

New
Specification



Rewarding Learning

General Certificate of Secondary Education
2018

Centre Number

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Candidate Number

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Biology

Unit 1

Foundation Tier



[GBL11]

GBL11

FRIDAY 8 JUNE, MORNING

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all eleven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 75.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question 5.



1 Different reagents are used to test for each type of food.

(a) Draw a line to link each type of food to the correct food testing reagent.

Type of food	Reagent
starch	ethanol
protein	iodine solution
fat	Biuret

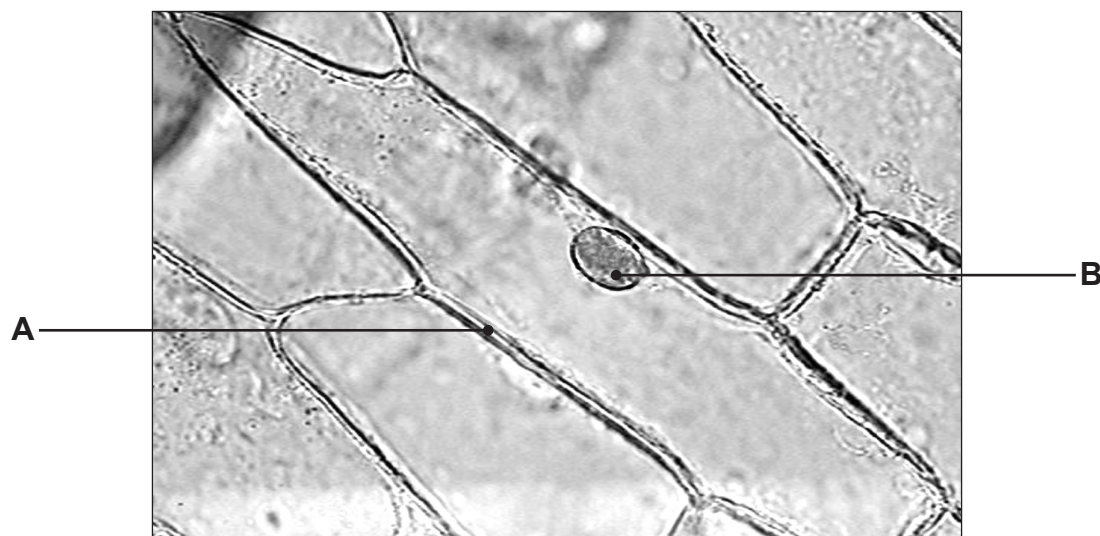
[2]

(b) Describe how you would test a fruit juice for the presence of sugar.

[2]



2 The photograph shows plant cells seen through a microscope.



Source: Chief Examiner

Look at the photograph.

(a) Complete the table.

Label	Structure	Function
A		Makes the cell rigid and provides support.
B		

[3]

(b) Where do most chemical reactions take place in a cell?

[1]

