

## BIOLOGY 11 – PRE-LAB EXERCISE

# 3

Name:

Lab Day & Time:

### Chemical Composition of Cells

1. What is an organic compound?
2. What three classes of organic macromolecules are we analyzing in Lab 3 of your Lab Manual?

Name a specific example of a monosaccharide analyzed in Lab 3.

Name a specific example of a polysaccharide analyzed in Lab 3.

What type of reaction converts monomers (subunits) into polymers?

What type of reaction converts polymers into monomers?

What type of protein speed up biochemical reactions?

3. Which organic compounds are detected by the Biuret reagent?

What colors indicate a positive result (presence of that compound)?

What color indicates a negative result (absence of that compound)?

4. What organic compounds are detected by the Benedict's reagent?

What colors indicate a positive result?

What color indicates a negative result?

5. What organic compound is detected by the iodine reagent?

What color indicates a positive result?

What color indicates a negative result?

**Refer to Figure 3.4 to answer the following questions.**

- a. What do the letters in the colored boxes represent?
- b. What specific letters do you find? What specifically does each type of letter represent?
- c. What do the short lines between the letters represent?
- d. One of the products shown is " $3\text{H}_2\text{O}$ ". What do the 3 and the 2 represent?
- e. Specifically, from where do the atoms of the water molecules come?
- f. How many total molecules are needed to make one molecule of fat?
- g. How many atoms are in one glycerol molecule?
- h. What is the difference between the fatty acid with the " $\text{C}=\text{C}$ " and the other two fatty acids?