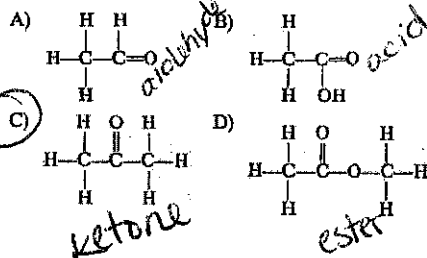


<p>_____ 1. I can define organic compound, saturated hydrocarbon, unsaturated hydrocarbon, and isomer.</p>	<p><b>Definitions:</b></p> <p>organic compound : <u>Complex mol containing Carbon</u></p> <p>saturated hydrocarbon : <u>single bonded alkane</u></p> <p>unsaturated hydrocarbon : <u>Double or triple Bonded alkene/yne</u></p> <p>isomer : <u>molecules w/ same molecular formula but different structures.</u></p>
<p>_____ 2. I can expand a condensed structural formula to show the structural formula of an organic compound.</p>	<p>Draw the complete structural formula for <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3</math>.</p> $\begin{array}{cccccc}   &   &   &   &   & \\ -\text{C} & -\text{C} & -\text{C} & -\text{C} & -\text{C}- & \\   &   &   &   &   & \end{array}$ <p>Draw the complete structural formula for <math>\text{CH}_3\text{CHCHCH}_3</math>.</p> $\begin{array}{cccc}   & &   &   \\ -\text{C} & = & \text{C} & -\text{C}- \\   & &   &   \end{array}$
<p>_____ 3. I can state the name and symbol of the element that is capable of forming rings, chains, and networks.</p>	<p>The element that is capable of forming rings, chains, and networks is</p> <p><u>Carbon</u>. Its symbol is <u>C</u>.</p>
<p>_____ 4. Given the formula, I can determine if a compound is a hydrocarbon or not.</p>	<p>Which formula represents a hydrocarbon?</p> <p>A) <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}</math> <b>B) <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3</math></b>  C) <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}</math> D) <math>\text{CH}_3\text{CH}_2\text{COOCH}_3</math></p>
<p>_____ 5. Given the name, I can use Reference Table P to determine how many carbon atoms are in a compound.</p>	<p>Determine how many carbon atoms are in each of the following compounds:</p> <p>decane <u>10</u></p> <p>ethene <u>2</u></p> <p>3-nonene <u>9</u></p> <p>1-pentyne <u>5</u></p>

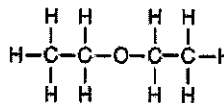
<p>6. Given the name, I can use Reference Table Q to determine to which class of hydrocarbons a compound belongs.</p>	<p>Determine the homologous series of hydrocarbons to which each of the following belongs:</p> <p>decane <del>alkane</del> <u>alkane</u></p> <p>2-decene <del>alkene</del> <u>alkene</u></p> <p>1-pentyne <del>alkyne</del> <u>alkyne</u></p>
<p>7. Given the name, I can determine if the hydrocarbon is saturated or unsaturated.</p>	<p>Determine if each of the following is a saturated or unsaturated hydrocarbon.</p> <p>decane <u>Sat</u></p> <p>ethene <u>Unsat</u></p> <p>1-pentyne <u>Unsat</u></p>
<p>8. Given the formula, I can determine to which homologous series a hydrocarbon belongs.</p>	<p>Determine the homologous series of hydrocarbons to which each of the following belongs:</p> <p> <math display="block">  \begin{array}{cccc}  \text{H} &amp; \text{H} &amp; \text{H} &amp; \text{H} \\    &amp;   &amp;   &amp;   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &amp;   &amp;   &amp;   \\  \text{H} &amp; \text{H} &amp; \text{H} &amp; \text{H}  \end{array}  </math>           belongs to the <u>Alkane</u> series.         </p> <hr/> <p> <math display="block">  \begin{array}{ccc}  \text{H} &amp; &amp; \text{H} \\    &amp; &amp;   \\  \text{H}-\text{C}-\text{C}\equiv\text{C}-\text{C}-\text{H} \\    &amp; &amp;   \\  \text{H} &amp; &amp; \text{H}  \end{array}  </math>           belongs to the <u>alkyne</u> series.         </p>
<p>9. Given the formula, I can determine if a hydrocarbon is saturated or unsaturated.</p>	<p>Determine if each of the following is a saturated or unsaturated hydrocarbon.</p> <p><math>\text{C}_2\text{H}_2</math> <u>Unsat</u> <math>\text{CH}_3\text{CH}_3</math> <u>Sat</u> <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3</math> <u>Sat</u></p>
<p>10. Given a list of compounds, I can determine which ones are isomers.</p>	<p>Given a formula representing a compound:</p> <p> <math display="block">  \begin{array}{cccc}  \text{O} &amp; \text{H} &amp; \text{H} &amp; \text{H} \\     &amp;   &amp;   &amp;   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &amp;   &amp;   &amp;   \\  \text{H} &amp; \text{H} &amp; \text{H} &amp; \text{H}  \end{array}  </math> <math>\text{C}_4\text{H}_8\text{O}</math> </p> <p>Which formula represents an isomer of this compound?</p> <p>A) <math>\text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H}</math> <math>\text{O}</math> <u>turned ... something</u></p> <p>B) <math>\text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H}</math> <math>\text{O}</math> <u><math>\text{C}_4\text{H}_8\text{O}</math></u></p> <p>C) <math>\text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{OH}</math> <math>\text{O}_2</math></p> <p>D) <math>\text{H}-\text{C}-\text{C}-\text{C}-\text{O}-\text{C}-\text{H}</math> <math>\text{O}_2</math></p>

11. Given a structural formula, I can use Reference Table R to identify to which class of organic compounds a substance belongs.