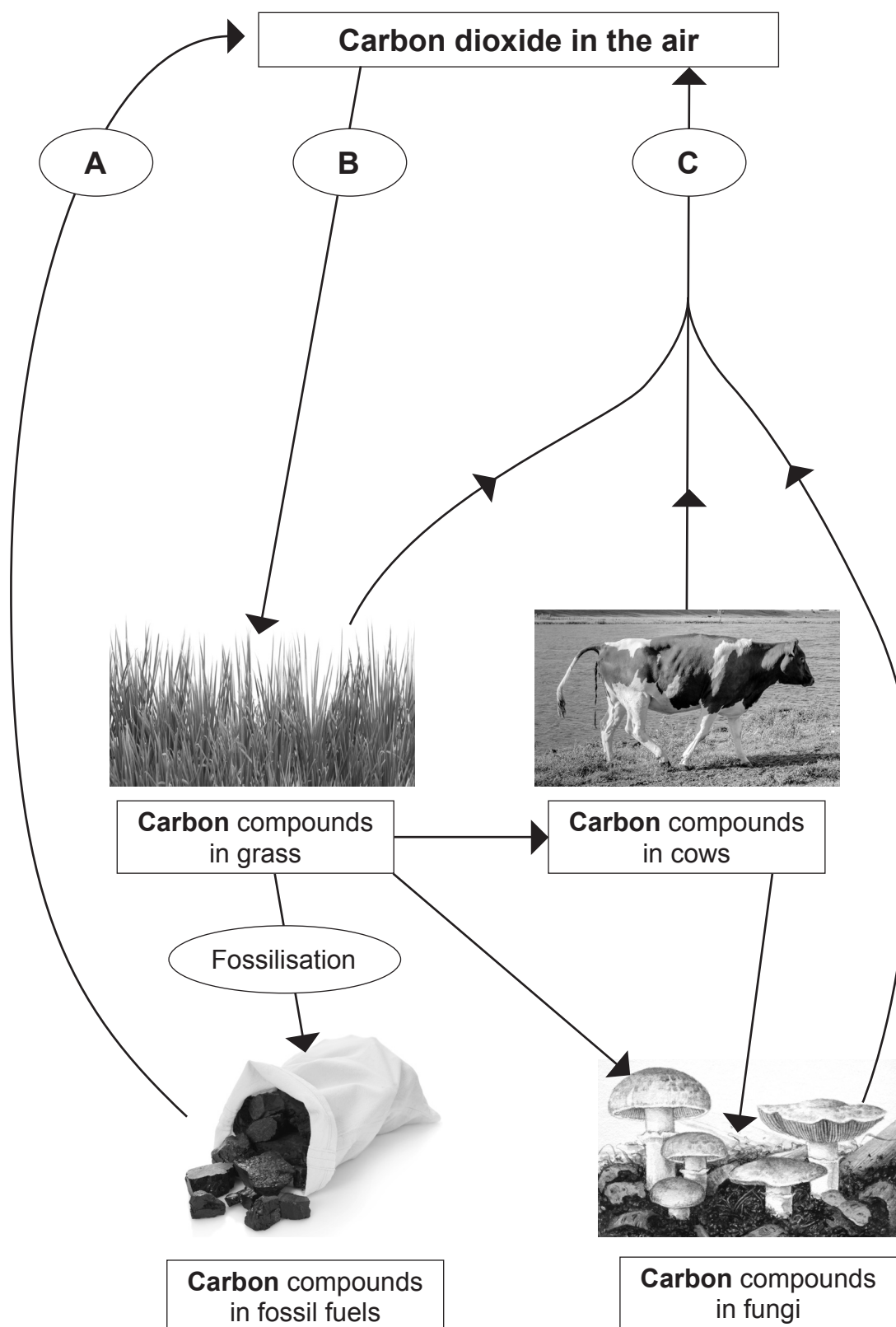
(c) Give **one** difference between the cell wall of a bacterium and the cell wall of a plant cell.

[1]

[Turn over]



3 The diagram shows part of the carbon cycle.



Source: Images © Getty Images



Look at the diagram.

(a) Name processes **A**, **B** and **C**.

A _____ [1]

B _____ [1]

C _____ [1]

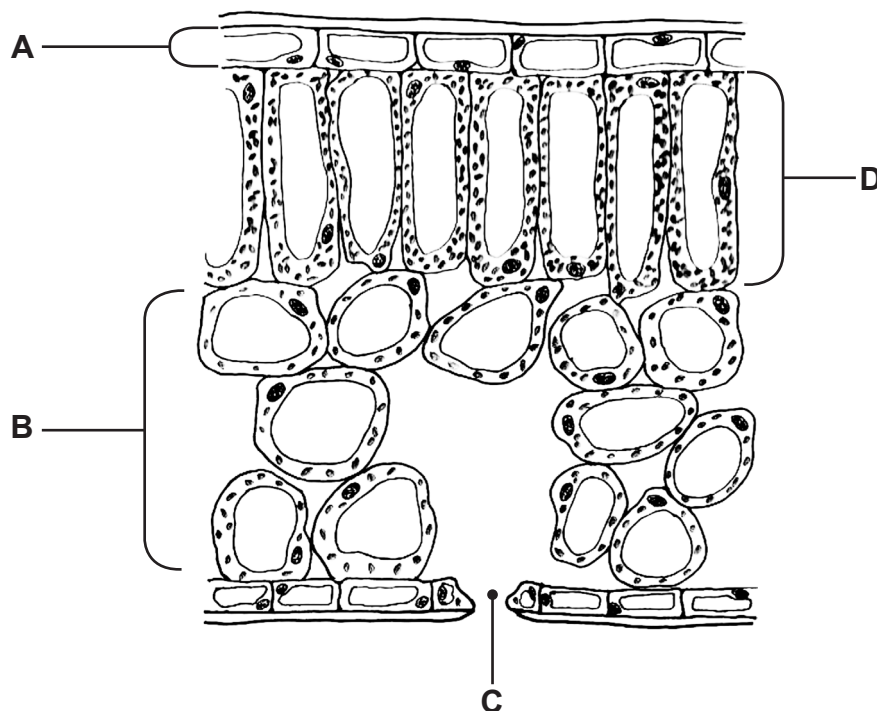
(b) Describe how carbon compounds in cows become carbon compounds in fungi.

