

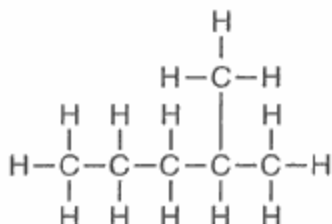
1) Which hydrocarbon is saturated?

- 1) C<sub>2</sub>H<sub>2</sub> 2) C<sub>3</sub>H<sub>4</sub> 3) C<sub>4</sub>H<sub>6</sub> 4) C<sub>4</sub>H<sub>10</sub>

2) Which compound is a member of the same homologous series as C<sub>3</sub>H<sub>8</sub>?

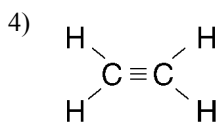
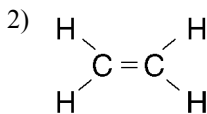
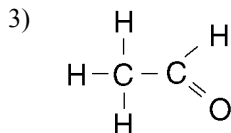
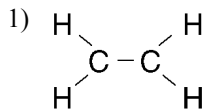
- 1) CH<sub>4</sub> 2) C<sub>4</sub>H<sub>8</sub> 3) C<sub>5</sub>H<sub>8</sub> 4) C<sub>5</sub>H<sub>10</sub>

3) What is the IUPAC name of the organic compound that has the formula shown below?



- 1) 1,1-dimethylbutane 3) hexane  
2) 2-methylpentane 4) 4-methylpentane

4) Which structural formula *correctly* represents a hydrocarbon molecule?



5) Which compound is a hydrocarbon?

- 1) CH<sub>3</sub>I 3) CH<sub>3</sub>COOH  
2) CH<sub>3</sub>OCH<sub>3</sub> 4) CH<sub>3</sub>CH<sub>3</sub>

6) Which formula represents an unsaturated hydrocarbon?

- 1) CH<sub>4</sub> 2) C<sub>2</sub>H<sub>4</sub> 3) C<sub>3</sub>H<sub>8</sub> 4) C<sub>4</sub>H<sub>10</sub>

7) Which formula represents propyne?

- 1) C<sub>3</sub>H<sub>4</sub> 2) C<sub>3</sub>H<sub>6</sub> 3) C<sub>5</sub>H<sub>8</sub> 4) C<sub>5</sub>H<sub>10</sub>

8) Which atoms can bond with each other to form chains, rings, or networks?

- 1) carbon atoms 3) oxygen atoms  
2) hydrogen atoms 4) nitrogen atoms

9) Which two compounds have the same molecular formula but different chemical and physical properties?

- 1) CH<sub>3</sub>CH<sub>2</sub>Cl and CH<sub>3</sub>CH<sub>2</sub>Br  
2) CH<sub>3</sub>CHCH<sub>2</sub> and CH<sub>3</sub>CH<sub>2</sub>CH<sub>3</sub>  
3) CH<sub>3</sub>CHO and CH<sub>3</sub>COCH<sub>3</sub>  
4) CH<sub>3</sub>CH<sub>2</sub>OH and CH<sub>3</sub>OCH<sub>3</sub>

10) Which compound is an isomer of C<sub>2</sub>H<sub>5</sub>OC<sub>2</sub>H<sub>5</sub>?

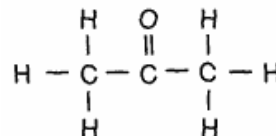
- 1) CH<sub>3</sub>COOH 3) C<sub>3</sub>H<sub>7</sub>COCH<sub>3</sub>  
2) C<sub>2</sub>H<sub>5</sub>COOCH<sub>3</sub> 4) C<sub>4</sub>H<sub>9</sub>OH

11) Butanal, butanone, and diethyl ether have different properties because the molecules of each compound differ in their

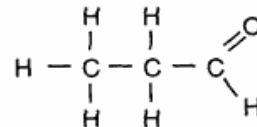
- 1) numbers of carbon atoms  
2) numbers of oxygen atoms  
3) types of functional groups  
4) types of radioactive isotopes

12) Which structural formula represents an isomer of 1-propanol?

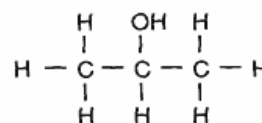
1)



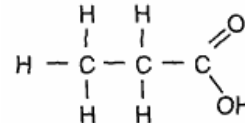
2)



3)



4)



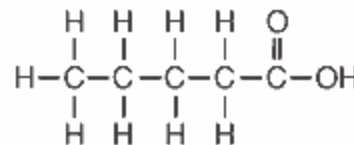
13) The isomers butane and methylpropane differ in their

- 1) molecular formulas  
2) structural formulas  
3) total number of atoms per molecule  
4) total number of bonds per molecule

14) Which compound is an isomer of pentane?

- 1) butane 3) methyl butane  
2) propane 4) methyl propane

15) Given the structural formula:



What is the IUPAC name of this compound?

- 1) pentanal 3) methyl pentanoate  
2) pentanol 4) pentanoic acid

16) What is the formula for pentanol?

- 1) C<sub>5</sub>H<sub>12</sub>                      3) C<sub>4</sub>H<sub>10</sub>  
2) C<sub>5</sub>H<sub>11</sub>OH                  4) C<sub>4</sub>H<sub>9</sub>OH

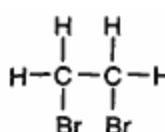
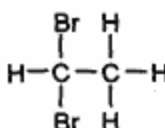
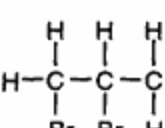
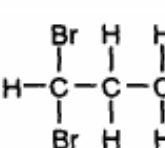
17) The organic compound represented by the condensed structural formula CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CHO is classified as an

- 1) alcohol                      3) ester  
2) aldehyde                    4) ether

18) Which formula represents a ketone?

- 1) HCOOH                      3) CH<sub>3</sub>COCH<sub>3</sub>  
2) HCHO                        4) CH<sub>3</sub>CH<sub>2</sub>OH

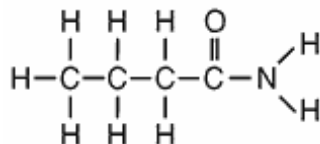
19) Which structural formula represents 1,1-dibromopropane?

- 1) 
- 2) 
- 3) 
- 4) 

20) The compound CH<sub>3</sub>CH<sub>2</sub>COOCH<sub>3</sub> is an example of

- 1) an ester                      3) an acid  
2) an alcohol                    4) a polymer

21) Given the formula:



This compound is classified as

- 1) an aldehyde                  3) an amine  
2) an amide                      4) a ketone

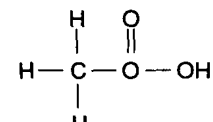
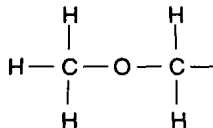
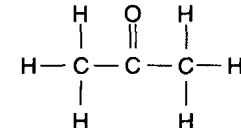
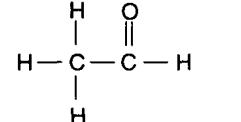
22) Which class of organic compounds has molecules that contain nitrogen atoms?

- 1) alcohol                      3) ether  
2) amine                        4) ketone

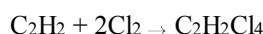
23) The reaction that joins thousands of small, identical molecules to form one very long molecule is called

- 1) esterification                  3) polymerization  
2) fermentation                  4) substitution

24) Which structural formula represents an ether?

- 1) 
- 2) 
- 3) 
- 4) 

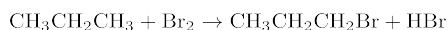
25) Given the balanced equation for an organic reaction:



This reaction is best classified as

- 1) addition                      3) fermentation  
2) esterification                  4) substitution

26) Given the balanced equation representing a reaction:



This organic reaction is best classified as

- 1) an addition reaction  
2) an esterification reaction  
3) a polymerization reaction  
4) a substitution reaction

27) Given the reaction:



This reaction is an example of

- 1) fermentation                  3) hydrogenation  
2) saponification                  4) esterification

28) What are the products of a fermentation reaction?

- 1) an alcohol and carbon monoxide  
2) an alcohol and carbon dioxide  
3) a salt and water  
4) a salt and an acid

29) Which reaction best represents a combustion reaction?

- 1) C<sub>2</sub>H<sub>4</sub> + HCl → C<sub>2</sub>H<sub>5</sub>Cl  
2) C<sub>2</sub>H<sub>4</sub> + Cl<sub>2</sub> → C<sub>2</sub>H<sub>4</sub>Cl<sub>2</sub>  
3) C<sub>2</sub>H<sub>4</sub> + 3 O<sub>2</sub> → 2 CO<sub>2</sub> + 2 H<sub>2</sub>O  
4) C<sub>2</sub>H<sub>4</sub> + H<sub>2</sub>O → C<sub>2</sub>H<sub>5</sub>OH

30) In which kind of reaction is soap one of the products?

- 1) oxidation                      3) neutralization  
2) saponification                  4) fermentation