



General Certificate of Secondary Education
2010–2011

Centre Number

71

Candidate Number

Science: Double Award (Modular)

Living Organisms and the Processes of Life
End of Module Test

A

Foundation Tier

[GDA01]



WEDNESDAY 10 NOVEMBER 2010, AFTERNOON

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all twelve** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

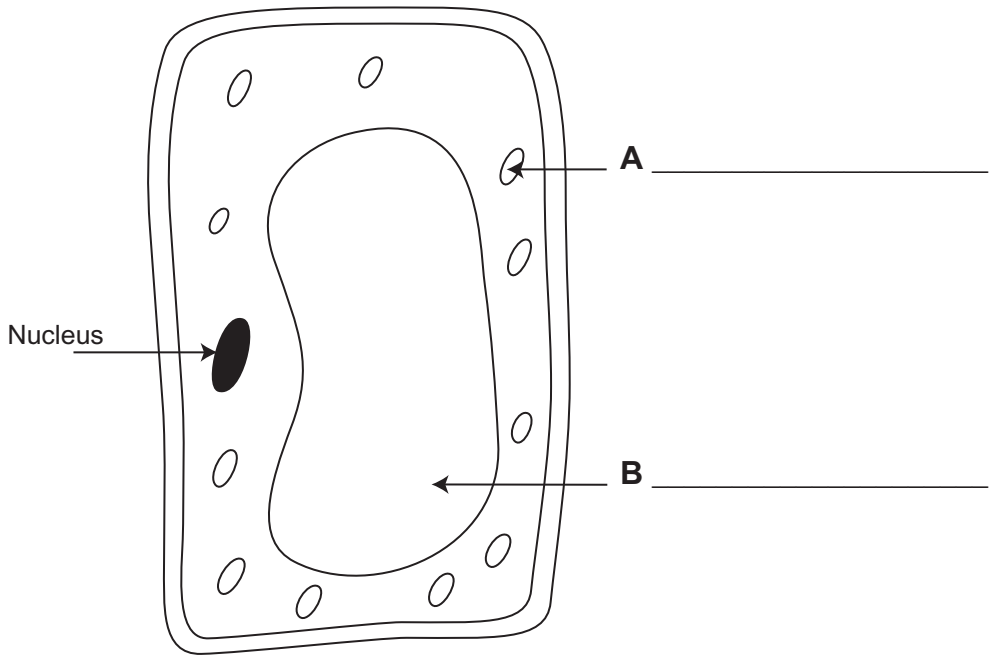
For Examiner's
use only

Question Number	Marks
1	
2	
3	
4	
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6	
7	
8	
9	
10	
11	
12	

Total
Marks



1 Amy observed this cell through a microscope.



(a) Label parts **A** and **B** on the diagram. [2]

(b) Give one way that Amy knows that this is a plant cell.

_____ [1]

(c) Give a function of the nucleus.

_____ [1]

Examiner Only	
Marks	Remark

2 (a) Complete the table about vitamins and their sources in the diet.

Vitamin	Source
	Citrus fruit
Vitamin D	

[2]

(b) (i) Name the food test you would use to test a biscuit for sugar.