_____ [3]

[Turn over



4 The drawing shows a section through a leaf.



Source: Chief Examiner

Look at the diagram.

(a) Name parts **A**, **B** and **C**.

A _____ [1]

B _____ [1]

C _____ [1]

(b) The leaf is adapted so that most photosynthesis takes place in layer **D**.

Give **two** ways layer **D** is adapted.

1. _____

2. _____

_____ [2]





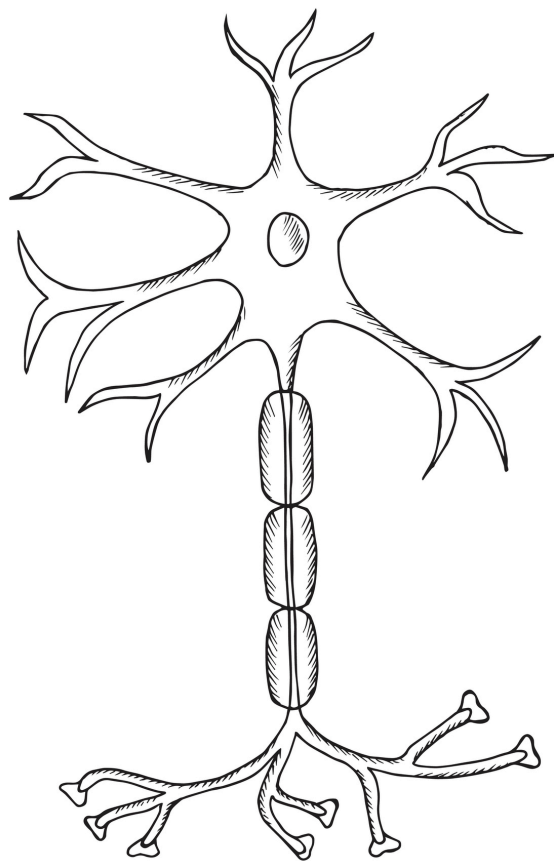
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(Questions continue overleaf)



5 The diagram shows a neurone.



Source: © Getty Images



In this question, you will be assessed on your written communication skills, including the use of specialist scientific terms.

[illegible]

[6]

[Turn over

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- 6 The table shows the masses of some types of biological molecules found in three different breakfast cereals, **A**, **B** and **C**.

Biological molecule	Mass of each type of biological molecule /g per 100 g of breakfast cereal		
	A	B	C
Carbohydrate	74.5	69.0	80.0
Protein	8.5	12.5	10.3
Fat	4.7	2.5	5.0

Look at the table.

During active growth teenagers need a source of amino acids.

- (a) Which breakfast cereal would be the best for a teenager to eat during a period of active growth?

Explain your answer.

Cereal _____ [1]

Explanation _____

_____ [2]



- (b) The carbohydrate, protein and fat molecules found in this cereal need to be digested before they can be absorbed into the blood.

Explain why.

[2]

- (c) Give **two** ways the ileum is adapted for absorption.

1.

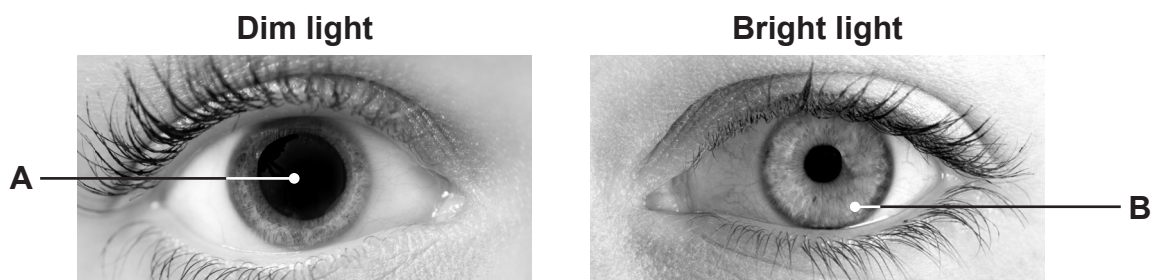
[1]

2.

