



General Certificate of Secondary Education  
2011

## Science: Biology

Paper 1  
Foundation Tier

[G0901]

THURSDAY 19 MAY, AFTERNOON

StudentBounty.com

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71	
Candidate Number	
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### TIME

1 hour.

### 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 fourteen** questions.

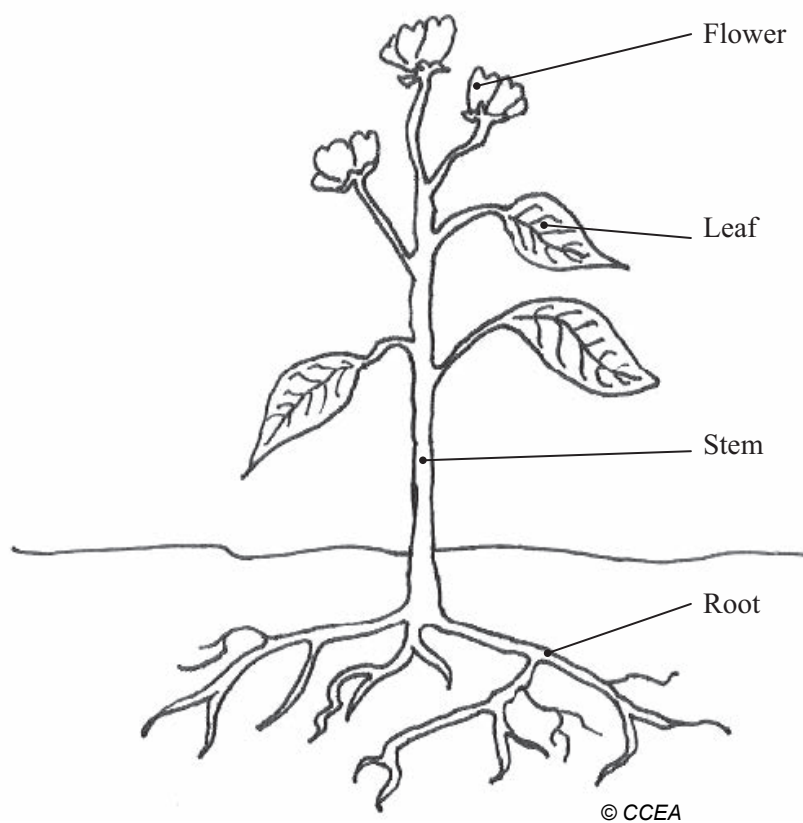
### INFORMATION FOR CANDIDATES

The total mark for this paper is 80.  
Quality of written communication will be assessed in question **14(c)**.  
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	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
<b>Total Marks</b>	



1 The diagram shows the organs of a plant.



(a) Complete the table.

Organ	Function
	Absorb water
Leaf	
Flower	

[1]

[1]

[1]

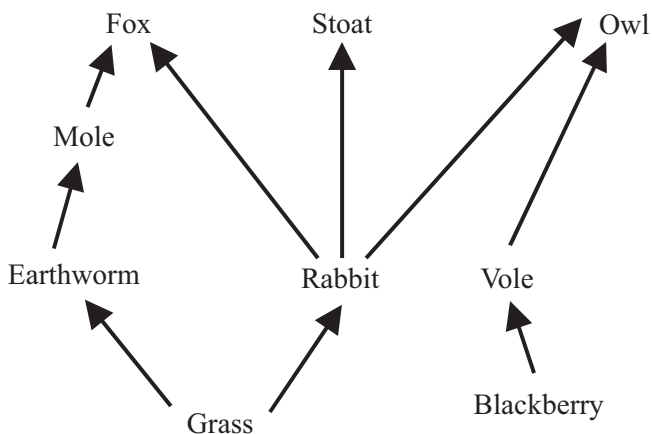
(b) Give **two** functions of the stem.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

2 The diagram shows a food web.



(a) Use the food web to complete the food chain.

