Lab Instructor:_____ Name:_____

Part 1 – Models of Triacylglycerols (Triglycerides)

Structure of glycerol	**Structure of acetic acid**
Equation for the formation of glyceryl acetate	
Equation for the hydrolysis of glyceryl acetate	

Part 2 – Physical Properties of Lipids and Fatty Acids

Lipid	Classification of Lipid	Appearance and Odor	Soluble in CH_2Cl_2?	Soluble in Water?
Olive oil				
Safflower oil				
Stearic acid				
Oleic acid				
Lecithin				
Cholesterol				
Vitamin A				

Part 3 – Bromine Test

Substance	Drops of Bromine Added (until the orange color persists in the solution)	Saturated or Unsaturated?
Olive oil		
Safflower oil		
Stearic acid		
Oleic acid		
Lecithin		
Cholesterol		
Vitamin A		

Questions

1. What functional group is present in a triglyceride?

2. What functional group is present in a fatty acid?

3. Draw the structure of oleic acid.

4. Draw the structure of glyceryl triolein.

5. What do lipids have in common?

6. What type of solvent would be needed to remove an oil spot? Why?

7. The melting point of stearic acid is 70°C, and the melting point of oleic acid is 4°C. Explain in detail why their melting points are so different.

8. Based on part 3 of the experiment, which oil is more unsaturated, safflower oil or olive oil? Explain.

9. Which should have a higher melting point, safflower oil or olive oil? Explain your reasoning.

10. What components are present in a phosphoglyceride?

11. Why is it that phosphoglycerides are found in cell membranes?