_____ [1]

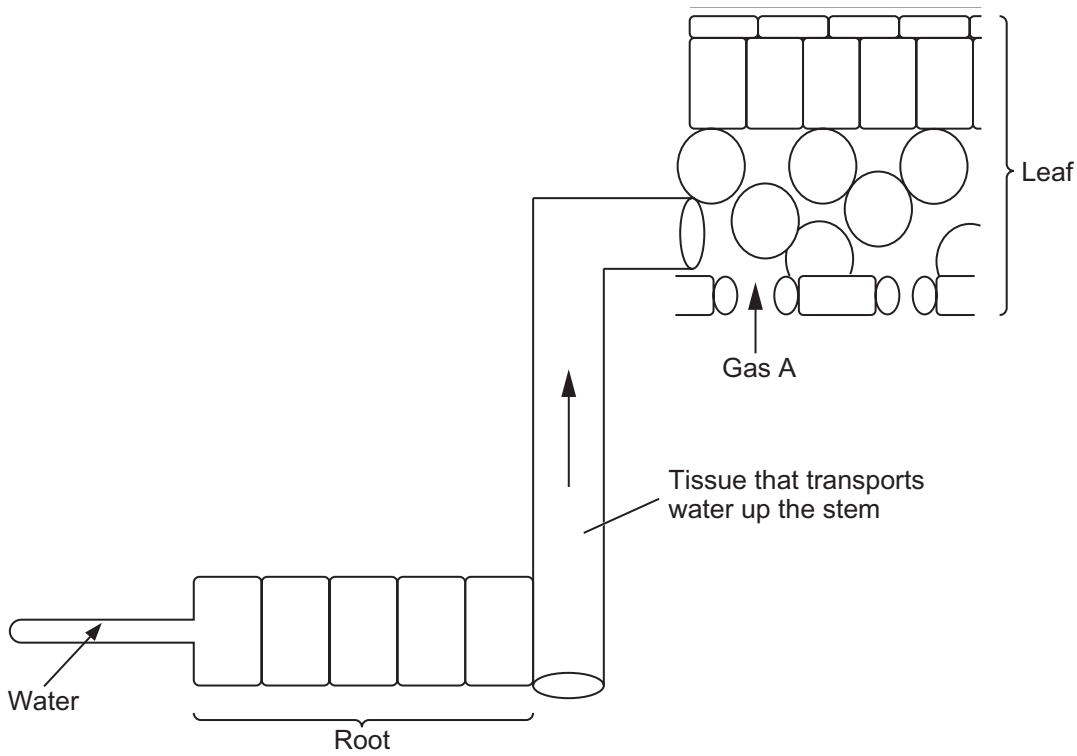
(ii) Describe the result you would obtain if sugar was present.

_____ [1]

Examiner Only	
Marks	Remark

3 The diagram shows structures involved in plant transport.

Examiner Only	
Marks	Remark



(a) Use the diagram and your knowledge to name:

(i) the type of cell that absorbs water from the soil;

_____ [1]

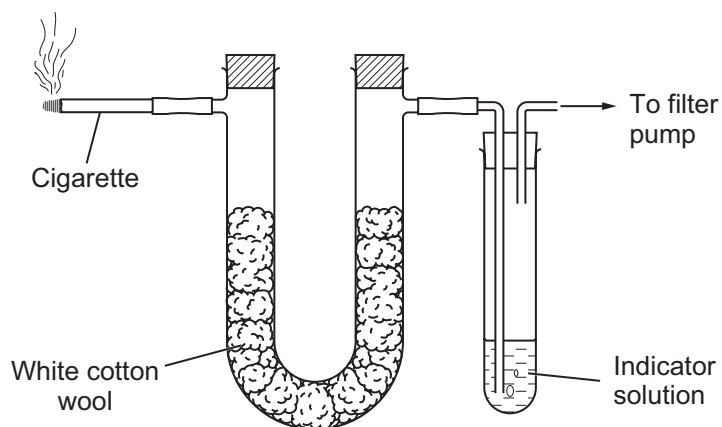
(ii) the tissue that transports water up the stem.

_____ [1]

(b) If the plant is kept in **darkness**, name gas A that enters the leaf through the stomata.

_____ [1]

4 The diagram shows a “smoking machine”.



(a) Suggest the name of the chemical present in cigarette smoke that causes the cotton wool to turn yellow and can lead to lung cancer.

_____ [1]

(b) Explain why smoking cigarettes causes less oxygen to be carried in the blood.

_____ [2]

(c) Apart from causing lung cancer, give one other way the body is harmed by smoking cigarettes.