**Mole**

[2]

(b) Name

the source of energy. \_\_\_\_\_

[1]

a producer. \_\_\_\_\_

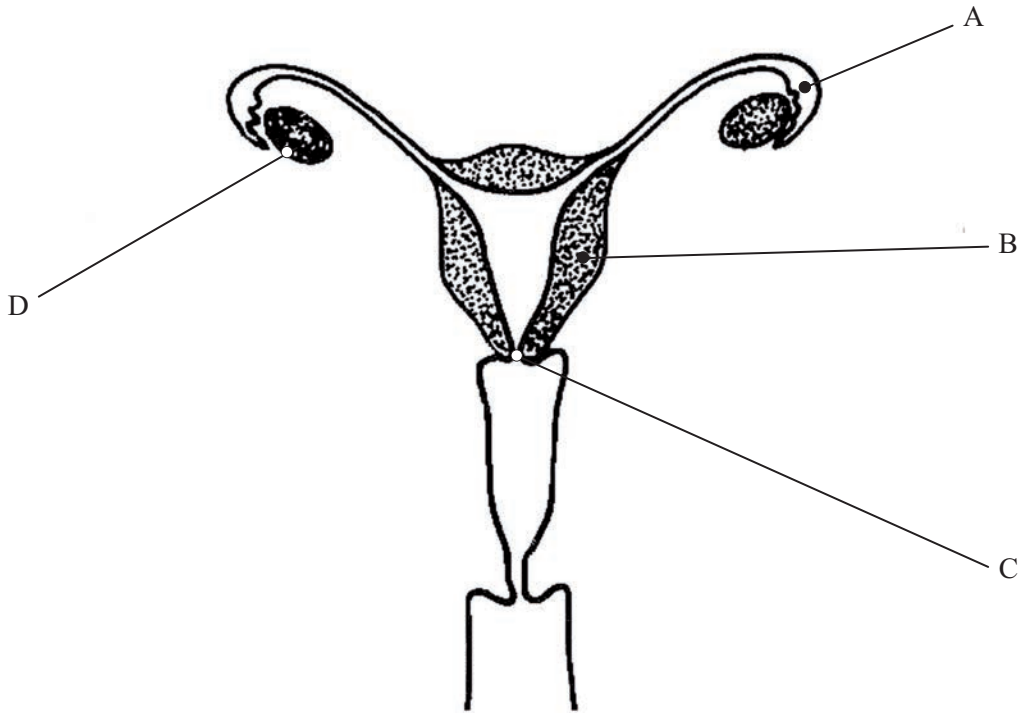
[1]

(c) What would happen to the number of moles if all the foxes were killed?

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

3 The diagram shows the female reproductive system.



© *Biology Alive* by J Bushell and P Nicholson, published by Collins Educational, 1985.  
ISBN 0003277577. Reprinted by permission of Harper Collins Publishers Ltd.

(a) Label parts A, B and C.

A \_\_\_\_\_ [1]

B \_\_\_\_\_ [1]

C \_\_\_\_\_ [1]

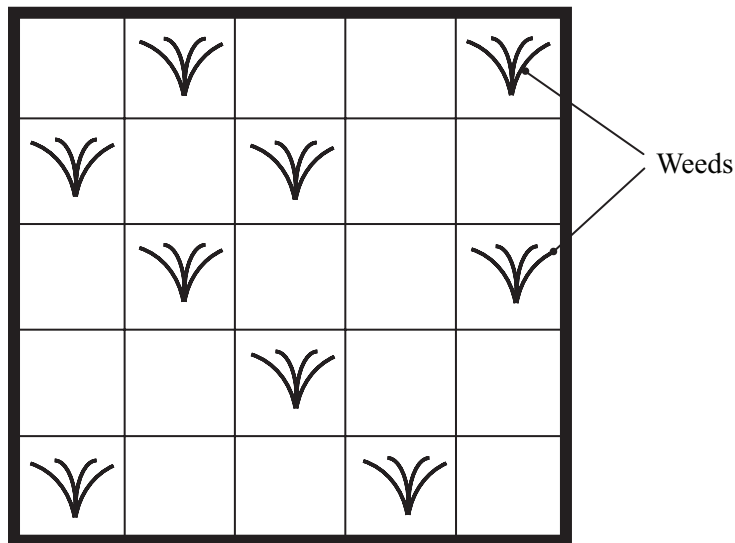
(b) What is the function of part D?

\_\_\_\_\_ [1]

(c) **On the diagram mark with an X** the place where sperm are released during sexual intercourse. [1]

Examiner Only	
Marks	Remark

- 4 The diagram shows the apparatus used to sample the population of weeds on a lawn.



- (a) Name the apparatus.

\_\_\_\_\_ [1]

The apparatus is divided up into 25 squares.

- (b) Calculate the percentage of squares which contain weeds.  
Show your working.

\_\_\_\_\_ % [2]

- (c) Explain why the apparatus must be randomly placed on the lawn.

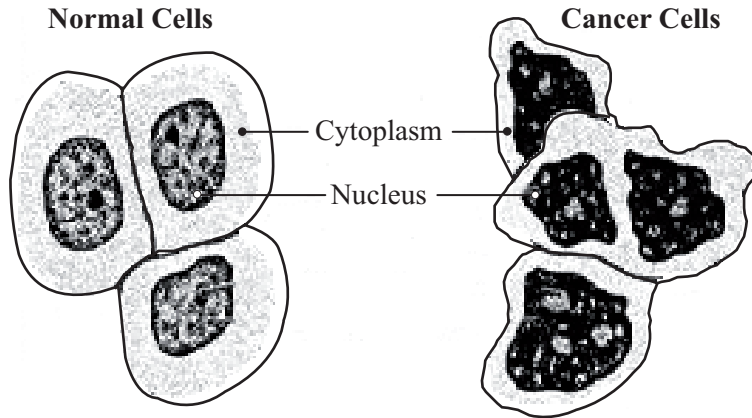
\_\_\_\_\_  
\_\_\_\_\_ [1]

- (d) Suggest why this apparatus is not usually used to sample animal populations.

\_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

5 The diagrams show normal cells and cancer cells.



Examiner Only	
Marks	Remark

(a) Describe **two** differences, shown in the diagram, between normal cells and cancer cells.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

(b) Give **one** way of treating cancer.

\_\_\_\_\_ [1]

(c) Explain why it is easier to treat a benign tumour than a malignant tumour.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

6 The table shows the changes that occur during puberty in males and females.

(a) Complete the table by using **either** Yes **or** No in each blank.

Change during puberty	Male	Female	
Menstruation	No	Yes	
Voice deepens			[1]
Development of breasts			[1]
Growth of pubic hair			[1]

(b) What is menstruation?

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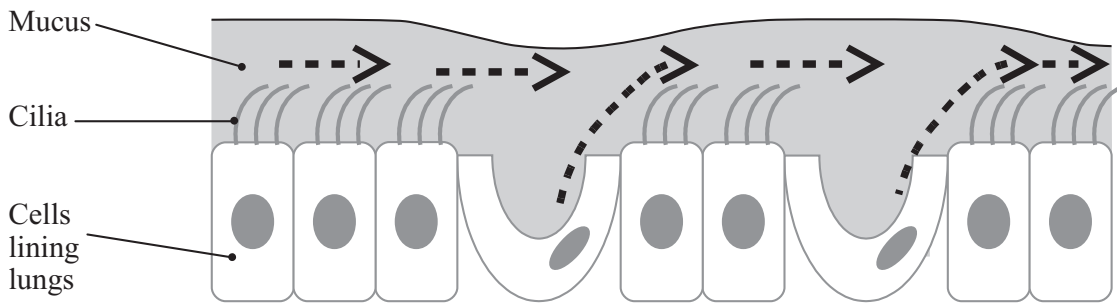
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[2]

Examiner Only	
Marks	Remark

7 (a) The diagram shows how the respiratory system prevents microbes entering the blood.



(i) Suggest the function of the

mucus. \_\_\_\_\_  
 \_\_\_\_\_ [1]

cilia. \_\_\_\_\_  
 \_\_\_\_\_ [1]

(ii) Give **one other** way the body prevents microbes **entering** the blood.

\_\_\_\_\_  
 \_\_\_\_\_ [1]

(b) A vaccine helps to prevent infections.

(i) What is a vaccine?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

(ii) Name the scientist who developed a vaccine for smallpox.

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



8 (a) Complete the table of some animal groups.

Animal group	Skin	Fertilization	Body temperature	Gas exchange surface	
Fish		External	Not constant		[2]
Amphibians	Moist	External		Skin	[1]
Birds	Feathers		Constant	Lungs	[1]

(b) Give **two** differences between reptiles and amphibians.

\_\_\_\_\_

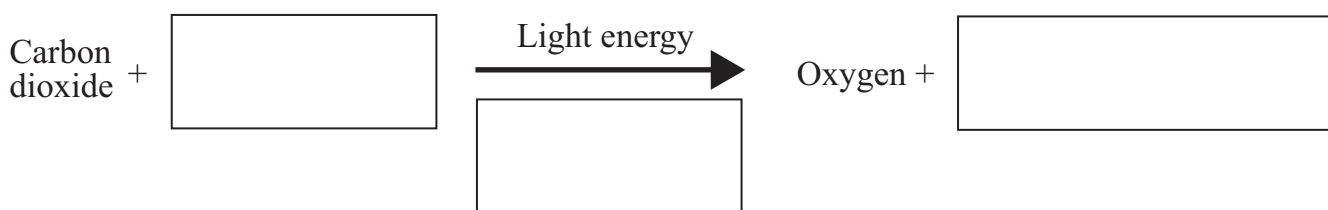
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\_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

9 (a) Complete the word equation for photosynthesis.



[3]

(b) Name **one** mineral required by plants and give its use.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

10 Breast milk contains all the nutrients a baby needs in the correct proportions.

(a) Name the **food group** needed

to provide energy. \_\_\_\_\_ [1]

for growth. \_\_\_\_\_ [1]

Breast milk also contains antibodies.

(b) Explain the advantage of these to the baby.

\_\_\_\_\_  
\_\_\_\_\_ [1]

(c) Suggest **two other** advantages of breast feeding.

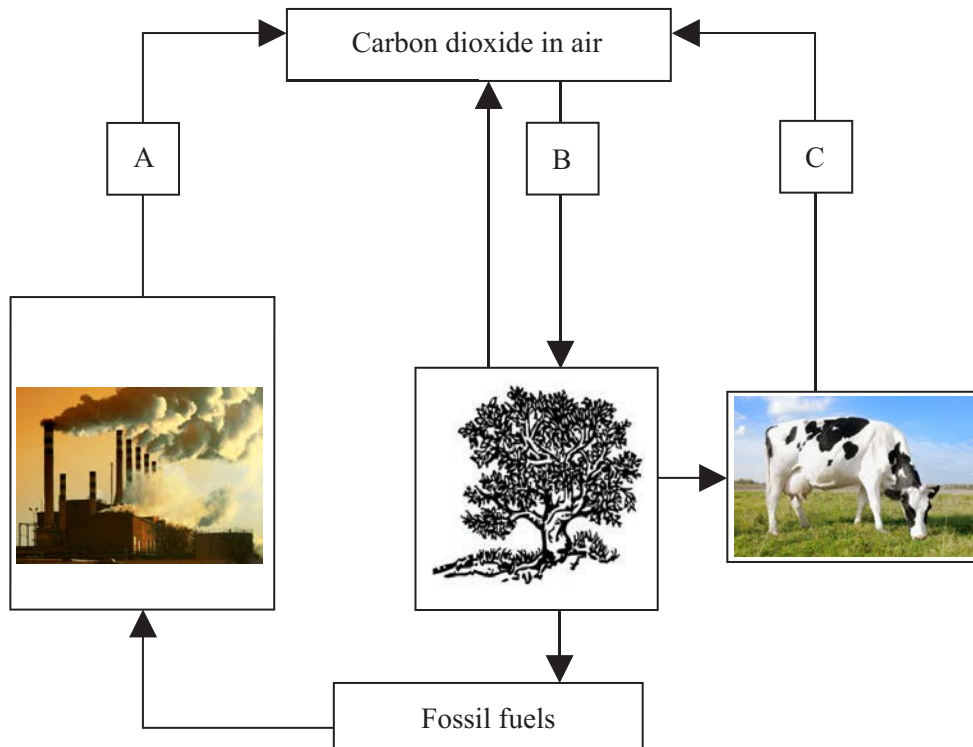
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

(d) Explain why HIV positive mothers are advised not to breast feed.

\_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

11 The diagram shows part of the carbon cycle.



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[http://classroomclipart.com/images/gallery/Clipart/Trees/tree\\_5.jpg](http://classroomclipart.com/images/gallery/Clipart/Trees/tree_5.jpg)  
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(a) Name processes A, B and C.

A \_\_\_\_\_ [1]

B \_\_\_\_\_ [1]

C \_\_\_\_\_ [1]

(b) Describe how carbon, present in plant tissue, becomes a named carbon compound in an animal.