[1]



- 7 (a) The photographs show eyes in two different light conditions.



Look at the photographs.

- (i) Name parts **A** and **B**.

A _____ [1]

B _____ [1]

- (ii) Give **two** ways the eye in bright light differs in appearance from the eye in dim light.

1. _____ [1]

2. _____ [1]

- (iii) Suggest why these changes are necessary.

_____ [2]



(b) (i) Which part of the eye prevents the entry of microorganisms?

[1]

(ii) Name the part of the eye that transfers nerve impulses to the brain.

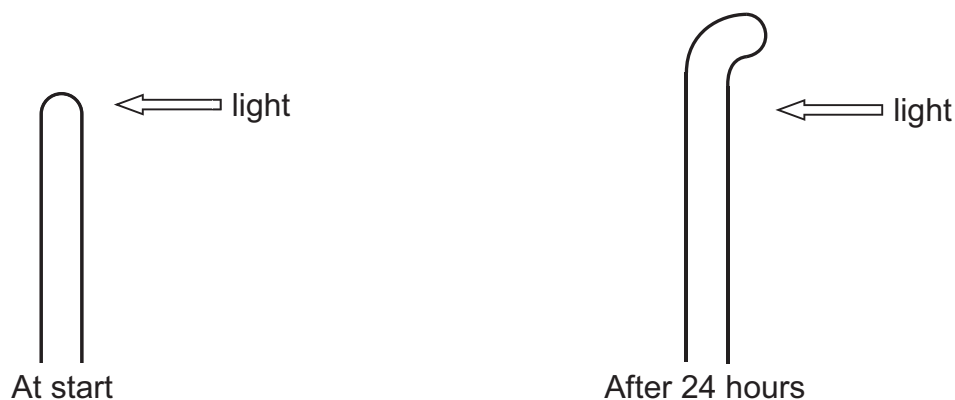
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- 8 (a) A plant seedling received bright light from one side.

The diagram shows the plant seedling at the start and after 24 hours.



Look at the diagram.

- (i) Name this response to light.

[1]

- (ii) Name the plant hormone which brings about this response.

[1]



(iii) Explain how this response is brought about.

[2]

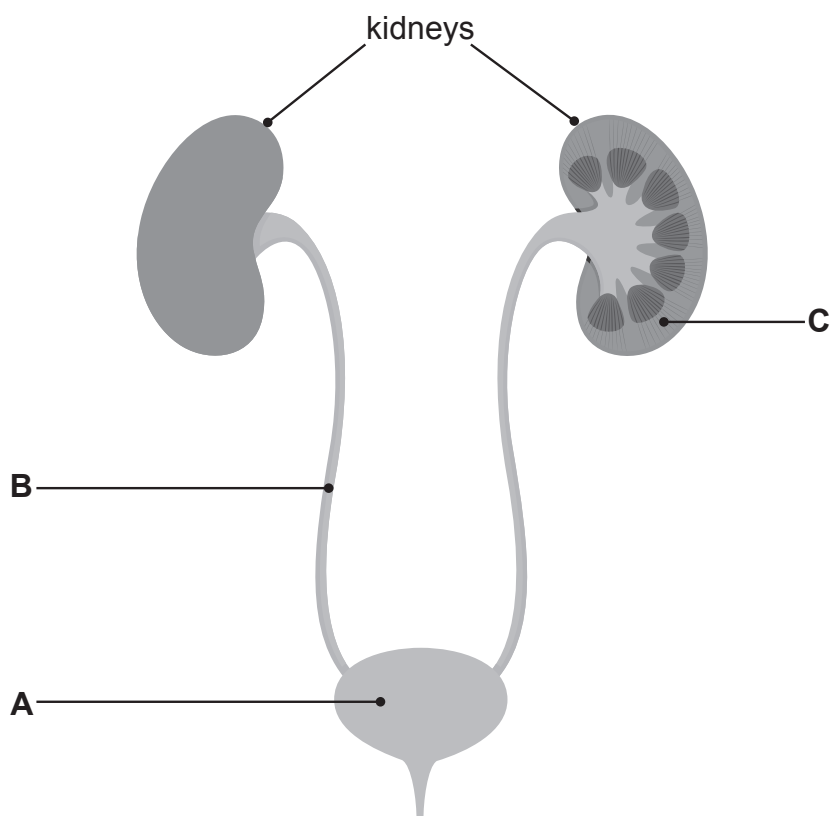
(b) Explain the advantage of this response to the plant seedling.

