

**AQA, OCR, Edexcel**

**A Level**

# **A Level Biology**

## **Lipid Questions**

Name:

**M**

**M**

**E**

**Mathsmadeeasy.co.uk**

**Total Marks:     /26**

## Lipids

Lipids are naturally occurring molecules made up of hydrocarbons, they are one of the building blocks in the structures of all living cells. Some of the lipids unique properties come from the fact that they are insoluble in water.

1.

a) Lipids are an essential organic molecule in animals.

i) Identify three uses of lipids in animals? (3 marks)

ii) What three elements do all lipids contain? (3 marks)

b) The diagram below shows the basic structure of one type of lipid.

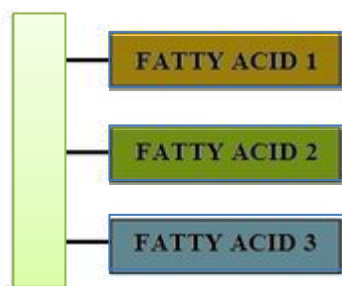


Figure 1

i) What is the name of the lipid in figure 1? (1 mark)

ii) Discuss the structure of the molecule in figure 1 using the terms hydrophobic and hydrophilic. (4 marks)

iii) What is the main use of the molecule in figure 1? (1 mark)

2. The hydrocarbon tails of lipids can have very different properties depending on their structure.

a)

i) What is the difference between saturated and unsaturated lipids? (2 marks)

ii) Draw the structure of an unsaturated hydrocarbon chain made up of three carbon atoms (2 marks)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

b) Saturated fats are mainly found in animal fats.

i) Where are unsaturated fats mainly found, with a specific example? (1 mark)

ii) How does the presence of a double bond in a lipid affect its boiling point? (1 mark)

3. This question is about the formation of triglycerides.

a) The diagram below shows the structural formula of the components that make up a triglyceride

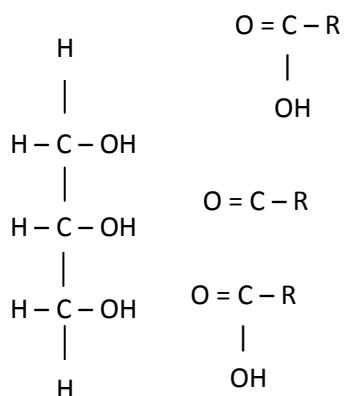


Figure 2

i) How many condensation reactions are required to form a triglyceride? (1 mark)

ii) Draw what the triglyceride would look like after the condensation reactions have occurred. (3 marks)

iii) What is the name of the bond formed in the condensation reaction shown in figure 2? (1 mark)

b) Phospholipids are another type of lipid similar to triglycerides.

i) How is the structure of a phospholipid different from the structure of a triglyceride? (2 marks)

ii) How are phospholipids used in the body? (1 mark)