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Level: SL IB in Biology
Subject: Biology
Topic: IB SL Biology
Type: Topic Question

2002



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All International Baccalaureate IB Topic Questions SL Biology

BIOLOGY

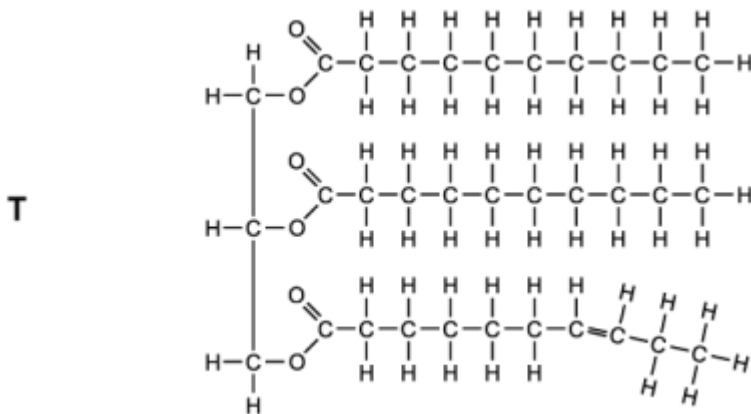
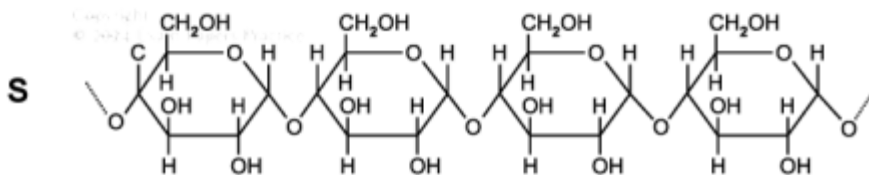
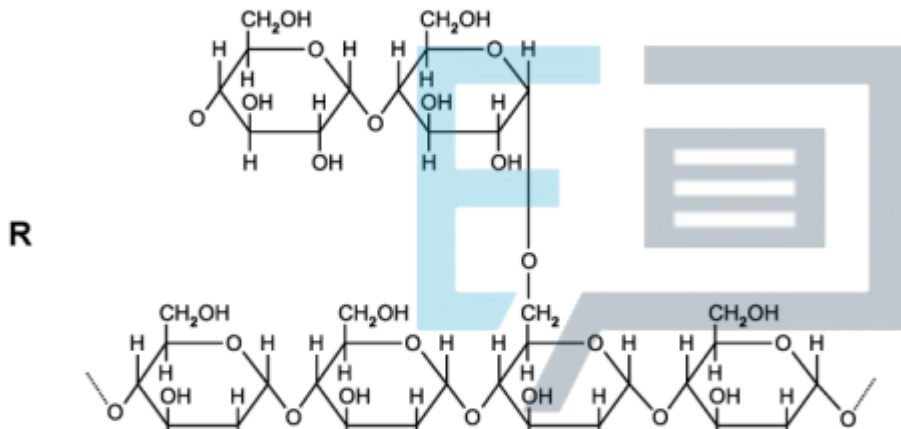
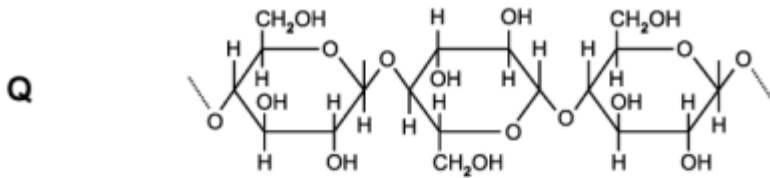
SL - IB

Key skills



Question 1.

The diagram below shows several different biological molecules (**Q**, **R**, **S** and **T**).