_____ [1]

Examiner Only	
Marks	Remark

5 Testing a leaf for starch includes the stages listed below.
The stages are not in the correct order.

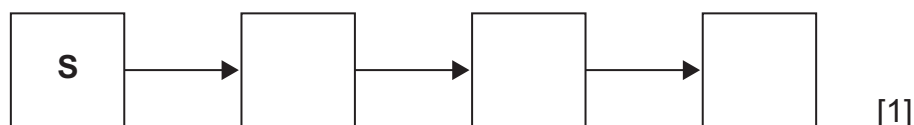
Stage P: Iodine added

Stage Q: Leaf boiled in alcohol

Stage R: Leaf softened in hot water

Stage S: Leaf boiled in water

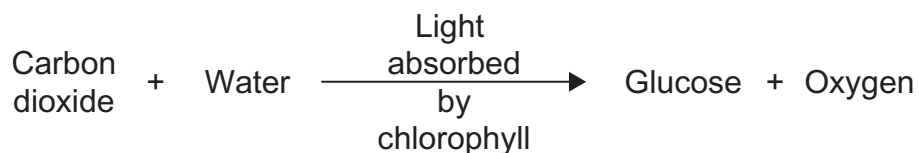
(a) Fill in the boxes to complete the order in which these stages are carried out.



(b) Explain why the leaf is boiled in alcohol (Stage Q).

_____ [1]

(c) The equation for photosynthesis is given below.



State one way in which the plant uses the glucose made.

_____ [1]

Examiner Only

Marks Remark

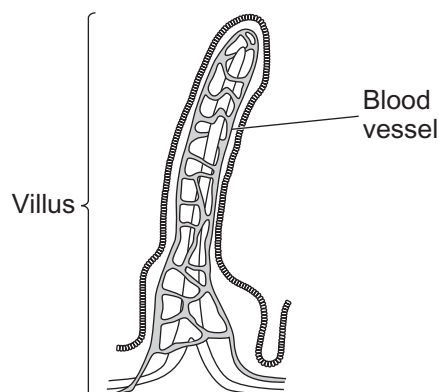
6 In digestion, large food molecules are broken down into smaller ones that can be absorbed.

(a) Complete the table below about the role of enzymes in digestion.

Enzyme	Large food molecule	Small food molecule(s)
Amylase	Starch	Sugar
Protease	Protein	
Lipase	Fats	

[3]

(b) The diagram shows a villus from the human digestive system.



(i) Name the part of the digestive system where villi are present.

_____ [1]

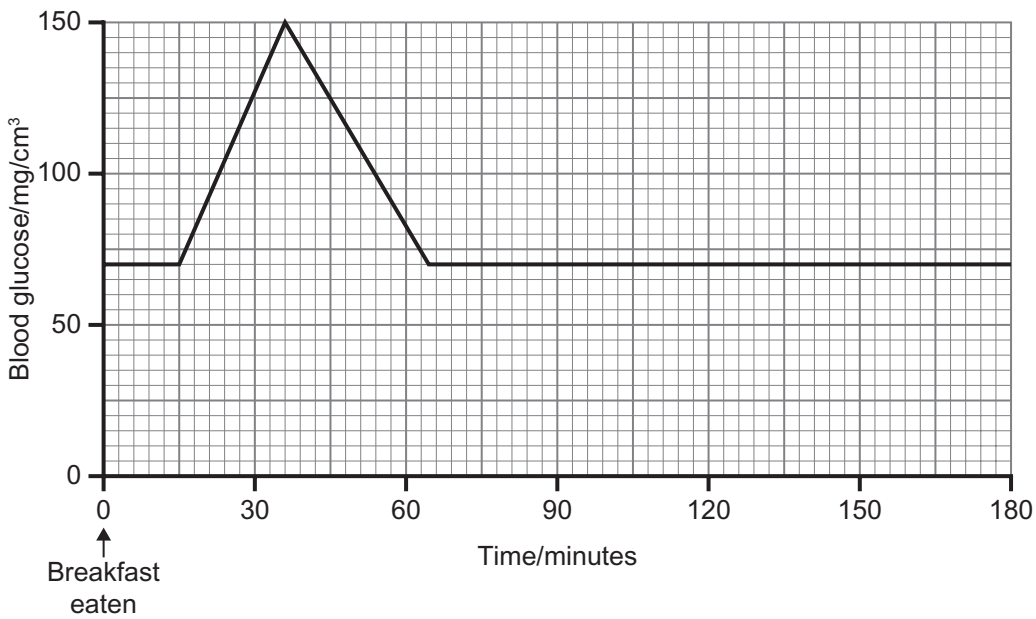
(ii) Explain the importance of having thousands of villi in this part of the digestive system.

