

Name: _____

Date: _____

- [2 pt] 1. What characteristic(s) are the same for all lipids?
- [5 pt] 2. Define the terms "Hydrophilic" and "Hydrophobic. For each list which functional groups (name or draw pictures) are fall into which category.
- (a) Hydrophylic:
- (b) Hydrophobic:
- [3 pt] 3. Write a general formula for waxes. Draw the structure of the wax that would be produced when a 26-carbon straight chain alcohol reacts with stearic acid.
- [6 pt] 4. Draw an example of a cis and trans fatty acid (label which is which). What chemical/biological property(s) are different for cis and trans fatty acids? Which is recommended as being healthier for you? Explain.

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[4 pt] 5. Draw an example of an $\omega-3$ and a $\omega-6$ fatty acid (label which is which). What is the main structural difference between the fatty acids? Which is recommended as being healthier for you? Explain.

[5 pt] 6. Draw the formation reaction for a triacylglycerol that contains one unit each of palmitic, stearic, and oleic acids. How many different triacylglycerols could you have drawn? Circle the hydrophobic part of the triacylglycerol.

[3 pt] 7. Which triacylglycerol would be more hydrophobic, (a) contains three units of lauric acid, or (b) contains three units of stearic acid. Explain.

7. _____

[4 pt] 8. List two reasons why fats contain more biochemical energy than carbohydrates.

[3 pt] 9. What is meant by the term "essential" fatty acid.