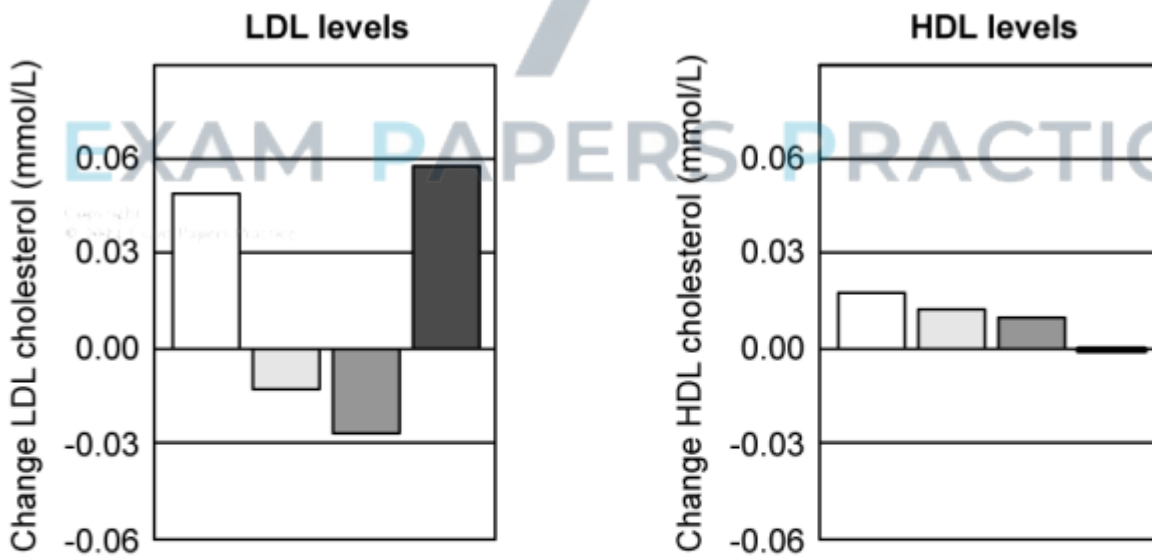
Which row of the table below correctly identifies some of the products of hydrolysis of the molecules above?

	Q	R	S	T
A.	α -glucose	β -glucose	α -glucose	glycerol
B.	α -glucose	β -glucose	β -glucose	fatty acids
C.	β -glucose	α -glucose	β -glucose	glycerol
D.	β -glucose	α -glucose	α -glucose	fatty acids

[1 mark]

Question 2.

A study was conducted to investigate the effect of different fatty acids on the levels of low-density lipoprotein (LDL) and high-density lipoprotein (HDL) in the human bloodstream. An increase in LDL levels in the blood has been linked to an increase in the risk of developing coronary heart disease (CHD). The results are shown in the graphs below.



- Key:** = Saturated Fatty Acids
 = cis Polyunsaturated Fatty Acids
 = cis Monounsaturated Fatty Acids
 = trans Monounsaturated Fatty Acids

Which of the following conclusions would be the most valid concerning the data?

- A. trans monounsaturated fatty acids led to the most significant change in the HDL levels, leading to a decreased risk of developing CHD
- B. All The fatty acids led to an increase in the HDL levels in the bloodstream, which would lead to a decrease in the risk of developing CHD
- C. cis monounsaturated fatty acids caused the greatest decrease in LDL levels and would result in a lowered risk of developing CHD
- D. cis monounsaturated fatty acids led to a smaller decrease in LDL levels than cis polyunsaturated fatty acids which would lead to a greater decrease in the risk of developing CHD

[1 mark]

Question 3.

Which of the following most accurately describes the formation of a lipid?

- A. An ester bond forms between the -COOH group of three fatty acids and an -OH group on one glycerol molecule, along with the release of three molecules of water
- B. An ester bond forms between the -COOH group of three fatty acids and a -CH group on one glycerol molecule, along with the release of three molecules of water
- C. An ester bond forms between the -COOH group of three fatty acids and an -OH group on one glycerol molecule, along with the absorption of three molecules of water
- D. An ester bond forms between the -COOH group of three fatty acids and a -CH group on one glycerol molecule, along with the absorption of three molecules of water

[1 mark]

Question 4.

A study was conducted to investigate the effect of saturated fat intake on the risk of developing coronary heart disease (CHD) in women.

- The study involved 20 women, aged between 35 and 50, divided into two groups (**A** and **B**) of 10.
- Group **A** was given a diet rich in saturated fats, while group **B** followed a diet low in saturated fats.
- The levels of low-density lipoprotein (LDL) in their blood was monitored over a six month period. High LDL levels has been linked to an increase in the risk of developing CHD.

At The end of the study the levels of LDL in group **A** was much higher than that of group **B**. The scientists concluded that saturated fats increases the risk of developing CHD.

Which evaluation of their conclusion would be most valid?

- A. The conclusion of the scientist may not be valid as they would have to repeat the investigation over a longer period of time, using animal test subjects
- B. The conclusion of the scientists may not be valid as they should have monitored a larger number of women between the ages of 20 and 35
- C. The conclusion of the scientists may not be valid as they should have taken into consideration the medical history of the women
- D. The conclusion of the scientists may not be valid as they should have repeated their investigation with women over the age of 75

[1 mark]



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