 _____ [2]

Examiner Only	
Marks	Remark

7 The graph shows changes in Mary's blood glucose levels after she ate breakfast.

Examiner Only	
Marks	Remark



(a) Suggest why the blood glucose level did not start to increase for 15 minutes after Mary had eaten breakfast.

_____ [1]

(b) Name the hormone that causes the blood glucose level to return to normal.

_____ [1]

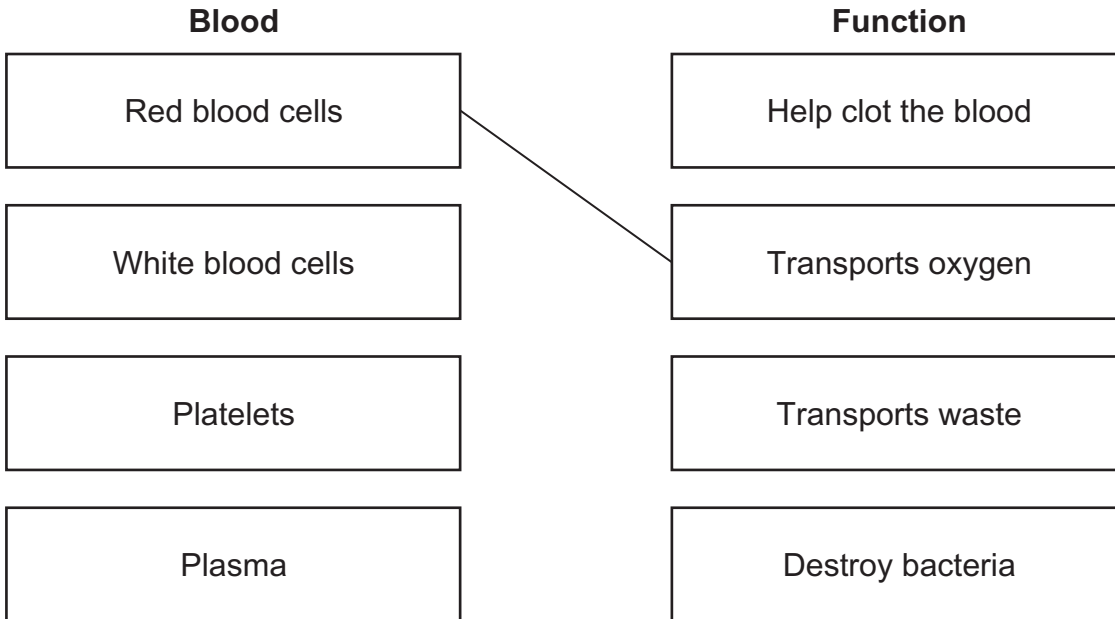
(c) Suggest one way in which this hormone causes the glucose levels to fall.

_____ [1]

9 The blood is made up of cells, plasma and platelets.

(a) Draw one line from each blood component to its function.

One example has been completed for you.



