



General Certificate of Secondary Education
2011–2012

Science: Single Award (Modular)

Human Activity and Health

Module 2

Foundation Tier

[GSC21]

TUESDAY 8 NOVEMBER 2011

2.30 pm–3.15 pm



Centre Number

71

Candidate Number

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 seven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 45.

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	

Total Marks	
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1 (a) (i) Complete the following sentences.

Choose from:

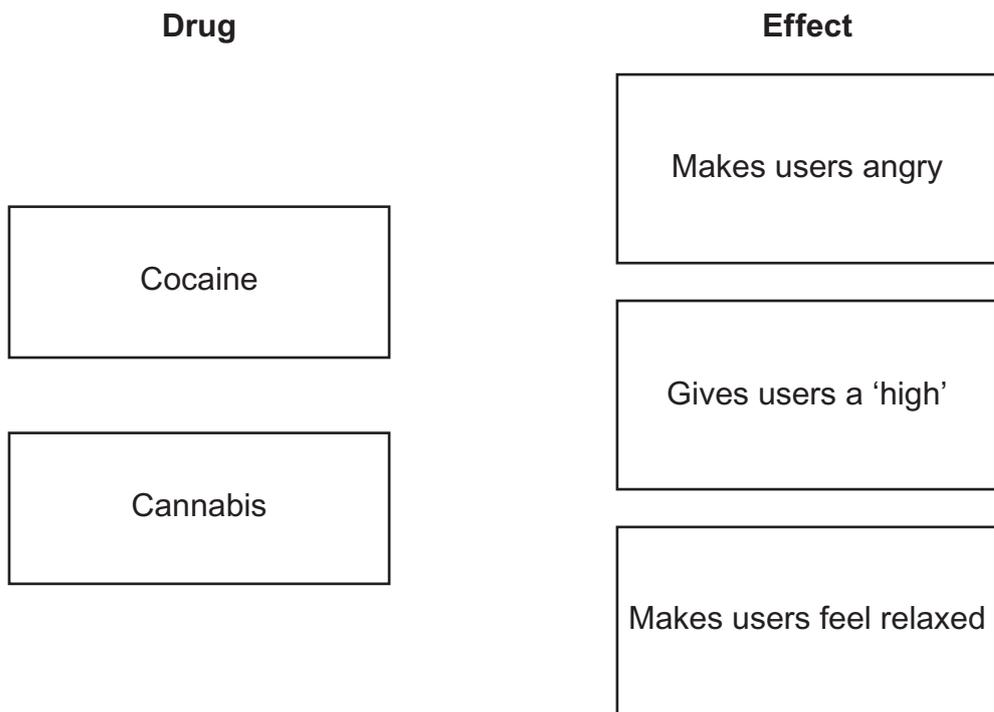
nitrogen : bronchitis : addiction : carbon monoxide

Smoking can harm the body. Harmful substances in cigarette smoke include nicotine and _____. Tar is also present and can cause _____. [2]

(ii) What is the effect of nicotine on the body?

_____ [1]

(b) Drugs can also cause harm. Using lines, link each type of drug to its main effect.



[2]

Examiner Only	
Marks	Remark

(c) John enjoys drinking alcohol but thinks that he may be drinking too much and harming his body.

Circle two things that he could do to limit his alcohol intake.

drink coffee

stick to recommended limits

drink low alcohol drinks

binge drink at weekends

[2]

Examiner Only	
Marks	Remark

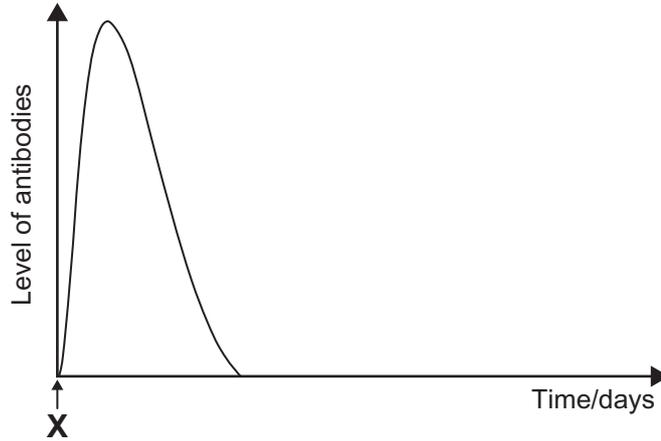
2 (a) Name a disease caused by a virus.

