

Lab: Preparation of EstersName: _____
Period: _____**Purpose:** To prepare esters by condensation reactions of carboxylic acids and alcohols.**Procedure:**

(1) Label five test tubes #1, 2, 3, 4, and 5.

(2) Combine the reactants in the quantities indicated in the table below.

Test Tube	Carboxylic Acid	Alcohol
1	10 drops butanoic acid	10 drops 1-butanol
2	10 drops ethanoic acid	10 drops 1-pentanol
3	10 drops ethanoic acid	10 drops 1-butanol
4	10 drops ethanoic acid	10 drops 1-octanol
5	1 small scoop 2-hydroxybenzoic acid	10 drops methanol

(3) To each of the test tubes, add 4 drops of concentrated sulphuric acid.

(4) Fill a large beaker about halfway with water. Place the test tubes into the water and heat the water on a hot plate for about 15 minutes (turn the hot plate about halfway up).

(5) Fill another beaker about halfway with cold water. Using tongs, transfer the test tubes to the cold water bath. Add about 5 mL of cold water to each of the test tubes.

(6) Carefully note the odour of each product and record your observations in the table below.

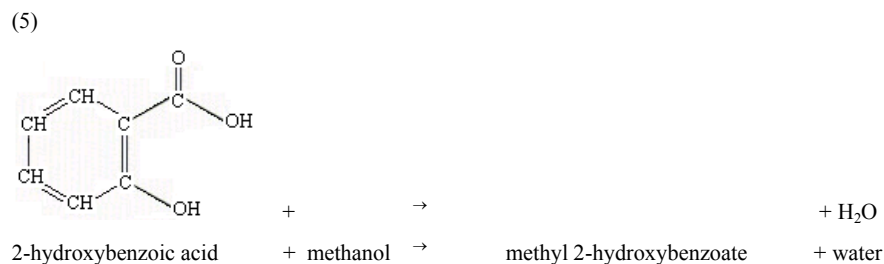
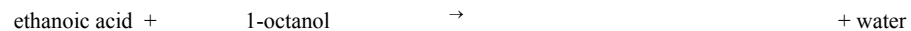
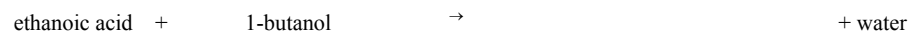
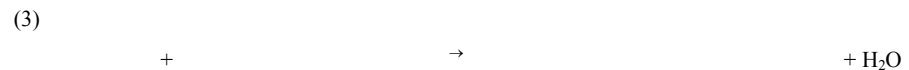
(7) Discard the waste into the appropriate waste container labelled ORGANIC waste.

Observations:

Test Tube	Observations
1	
2	
3	
4	
5	

Questions:

Complete the following condensation reactions:

**Conclusion:**

Complete the following general equation:

