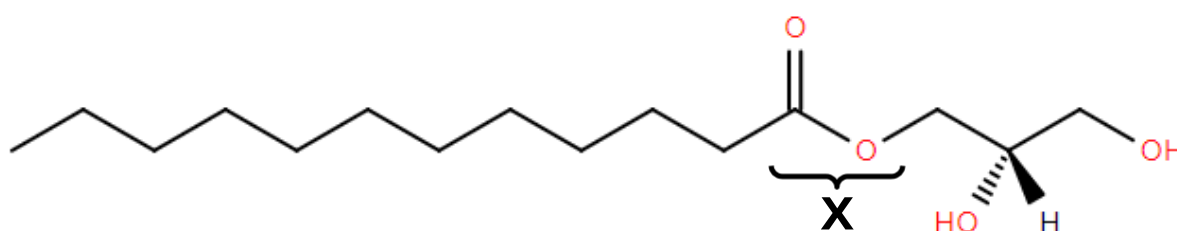


**BIOLOGY**  
 Topic Questions

**LW1 - LIPIDS OVERVIEW AND TRIGLYCERIDES (PART 1)**

- Q1) a)** What 3 elements make up the majority of a lipid's structure? [1 mark]
- b)** Why are lipids referred to as 'organic molecules'? [1 mark]
- Q2)** Explain, in terms of intermolecular forces, why lipids are insoluble in water. [3 marks]
- Q3)** Look at the molecule below.



From the LIPID MAPS database at: <https://www.lipidmaps.org/data/LMSDRecord.php?LMID=LMGL01010008>

- a)** What type of molecule is shown?
- |  |                                       |          |
|--|---------------------------------------|----------|
| <input type="checkbox"/> Disaccharide  | <input type="checkbox"/> Triglyceride |          |
| <input type="checkbox"/> Monoglyceride | <input type="checkbox"/> Fatty acid   | [1 mark] |
- b)** Name the bond X. [1 mark]
- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> Peptide bond | <input type="checkbox"/> Glycosidic bond |
| <input type="checkbox"/> Ester bond   | <input type="checkbox"/> Hydrogen bond   |
- c)** How many water molecules will be produced if this molecule is made into a triglyceride? Explain your answer. [2 marks]
- Q4)** A lot of plant species have a waxy cuticle on the top surface of their leaves made of lipids. Explain why this is an advantage to plants living in conditions where water is scarce. [2 marks]
- Q5)** Draw the general structure of a fatty acid and label each group. [2 marks]
- Q6) a)** Explain how the structure of a glycerol molecule allows triglycerides to be formed. [3 marks]
- b)** Describe the sequence of events that leads to the formation of a triglyceride molecule from 3 fatty acids and a glycerol molecule. State what other compound is formed. [5 marks]
- Q7) a)** Define a hydrolysis reaction and their use within organisms. [2 marks]
- b)** Explain how triglyceride molecules are broken down in the body and name the products. [2 marks]

[Total 25 marks]