Choose from:

thrush polio tuberculosis

_____ [1]

(b) The following graph shows how the number of antibodies in the blood changes during passive immunity.



(i) State what is given at **X** to produce passive immunity.

Choose from:

booster antibodies blood

_____ [1]

Examiner Only	
Marks	Remark

(ii) Give one advantage of passive immunity.

Choose from:

is permanent : works quickly : only lasts for short time

_____ [1]

(c) Name the type of microbe that antibiotics defend against.

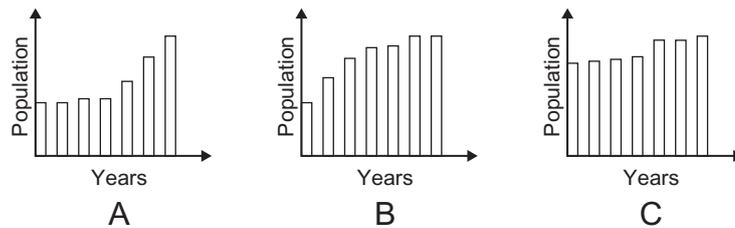
Choose from:

virus bacteria fungi

_____ [1]

(d) Better health has helped the human population to increase.

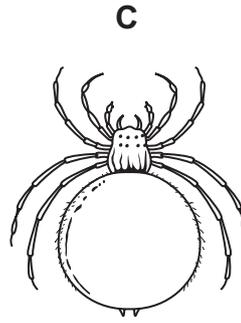
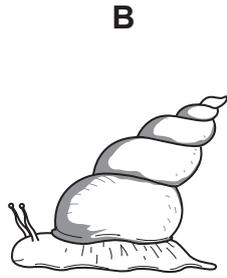
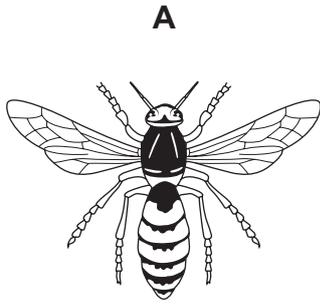
Which of the following graphs best shows this increase?



Answer (A, B or C) _____ [1]

Examiner Only	
Marks	Remark

3 (a) Use the key below to identify each of the following animals.

