Carboxylic Acids & Esters — Practice Worksheet

Name: _____ Date: _____

Directions: Select the best answer for Questions 1–8. For Questions 9–10, explain your reasoning using chemical structures, reagents or electron-flow ideas where useful.

1. Ethanoic acid + methanol (H^+ catalyst) forms which ester?

A. Ethyl ethanoate
B. Methyl ethanoate
C. Methanal
D. Methyl methanoate

Answer: _____

2. Fischer esterification is:

A. Generally reversible
B. A photochemical radical process
C. Always irreversible
D. A single SN2 on the alcohol oxygen

Answer: _____

3. The characteristic carboxylic acid group is:

A. R–COOH
B. R–CHO
C. R–CO–R
D. R–O–R

Answer: _____

4. Why is the acetate ion stabilized?

A. Charge delocalization between two O atoms
B. There is no oxygen
C. It contains a triple bond
D. The carbon is fully protonated

Answer: _____

5. Which can shift Fischer esterification toward product?

A. Excess water
B. Removing water
C. Replacing acid catalyst with neutral salt
D. Adding sodium carbonate before reaction

Answer: _____

6. Ethanol + benzoic acid with acid catalysis gives:

A. Ethyl benzoate
B. Methyl benzoate
C. Benzaldehyde
D. Benzyl alcohol

Answer: _____

7. Dilute acid and excess water generally promote ester:

A. Hydrolysis
B. Oxidation to alkene
C. Polymerization
D. Halogenation

Answer: _____

8. Comparing ordinary alcohols and carboxylic acids, which is generally more acidic?

A. Ethanol
B. Ethanoic acid
C. Both equal
D. 2-propanol

Answer: _____

9. Why is acetate relatively stable?

_____

_____

_____

10. What product forms from methanoic acid and ethanol with acid catalyst?

_____

_____

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