[2]

[Turn over



- 9 (a) The diagram shows part of the human excretory system.



Source: © MatoomMi / iStock / Thinkstock

Look at the diagram.

- (i) Name parts **A** and **B**.

A _____

B _____

[2]

- (ii) Name the region of the kidney labelled **C**.

[1]

- (b) The kidneys help in homeostasis by balancing the amount of water in the body.

- (i) Name this process _____ [1]



The table shows the volume of water gained and lost by a person over 24 hours.

Volume of water/cm ³					
Gained			Lost		
Food	Drink	Respiration	Breathing	Sweat	Urine
500	2000		400	1750	700

The total volume of water gained is equal to the total volume of water lost over 24 hours.

(ii) Calculate the volume of water gained from respiration in this 24-hour period.

Show your working.

_____ cm³ [3]

The next day was hot and the volume of water the person lost in urine was 500 cm³.

The total volume of water gained was the same on both days.

(iii) Describe and explain the difference in the volume of urine the person produced on the hot day compared to the day before.

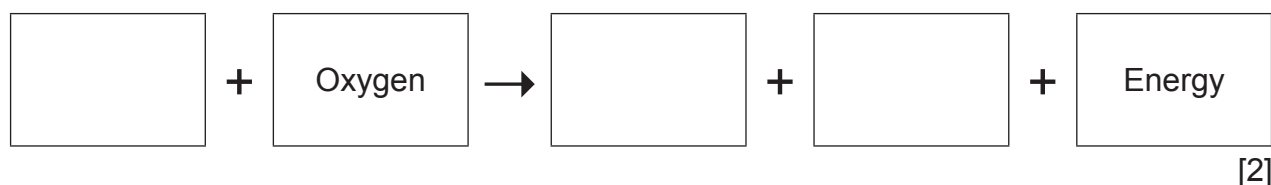
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10 Muscle cells use aerobic respiration to release energy.

(a) Complete the word equation for aerobic respiration.

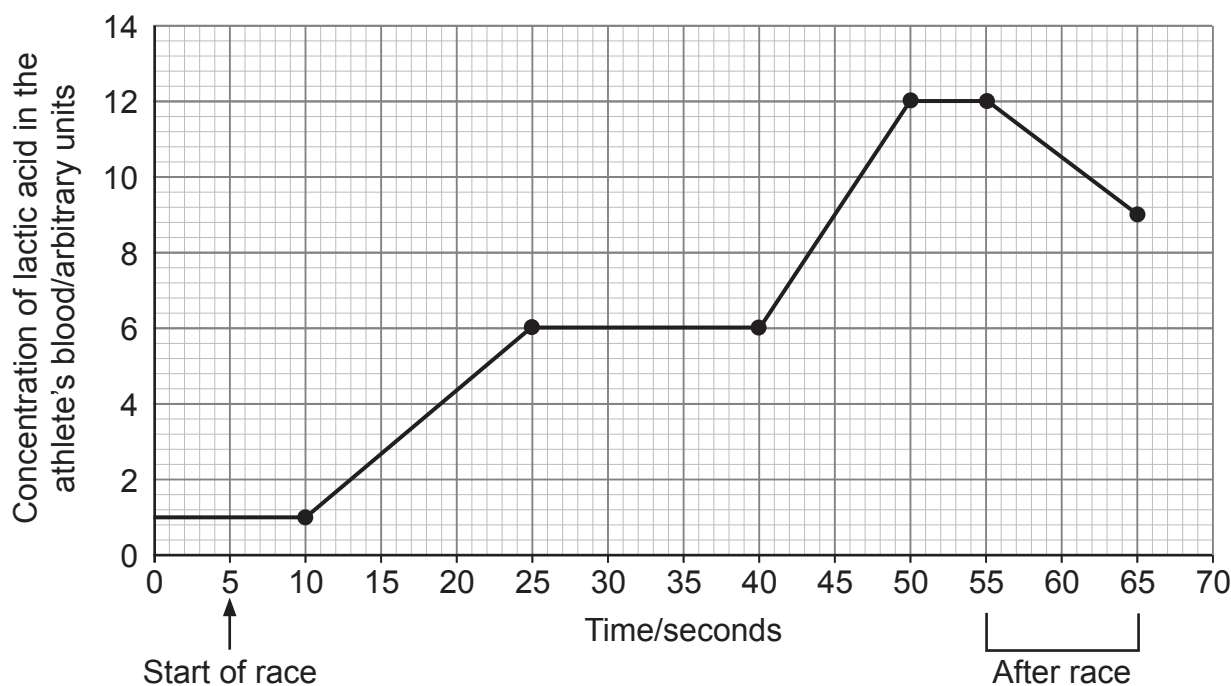


(b) While running, an athlete can use both **aerobic** and **anaerobic** respiration to release energy.

