Chemistry Name: _____

Section _____ ORGANIC REACTIONS WS Date: _____

Directions (1-7): For *each* statement or question, choose the word or expression that, of those given, best completes the statement or answers the question.

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

(1) CH_2Cl_2 (3) $C_2H_4Cl_2$
(2) CH_3Cl (4) C_2H_3Cl

2 Given the equation:

$$C_2H_6 + Cl_2 \rightarrow C_2H_5Cl + HCl$$

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

3 Given the balanced equation representing a reaction:

$$C_3H_{8\,(g)} + 5\ O_{2\,(g)} \rightarrow 3\ CO_{2\,(g)} + 4\ H_2O_{\,(g)}$$

The type of reaction represented is

(1) addition (3) combustion
(2) fermentation (4) esterification

4 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

5 Which reaction results in the production of soap?

(1) esterification (3) polymerization
(2) fermentation (4) saponification

6 The reaction between an organic acid and an alcohol produces

(1) an aldehyde (3) an ether
(2) a ketone (4) an ester

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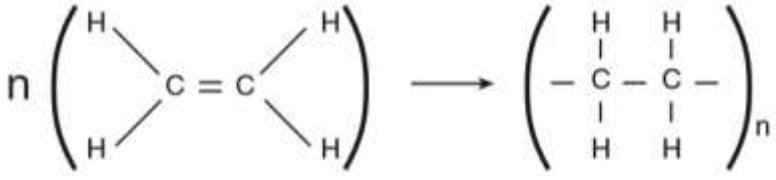
7 Which type of reaction is represented by the equation below?

Note: $\mathbf{n}$ and **n** are very large numbers equal to about 2000.



(1) esterification (3) saponification
(2) fermentation (4) polymerization

Directions (8-13): Answer the following questions based on your knowledge of chemistry.

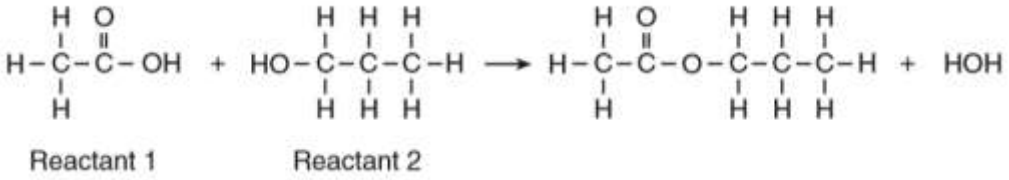
8 Given the unbalanced equation:

$$C_6H_{12}O_6 \xrightarrow{enzyme} 2\ C_2H_5OH + 2\ CO_2$$

Identify the type of reaction represented. fermentation

Base your answers to questions 9 through 11 on the information below.

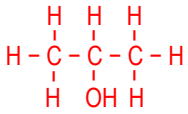
Many artificial flavorings are prepared using the type of organic reaction shown below.



9 What is the name of this organic reaction? esterification

10 To what class of organic compounds does reactant 2 belong? alcohols

11 In the space provided below, draw the structural formula of a n isomer of reactant 2.



2-propanol
(isopropyl alcohol)

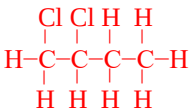
Base your answers to questions 12 and 13 on the information below.

Given the reaction between 1-butene and chlorine gas:

$$C_4H_8 + Cl_2 \rightarrow C_4H_8Cl_2$$

12 Which type of chemical reaction is represented by this equation? addition

13 In the space provided below, draw the structural formula of the product 1,2-dichlorobutane.



1,2-dichlrobutane