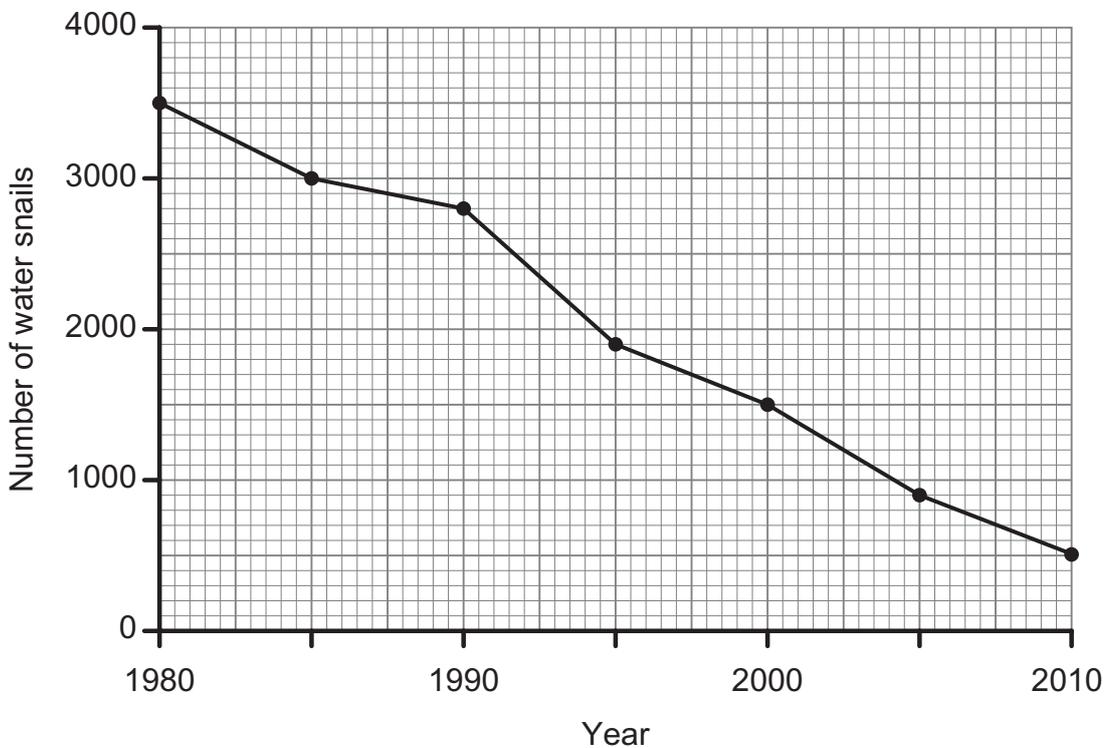


Place a letter (**A**, **B** or **C**) in the correct box beside the animal's name.

- | | | |
|-----------------|-------------|----------------------|
| 1 Shell present | Water snail | <input type="text"/> |
| Shell absent | go to 2 | |
| 2 Wings present | Insect | <input type="text"/> |
| Wings absent | Spider | <input type="text"/> |

[2]

(b) The graph below shows the results of a survey of water snails in a Northern Ireland river over the last thirty years.



Examiner Only	
Marks	Remark

- (i) Calculate the change in the number of water snails from 1980 to 2010.

Show your working

_____ [2]

- (ii) Snails have become an endangered species. What will happen to them if their numbers continue to fall?

_____ [1]

- (iii) What is the most likely reason for the falling number of water snails?

Choose from:

increasing water levels : pollution : more food available

_____ [1]

- (iv) Give two pieces of information that show that the survey of water snails is reliable.