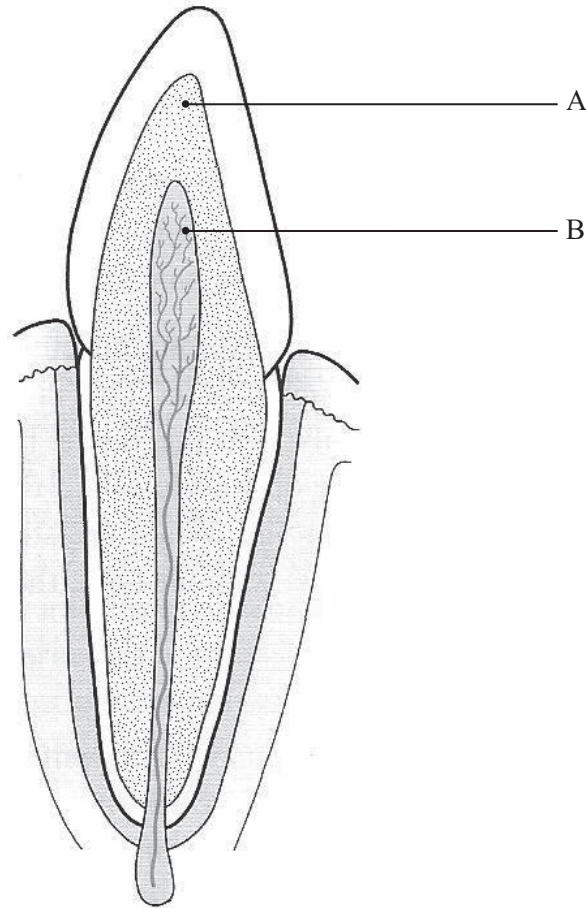
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

(c) Name a fossil fuel.

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

12 The diagram shows the structure of a tooth.



© Adapted from *Biology Lives* by Morton Jenkins, published by Hodder & Stoughton, 2001. ISBN 0340790512.

(a) Name part A.

\_\_\_\_\_ [1]

(b) Name **one** type of tissue found in cavity B.

\_\_\_\_\_ [1]

(c) Describe the role of bacteria and sugar in tooth decay.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

(d) Name the part of the tooth which is strengthened by regular use of fluoride toothpaste.

\_\_\_\_\_ [1]

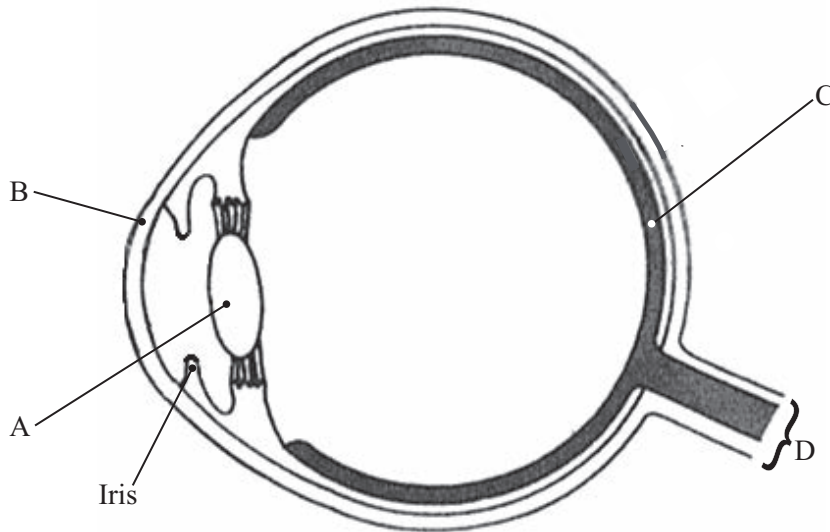
One way of ensuring that people get enough fluoride is to add it to the public drinking water.

(e) Suggest **one** reason why some people may object to this.

\_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

13 The diagram shows a simplified cross section of the eye.



(a) Name parts A, B and C.

A \_\_\_\_\_ [1]

B \_\_\_\_\_ [1]

C \_\_\_\_\_ [1]

(b) Name and give the function of part D.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

(c) Give **one** piece of evidence from the diagram, which suggests this eye is in low light conditions.

\_\_\_\_\_  
\_\_\_\_\_ [1]

(d) Name **one** structure which protects the eye from damage.

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



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