



Chemistry

Name: _____

Section _____ BRANCHED ISOMERS 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.

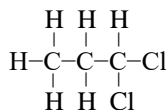
1 Which compound is an isomer of C_4H_9OH ?

- (1) $C_3H_7CH_3$ (3) $C_2H_5COOC_2H_5$
(2) $C_2H_5OC_2H_5$ (4) CH_3COOH

2 Which compound is an isomer of CH_3CH_2OH ?

- (1) CH_3COOH (3) CH_3OCH_3
(2) $CH_3CH_2CH_3$ (4) CH_3COCH_3

3 Given the compound:



Which structural formula represents an isomer?

- (1) $\begin{array}{c} \text{H} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{Cl} \\ | \ \ | \ \ | \\ \text{H} \ \text{Cl} \ \text{H} \end{array}$ (3) $\begin{array}{c} \text{H} \ \text{H} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{Cl} \\ | \ \ | \ \ | \ \ | \\ \text{H} \ \text{H} \ \text{H} \ \text{Cl} \end{array}$
(2) $\begin{array}{c} \text{H} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{Cl} \\ | \ \ | \ \ | \\ \text{H} \ \text{H} \ \text{H} \end{array}$ (4) $\begin{array}{c} \text{H} \ \text{H} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \ \ | \\ \text{Cl}-\text{C}-\text{C}-\text{C}-\text{C}-\text{Cl} \\ | \ \ | \ \ | \ \ | \\ \text{H} \ \text{H} \ \text{H} \ \text{H} \end{array}$

4 Which compound has the formula C_5H_{12} ?

- (1) butane (3) 2,2-dimethyl butane
(2) pentane (4) 2,2-dimethyl pentane

5 An organic compound name that ends in 'ol' indicates that an $-OH$ group has replaced a hydrogen in a hydrocarbon compound. Which formula represents 1,2-ethanediol?

- (1) $C_2H_4(OH)_2$ (3) $Ca(OH)_2$
(2) $C_3H_5(OH)_3$ (4) $Co(OH)_3$

6 Which formula represents an isomer of the compound propanoic acid (CH_3CH_2COOH)?

- (1) CH_3COOH (3) $CH_3CH(OH)CH_2$
(2) CH_3COOCH_3 (4) $CH_3CH_2CH_2COH$

7 Which compounds are isomers?

- (1) CH_3Br and CH_2Br_2
(2) CH_3OH and CH_3CH_2OH
(3) CH_3OH and CH_3CHO
(4) CH_3OCH_3 and CH_3CH_2OH

8 Which structural formula represents 1,1-dibromopropane?

- (1) $\begin{array}{c} \text{H} \ \text{H} \\ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{H} \\ | \ \ | \\ \text{Br} \ \text{Br} \end{array}$ (3) $\begin{array}{c} \text{H} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ | \ \ | \ \ | \\ \text{Br} \ \text{Br} \ \text{H} \end{array}$
(2) $\begin{array}{c} \text{Br} \ \text{H} \\ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{H} \\ | \ \ | \\ \text{Br} \ \text{H} \end{array}$ (4) $\begin{array}{c} \text{Br} \ \text{H} \ \text{H} \\ | \ \ | \ \ | \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ | \ \ | \ \ | \\ \text{Br} \ \text{H} \ \text{H} \end{array}$

Structural Isomerization:

Draw structural formulas for the named compound and then for an isomer of the compound.

1 1-propanol:

2 butane:

3 2-propanone:

4 pentane:

5 propanal:

6 2,2-dimethyl propane:

7 propyl acetate:

8 1,2-dibromopropane:

9 2-butene:

10 3-ethyl pentane: