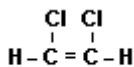


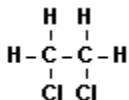
Practice Questions

____ 1. Which structural formula represents the products formed from the reaction of Cl_2 and C_2H_4 ?

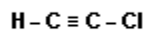
1.



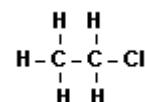
2.



3.



4.



____ 2. An alcohol and an organic acid are combined to form water and a compound with a pleasant odor. This reaction is an example of

1. Saponification 2. Esterification 3. Polymerization 4. Fermentation

____ 3. Which equation represents a substitution reaction?

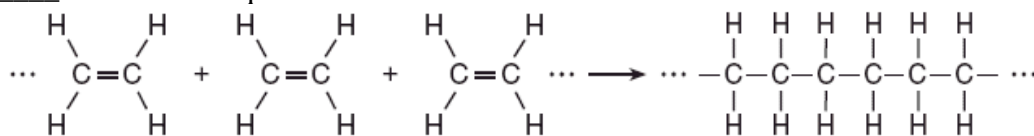
1. $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$ 3. $\text{C}_3\text{H}_6 + \text{H}_2 \rightarrow \text{C}_3\text{H}_8$
 2. $\text{C}_2\text{H}_4 + \text{Br}_2 \rightarrow \text{C}_2\text{H}_4\text{Br}_2$ 4. $\text{C}_4\text{H}_{10} + \text{Cl}_2 \rightarrow \text{C}_4\text{H}_9\text{Cl} + \text{HCl}$

____ 4. Given the equation: $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2\text{C}_2\text{H}_5\text{OH} + 2\text{CO}_2$

The chemical process illustrated by this equation is

1. Fermentation 2. Saponification 3. Esterification 4. Polymerization

____ 5. Given the equation:



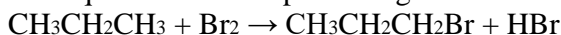
Which type of reaction is represented by this equation?

1. Combustion 2. Esterification 3. Polymerization 4. Substitution

____ 6. Which reaction results in the production of soap?

1. Esterification 2. Fermentation 3. Polymerization 4. Saponification

____ 7. Given the balanced equation below representing a reaction. This organic reaction is best classified as



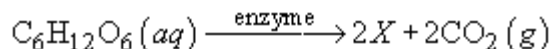
1. Addition 2. Esterification 3. Polymerization 4. Substitution

____ 8. Given the balanced equation for an organic reaction between butane and chlorine that takes place at $300.^\circ\text{C}$ and 101.3 kilopascals:

Identify the type of organic reaction shown in the chemical equation: $\text{C}_4\text{H}_{10} + \text{Cl}_2 \rightarrow \text{C}_4\text{H}_9\text{Cl} + \text{HCl}$

1. Addition 2. Saponification 3. Fermentation 4. Substitution

____ 9. Given the balanced equation with an unknown compound represented by X:



Which compound is represented by X?

1. $\text{CH}_3\text{OH}(\text{aq})$ 2. $\text{CH}_2(\text{OH})_4(\text{aq})$ 3. $\text{CH}_3\text{CH}_2\text{OH}(\text{aq})$ 4. $\text{CH}_2\text{OHCH}_2\text{OH}(\text{aq})$

____ 10. Given the balanced equation for an organic reaction: $\text{C}_2\text{H}_2 + 2\text{Cl}_2 \rightarrow \text{C}_2\text{H}_2\text{Cl}_4$ This reaction is best classified as

1. Addition 2. Esterification 3. Fermentation 4. Substitution

____ 11. Given the reaction: $\text{X}(\text{g}) + \text{Cl}_2(\text{g}) \rightarrow \text{XCl}_2(\text{g})$ Which compound could be represented by X?

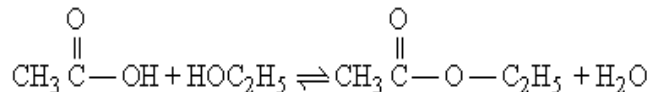
1. CH_4 2. C_2H_4 3. C_3H_8 4. C_4H_{10}

___12. Given the equation: butanoic acid + 1-pentanol \rightarrow water + X

To which class of organic compounds does product X belong?

1. Alcohol 2. Ester 3. Ether 4. Alkane

___13. Given the reaction:



This reaction is an example of

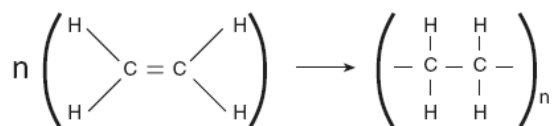
1. Fermentation 2. Saponification 3. Hydrogenation 4. Esterification

___14. Given the equation: $\text{C}_2\text{H}_6 + \text{Cl}_2 \rightarrow \text{C}_2\text{H}_5\text{Cl} + \text{HCl}$ This reaction is best described as

1. addition involving a saturated hydrocarbon
2. addition involving an unsaturated hydrocarbon
3. substitution involving a saturated hydrocarbon
4. substitution involving an unsaturated hydrocarbon

___15. Which type of reaction is represented by the equation to the right?

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



1. Esterification 2. Fermentation 3. Saponification 4. Polymerization

___16. Which formula correctly represents the product of an addition reaction between ethene and chlorine?

1. CH_2Cl_2 2. CH_3Cl 3. $\text{C}_2\text{H}_4\text{Cl}_2$ 4. $\text{C}_2\text{H}_3\text{Cl}$

___17. The reaction $n\text{C}_2\text{H}_4 \rightarrow (-\text{C}_2\text{H}_4-)_n$ is an example of

1. Saponification 2. Esterification 3. Polymerization 4. Fermentation

___18. The process of joining many small molecules into larger molecules is called

1. neutralization 2. polymerization 3. saponification 4. substitution

19. Draw out the substitution reaction between C_4H_{10} and Cl_2 . Name the product(s).

20. Draw out the addition reaction between 1-butene and chlorine gas. Name the product(s).

21. Draw out the esterification reaction between propanoic acid and 1-propanol. Name the product(s).