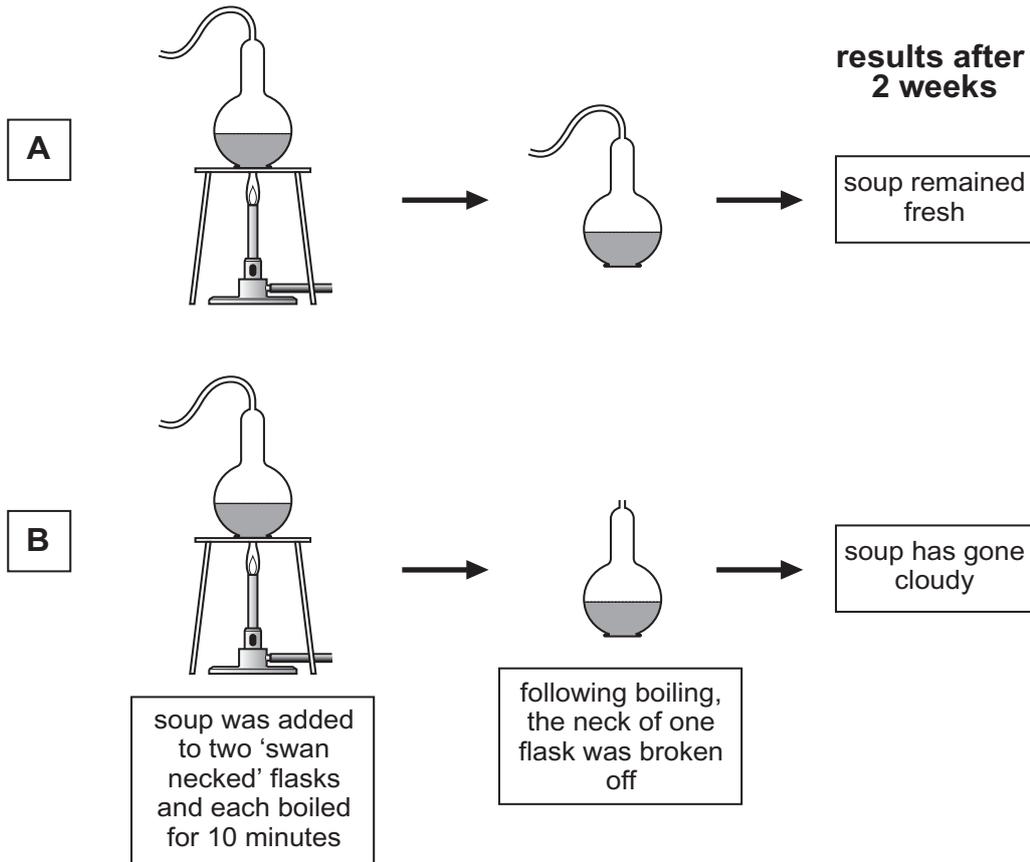
1. _____

2. _____ [2]

Examiner Only

Marks	Remark

4 The following experiment was carried out in a science class.



Adapted from: © GCSE biology for CCEA by R McIlwaine & J Napier, page 69, published by Hodder & Stoughton, 2003. ISBN 9780340858257. Reproduced by permission of Hodder Education

(a) Suggest **one** reason why the soup was boiled for 10 minutes at the start of the experiment.

_____ [1]

(b) Explain fully the result for the soup in diagram A.

 _____ [2]

(c) Suggest two things that must be done to ensure that the results of this experiment are valid (fair test).

1. _____
 2. _____ [2]

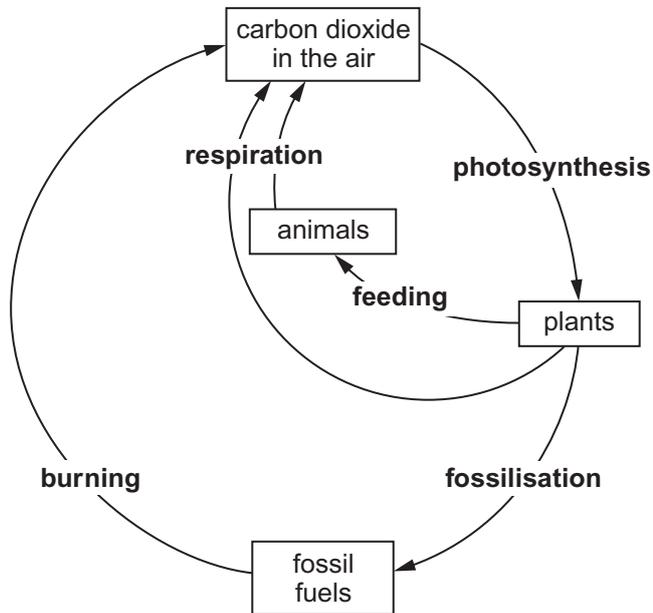
(d) Name the scientist who carried out a similar experiment using 'swan neck' flasks.

_____ [1]

Examiner Only	
Marks	Remark

5 The following diagram shows part of the carbon cycle.

The processes are shown in **bold**.



(a) From the diagram, state **one** process that will not change carbon dioxide levels in the air.