Anaerobic respiration produces lactic acid, which is added to the athlete's blood.

After exercise, lactic acid is broken down in the muscle cells using oxygen.

The graph shows the concentration of lactic acid in the athlete's blood before, during and after a race.



© Adapted from: <https://www.tes.com/teaching-resource/respiration-in-athletics-worksheet-6164579>

Use the graph and the information given to help answer the following questions.

(i) What is the concentration of lactic acid in the athlete's blood at the start of the race?

_____ [1]



- (ii) During the race, give the **two** time periods when the athlete is respiring **anaerobically**.
Use evidence from the graph to explain your answer.

Time period

1. From _____ to _____ [1]

2. From _____ to _____ [1]

Explanation

_____ [1]

- (iii) Describe and explain the lactic acid concentration in the athlete's blood between 25 and 40 seconds.

_____ [2]

- (iv) Describe and explain what happens when the athlete finishes the race.

_____ [2]

[Turn over]



11 The following sentences give information about feeding relationships.

Grass is a producer.

Rabbits, slugs and insects are primary consumers.

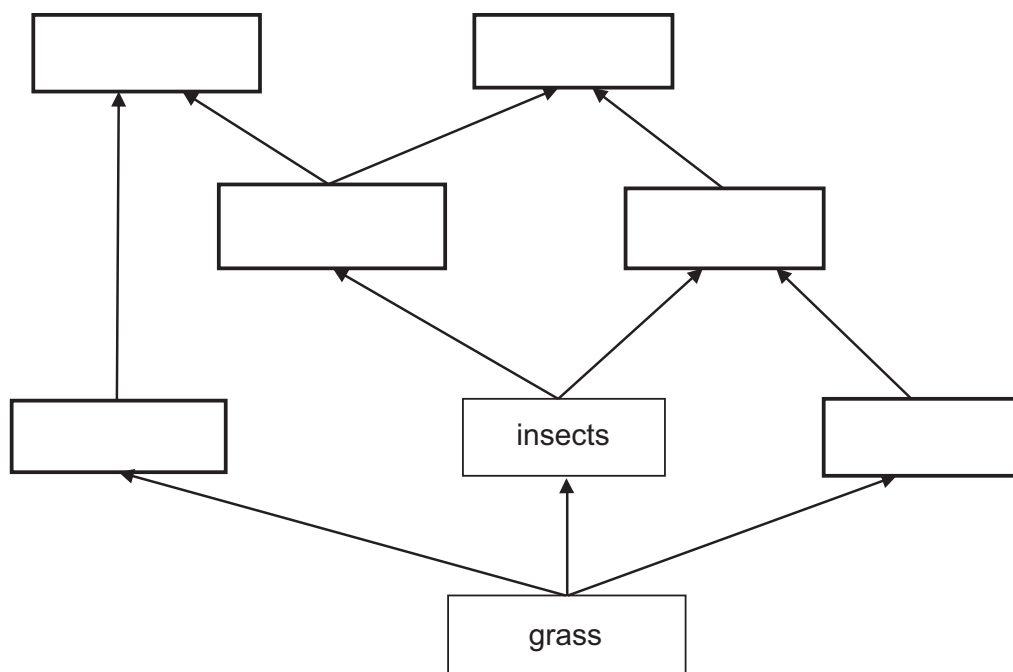
Frogs and thrushes eat insects.

Thrushes also eat slugs.

Hawks are predators of thrushes and frogs.

Foxes eat rabbits and frogs.

(a) Use the information in the sentences to **complete the food web**.



Source: Principal Examiner

[3]

(b) What is the source of energy in this food web?

[1]



(c) Name an animal that feeds at **two** trophic levels in this food web.

[1]

(d) What do the arrows in the food web represent?

[1]

(e) What is the role of a producer in a food web?

[2]

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Question Number	Marks
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Examiner Number

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