

## Fifth directed work of biochemistry

### Structure and physicochemical properties of lipids

**Exercise 1: Indicate which of these statements is (are) correct**

- a. Lipids form a homogeneous group of compounds.
- b. Unsaturated fatty acids have lower melting points than saturated fatty acids.
- c. The melting point of oleic acid is higher than that of stearic acid.
- d. Most natural fatty acids have a number of carbon atoms greater than 24.
- e. Fatty acids are hydrophilic.
- f. Lipids may contain alcohols other than glycerol.
- g. A ceride is formed from cholesterol associated with a fatty acid.
- h. The melting point of fatty acids depends on both the length and the degree of unsaturation of the chain.

**Exercise 2:** Consider the following fatty acids: **AG 1:** C<sub>16</sub>:<sub>0</sub> ; **AG2:** C<sub>18</sub>: 1 $\Delta^9$  ; **AG3:** C<sub>18</sub>: 2 $\Delta^{9,12}$

- Write the structural chemical formulas of the 03 fatty acids.

**Exercise 3.**

The 1-palmitoyl-2-linoleoyl-3-stearoyl-glycerol

- Write its complete formula.
- What class of compounds does it belong to?
- What are the end products of its degradation?
- Write the saponification reaction of first fatty acid by KOH.
- Indicate for this lipid its hydrophilic part and its hydrophobic part.