5.3 Health, Fitness and Wellbeing: Macronutrients - Carbohydrate, Fat and Protein: 10-minute Pack

AQA 8582 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which macronutrient is the body's preferred energy source during exercise, particularly at higher intensities?

- [ ] A) Carbohydrate
- [ ] B) Protein
- [ ] C) Fat
- [ ] D) Fibre

(Total for Question 1 is 1 mark)

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2 State two functions of fat in the body, other than as an energy source.

(Total for Question 2 is 2 marks)

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3 The approximate energy value of carbohydrate is 4 kcal per gram, and the approximate energy value of fat is 9 kcal per gram. A snack contains 30 g of carbohydrate and 10 g of fat. Using the formula energy (kcal) = mass (g) x energy value (kcal per g), calculate the total energy provided by the carbohydrate and fat in this snack.

(Total for Question 3 is 2 marks)

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4 Explain the process by which dietary energy that is not used by the body can be stored as body fat, and explain why this is a normal physiological process rather than, by itself, evidence of an unhealthy diet.

(Total for Question 4 is 3 marks)

5 State which macronutrient is likely to be her main energy source during the race, and justify your answer.

(Total for Question 5 is 2 marks)

6 Explain why protein is not usually the body's main energy source during exercise.

(Total for Question 6 is 2 marks)

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Mark scheme · 5.3 Health, Fitness and Wellbeing: Macronutrients - Carbohydrate, Fat and Protein: 10-minute Pack

Question 1

A **B1**

Answer: A

Question 2

insulation, helping to maintain body temperature, oe **B1**

protection/cushioning of internal organs, oe **B1**

Answer: Fat helps to insulate the body, maintaining body temperature, and it cushions and protects internal organs.

Question 3

30 x 4 (= 120) or 10 x 9 (= 90) seen, oe **M1**

210 kcal cao **A1**

Answer: 210 kcal.

Question 4

when energy intake from food and drink is greater than energy expenditure over a period of time, the surplus energy can be stored by the body, partly as fat, oe **B1**

this is a normal, useful physiological mechanism that allows the body to store energy for later use, oe **B1**

whether this represents a health concern depends on many other factors (e.g. the amount, how long it continues, the individual), so it cannot be judged from this process alone, oe **B1**

Answer: When energy intake is greater than energy expenditure over time, the surplus energy can be stored by the body, partly as fat. This is a normal, useful physiological process that allows the body to store energy for later use, and whether it represents a health concern depends on many other factors, so it cannot be judged from this process alone.

Question 5

carbohydrate, oe **B1**

because the event is short and high-intensity, and carbohydrate can be broken down quickly enough to match this energy demand, oe **B1**

Answer: Carbohydrate, because the event is short and high-intensity, and carbohydrate can be broken down quickly enough to match this energy demand.

Question 6

the body preferentially uses carbohydrate and fat stores for energy during exercise, oe **B1**

protein is only broken down for energy in any significant amount when carbohydrate and fat stores are very depleted, oe **B1**

Answer: The body preferentially uses carbohydrate and fat stores for energy during exercise, and protein is only broken down for energy in significant amounts when carbohydrate and fat stores are very depleted.

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