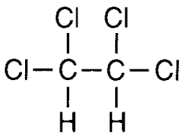
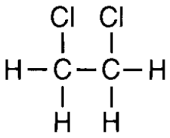
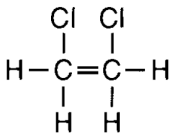
Name **Date**

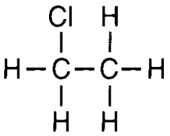
Organic Reactions Practice Questions

1. Which formula represents the product of the addition reaction between ethene and chlorine, Cl_2?

A) 

B) 

C) 

D) 

2. Cellulose, protein, and starch are classified as

A) aldehydes B) esters
C) synthetic polymers D) natural polymers

3. What is the name of the process that begins with the joining of monomer molecules?

A) fermentation B) polymerization
C) esterification D) hydrogenation

4. In a condensation polymerization, the two products formed are a polymer and

A) water B) carbon dioxide
C) an acid D) a base

5. In which type of reaction are long-chain molecules formed from smaller molecules?

A) substitution B) oxidation
C) fermentation D) polymerization

6. Given the incomplete reaction:

$$CH_3CH_2CH_2\overset{O}{\overset{\|}{C}}\text{–}OH + x \rightarrow CH_3CH_2CH_2\overset{O}{\overset{\|}{C}}\text{–}OCH_2CH_3 + H_2O$$

Which compound is represented by x?

A) CH_3CH_2OH B) $CH_3C\text{–}H$

C) $CH_3\overset{O}{\overset{\|}{C}}OCH_2CH_3$ D) $CH_3\overset{O}{\overset{\|}{C}}CH_3$

7. In the reaction:

$$CH_3COOH + CH_3OH \rightarrow CH_3COOCH_3 + H_2O$$

the organic product can best be identified as

A) an alcohol B) a ketone
C) an ester D) an acid

8. A reaction between an alcohol and an organic acid is referred to as

A) cracking B) fermentation
C) saponification D) esterification

9. The fermentation of $C_6H_{12}O_6$ will produce carbon dioxide and

A) water B) a polymer
C) an ester D) an alcohol

10. Which of the following occurs when yeast breaks down glucose into alcohol and carbon dioxide?

A) esterification B) fermentation
C) saponification D) polymerization

11. When butane burns in an excess of oxygen, the principal products are

A) CO_2 and H_2O B) CO_2 and H_2
C) CO and H_2O D) CO and H_2

12. Which reaction best represents the complete combustion of ethene?

A) $C_2H_4 + HCl \rightarrow C_2H_5Cl$
B) $C_2H_4 + Cl_2 \rightarrow C_2H_4Cl_2$
C) $C_2H_4 + 3\ O_2 \rightarrow 2\ CO_2 + 2\ H_2O$
D) $C_2H_4 + H_2O \rightarrow C_2H_5OH$

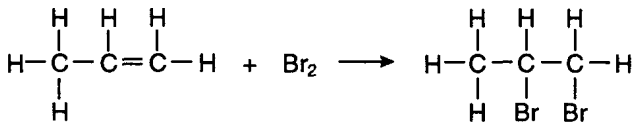
13. In which kind of reaction is soap one of the products?

A) oxidation B) saponification
C) neutralization D) fermentation

14. What is a product of both fermentation reactions and saponification reactions?

A) an ester B) an acid
C) an alcohol D) a soap

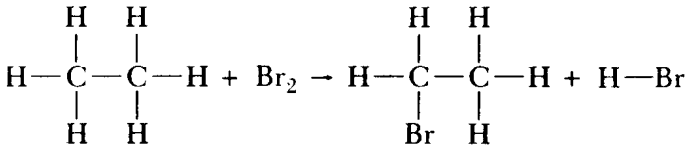
15. Base your answer to the following question on the organic reaction below.



This reaction is an example of

A) fermentation B) addition
C) substitution D) saponification

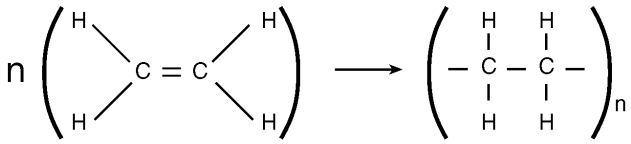
16. Which organic product is formed by the reaction below?



A) bromoethane B) bromoethene
C) bromoethyne D) bromobenzene

17. Which type of reaction is represented by the equation below?

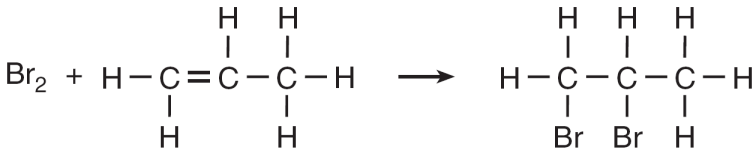
Note: n and n are very large numbers equal to about 2000.



A) esterification B) fermentation
C) saponification D) polymerization

Base your answers to questions **18** and **19** on the information below.

A reaction between bromine and a hydrocarbon is represented by the balanced equation below.



18. Write the name of the homologous series to which the hydrocarbon belongs.

19. Identify the type of organic reaction.

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20. Base your answer to the following question on the information below.

Ethyl butanoate is an organic compound that contributes to the odor of pineapple. Ethyl butanoate is one of the products formed by the reaction of butanoic acid with ethanol.

Identify the type of organic reaction that produces the compound that contributes to the odor of pineapple.