



Chemistry

Name: _____

Section _____ FUNCTIONAL GROUPS I WS Date: _____

Directions (1-8): For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question.

1 An organic compound with a general formula R-OH would have a name ending in

- (1) -al (3) -one
(2) -ol (4) -ole

2 Which class of compounds has the general formula R-O-R'?

- (1) esters (3) ethers
(2) alcohols (4) aldehydes

3 The formula C₅H₁₁OH represents an

- (1) acid (3) ether
(2) ester (4) alcohol

4 Which is the general formula for an aldehyde?



5 Which general formula represents a ketone?



6 Which functional group is found in all organic acids?

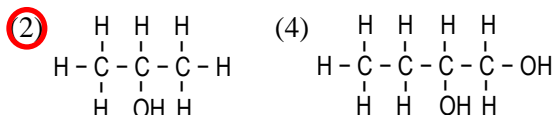
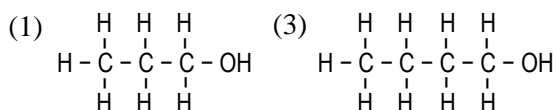


7 The molecule $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$

is a member of the class of organic compounds called

- (1) ethers (3) alcohols
(2) ketones (4) aldehydes

8 Which is the structural formula for 2-propanol?



Structural Isomerization:

Identify each of the following functional groups and then draw its structural formula.

<p>1. CH_3COOH organic acid</p> $\begin{array}{c} \text{H} \quad \text{O} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{O}-\text{H} \\ \\ \text{H} \end{array}$ <p>ethanoic acid (acetic acid)</p>	<p>6. $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$ alcohol (secondary)</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ \quad \quad \\ \text{H} \quad \text{OH} \quad \text{H} \end{array}$ <p>2-propanol (isopropyl alcohol)</p>
<p>2. CH_3COCH_3 ketone</p> $\begin{array}{c} \text{H} \quad \text{O} \quad \text{H} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ <p>2-propanone</p>	<p>7. $\text{CH}_3\text{CH}_2\text{COOH}$ organic acid</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{O}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ <p>propanoic acid</p>
<p>3. $\text{CH}_3\text{CH}_2\text{OH}$ alcohol</p> $\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{H} \\ \quad \\ \text{H} \quad \text{OH} \end{array}$ <p>ethanol</p>	<p>8. $\text{CH}_3\text{CH}_2\text{COOCH}_3$ ester</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \quad \text{H} \\ \quad \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{O}-\text{C}-\text{H} \\ \quad \quad \quad \\ \text{H} \quad \text{H} \quad \quad \text{H} \end{array}$ <p>methyl propanoate</p>
<p>4. $\text{CH}_3\text{CH}_2\text{OCH}_3$ ether</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{O}-\text{C}-\text{H} \\ \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \end{array}$ <p>methyl ethyl ether</p>	<p>9. $\text{CH}_3\text{CH}_2\text{COCH}_3$ ketone</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \quad \text{H} \\ \quad \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\ \quad \quad \quad \\ \text{H} \quad \text{H} \quad \quad \text{H} \end{array}$ <p>2-butanone</p>
<p>5. $\text{CH}_3\text{CH}_2\text{CHO}$ aldehyde</p> $\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ <p>propanal</p>	<p>10. CH_3OCH_3 ether</p> $\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{O}-\text{C}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ <p>dimethyl ether</p>