_____ [1]

(b) Use the diagram and your knowledge to state **two** reasons why the level of carbon dioxide in the air is increasing.

_____ [2]

(c) Complete the following sentences.

Increasing levels of carbon dioxide cause _____ .

This, in turn, is causing problems such as decreasing ice fields and

changing _____ . [2]

Examiner Only	
Marks	Remark

6 Fig. A shows newly emerged seedlings surrounding their parent tree.

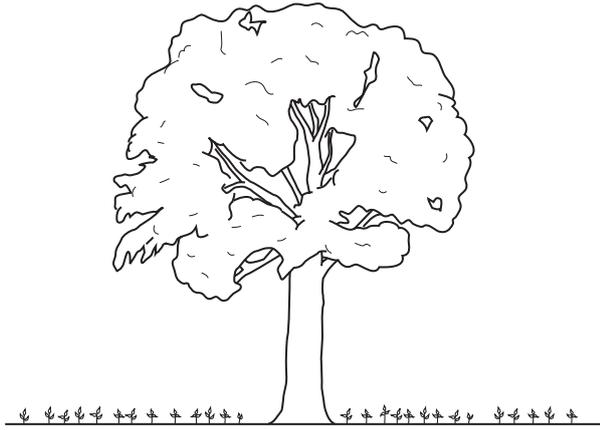


Fig. A

Fig. B shows the seedlings a year later under the same tree.

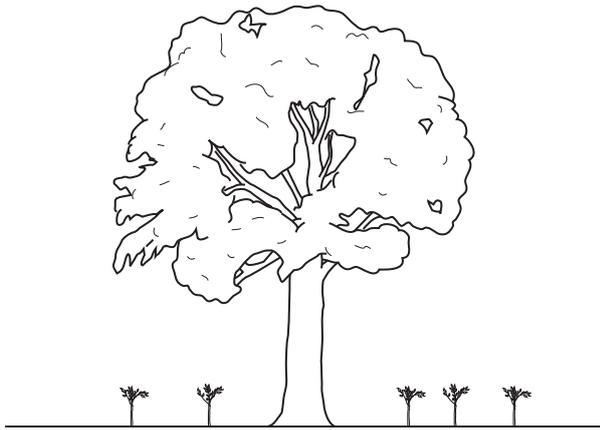


Fig. B

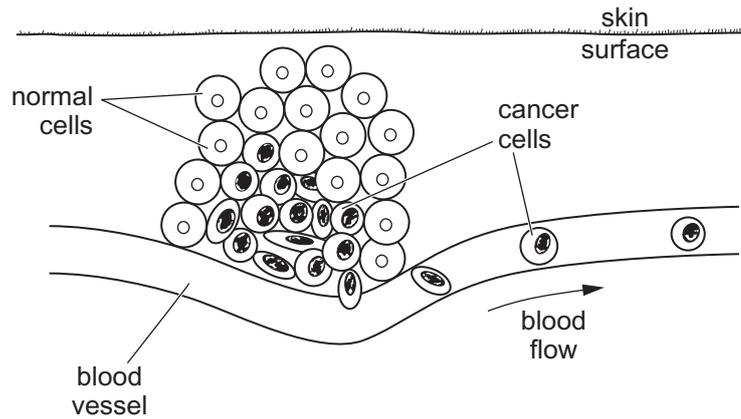
Describe and explain the differences in the number and distribution of seedlings between Figs. A and B.

[4]

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Marks	Remark

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(Questions continue overleaf)

7 (a) The following diagram represents skin cancer.



(i) Use the diagram to suggest how cancer can spread to other parts of the body.

_____ [1]

(ii) Explain how skin cancer cells develop.

 _____ [3]

(iii) Suggest one reason why the number of people from Northern Ireland getting skin cancer is increasing.

_____ [1]

(b) Name the condition caused by having one extra chromosome in **each** body cell.

_____ [1]

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Marks	Remark

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