[2]

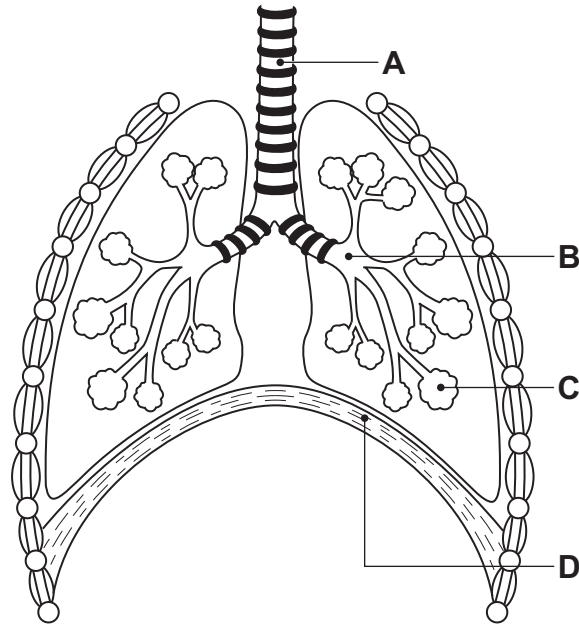
(b) The heart is supplied with blood by the coronary artery.

Explain why eating too much animal fat can cause a heart attack.

[3]

Examiner Only	
Marks	Remark

10 The diagram shows the human respiratory system.



(a) Which letter, **A**, **B**, **C** or **D** points to a bronchus?

_____ [1]

(b) Name the process by which oxygen moves from the alveoli into the blood.

_____ [1]

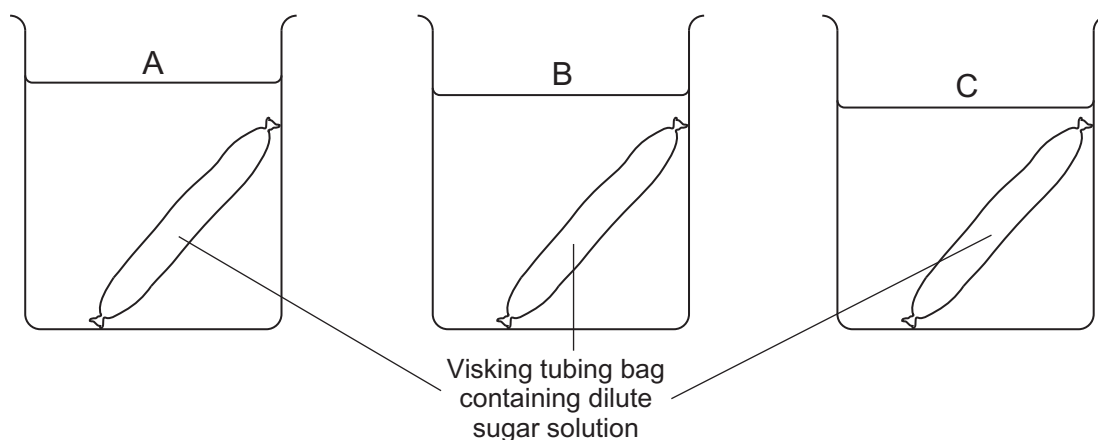
(c) Describe and explain the mechanism of inhalation (breathing in).

_____ [4]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

11 Paul filled three Visking tubing bags with dilute sugar solution as shown in the diagram. Visking tubing is selectively permeable. He then placed each bag into one of three beakers, A, B and C. One beaker contained water, another dilute sugar solution and the other concentrated sugar solution.



After being weighed the bags were left in the beakers for one hour. They were then removed, excess liquid on the outside dried and the bags reweighed. The results are shown in the table.

Beaker	Mass of Visking tubing bag at start/g	Mass of Visking tubing bag after one hour/g	Change in mass/g
A	10.0	14.9	+4.9
B	10.0	10.0	0
C	10.0	6.4	-3.6

(a) Use the results to work out which fluid was in each beaker. Write the letter of the correct beaker in the appropriate box.

Concentrated sugar solution – beaker

Dilute sugar solution – beaker [2]

(b) Explain why the Visking tubing in beaker A increased in mass.

[3]

12 (a) Name the type of micro-organism that causes the disease athlete's foot.

_____ [1]

(b) Describe how the body defends itself against bacteria that have entered the bloodstream.

_____ [3]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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