization:



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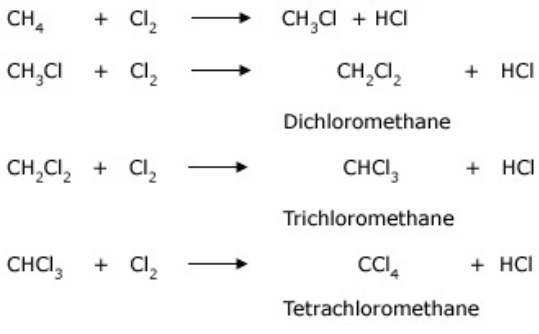

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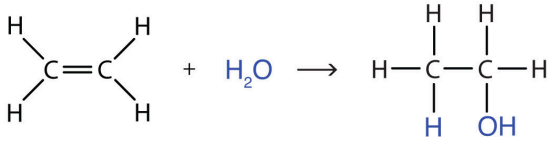

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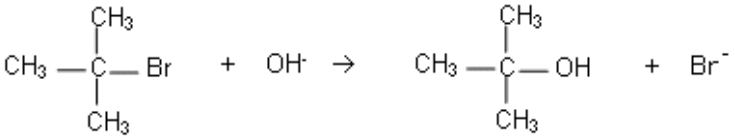

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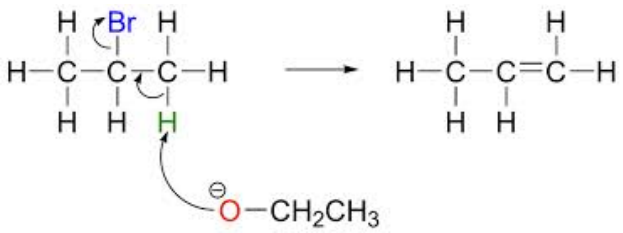

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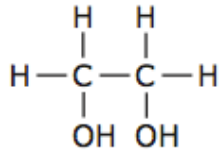
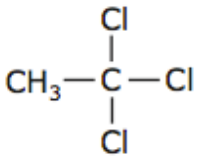
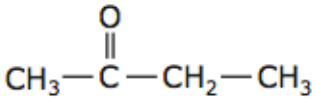
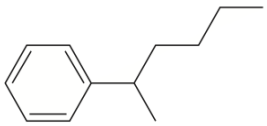
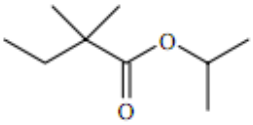
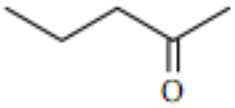
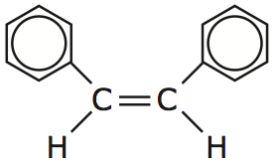
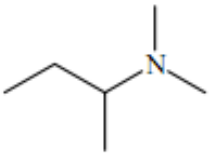
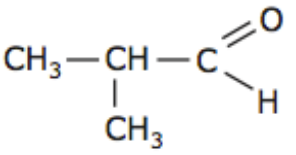
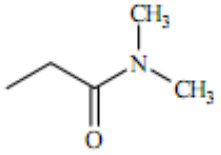
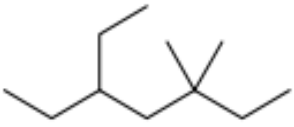
Classify the following molecules according to their main functional group.
There may be more than one correct answer. Functional groups may be used more than once.

A. Alkane Straight chain
B. Cycloalkane
C. Alkyl Halide
D. Alkene
E. Ester
F. Carboxylic Acid
G. Ether
H. Amine
J. Alkyne
K. Amide
L. Aromatic Hydrocarbon
M. Aldehyde
N. Ketone
O. Alcohol

_____ 	_____ 
_____ 	_____ 
_____ 	_____ 
_____ 	_____ 
_____ 	_____ 
_____ 	_____ 
_____ Cyclobutanol	_____ 2,3-dichloro-2-butene
_____ 1,4-diphenyl-3-hexene	_____ 1,2,3-tripropylbenzene