Which structural formula represents a ketone?



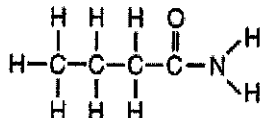
Given the structural formula:



The compound represented by this formula can be classified as an

- A) organic acid  
B) ether  
C) ester  
D) aldehyde

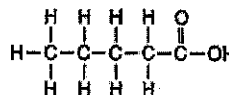
Given the formula:



This compound is classified as

- A) an aldehyde  
B) an amide  
C) an amine  
D) a ketone

Given the formula for an organic compound:

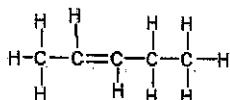


This compound is classified as an

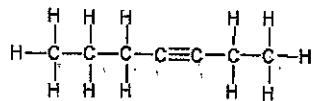
- A) aldehyde  
B) amine  
C) ester  
D) organic acid

12. I can use Reference Tables P & Q and IUPAC nomenclature to name simple hydrocarbons.

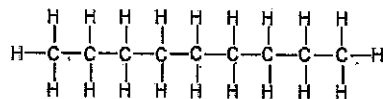
Name the following hydrocarbons.



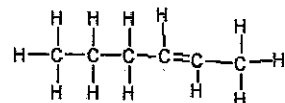
2-pentene



3-heptyne



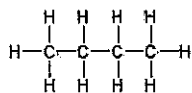
nonane



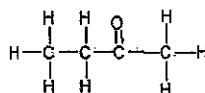
2-hexene

13. I can use Reference Tables P & R and IUPAC nomenclature to name simple compounds in any of the classes of organic compounds.

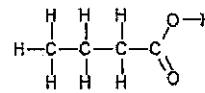
Name the following organic compounds.



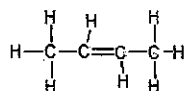
butane



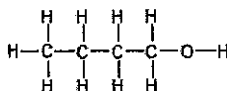
2 butanone



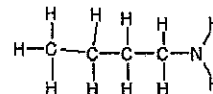
butanoic Acid



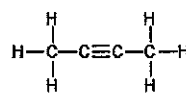
2 butene



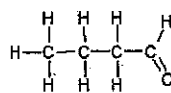
1-butanol



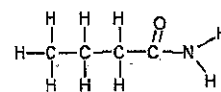
1-butylamine



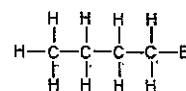
2 butyne



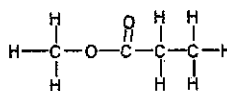
butanal



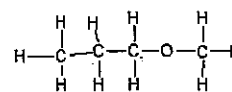
butanamide



1 Bromobutane



methyl ethanoate



methyl proylether

14. I can use F-SCAPES to list and describe the 7 types of organic reactions.

**F** stands for fermentation. This type of organic reaction results from a reaction of sugar to form alcohol and CO<sub>2</sub>. It typically requires a catalyst, in the form of an enzyme to occur.

**S** stands for substitution. This type of organic reaction happens when saturated hydrocarbons replace one of the H's for some other element (often a halide).

**C** stands for combustion. In this type of organic reaction a hydrocarbon reacts with O<sub>2</sub> to form water and

CO<sub>2</sub>. It is an exothermic reaction.

**A** stands for addition. In this type of organic reaction

an alkene or Alkyne becomes a

alkane when the double bond breaks and two atoms of another element (often a halide) are added.

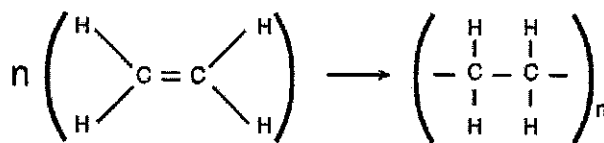
**15. I can use F-SCAPES to list and describe the 7 types of organic reactions. (continued)**

**P** stands for polymerization. In this type of organic

reaction many C's are linked together to form a

polymer. A generalized form of this reaction looks like this.....

Note:  $n$  and  $n$  are very large numbers equal to about 2000.



**E** stands for esterification. In this type of organic

reaction an organic Acid reacts with a

alcohol to form an ester and

water. The products of this reaction are typically fragrant.

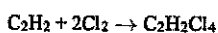
**S** stands for Saponification. In this type of organic

reaction a fat reacts with a base to form

soap. You can really "clean up" if you remember this organic reaction.

**16. Given an equation, I can identify the type of organic reaction that is occurring.**

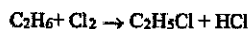
Given the balanced equation for an organic reaction:



This reaction is best classified as

- A) addition      B) esterification  
 C) fermentation      D) substitution

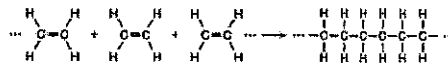
Given the equation:



This reaction is best described as

- A) addition involving a saturated hydrocarbon  
 B) addition involving an unsaturated hydrocarbon  
 C) substitution involving a saturated hydrocarbon  
 D) substitution involving an unsaturated hydrocarbon

Given the equation:



Which type of reaction is represented by this equation?

- A) combustion      B) esterification  
 C) polymerization      D) substitution

Given the reaction:



This reaction is an example of

- A) fermentation      B) saponification  
 C) hydrogenation       D) esterification

