



General Certificate of Secondary Education
2010–2011

Science: Single Award (Modular)

Human Activity and Health
Module 2

Foundation Tier

[GSC21]

THURSDAY 11 NOVEMBER 2010, AFTERNOON

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



1 (a) Complete the table below about microbes that cause disease.

Choose from:

virus gonorrhoea thrush polio

Type of microbe	Disease
bacteria	
	cold
fungi	

[3]

(b) Complete the following sentences.

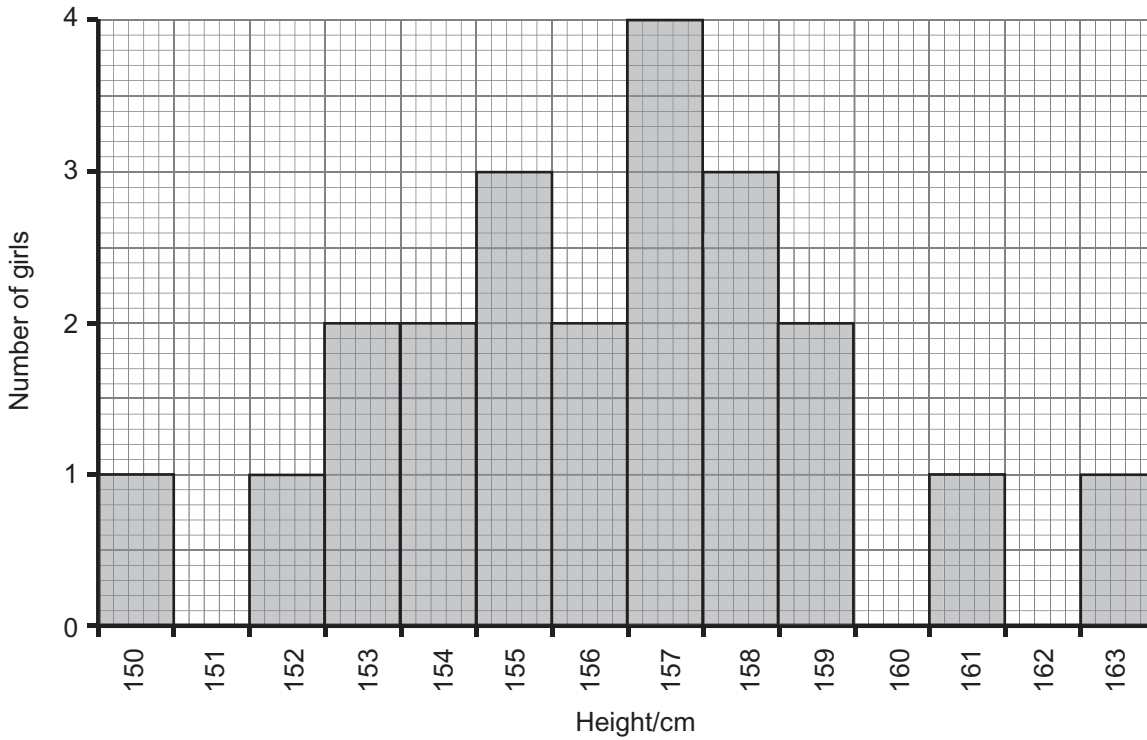
Choose from:

blood clotting : mucous membrane : skin : vaccination

The body is completely covered by _____
which is an important barrier to microbes. If this barrier gets damaged
it is repaired by _____ [2]

Examiner Only	
Marks	Remark

2 (a) The graph below shows the heights of a class of 15-year-old girls.



(i) What is the most common height in the class?

_____ cm [1]

(ii) How many girls are 161 cm in height?

_____ [1]

(iii) Height is an example of continuous variation in humans. What is meant by the term **continuous variation**?

_____ [1]

(b) Give an example of **discontinuous** variation in humans.

Circle the correct answer.

weight : finger length : tongue rolling

[1]

Examiner Only	
Marks	Remark

(c) We can change the colour of our skin by getting a tan.

(i) Give **one** reason why some people like to be tanned.

_____ [1]

(ii) Give **one** disadvantage of getting a tan.

_____ [1]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

3 (a) The population of Northern Ireland has risen to around 1.8 million, mainly because people are living longer.

(i) Give **two** reasons why people are living longer.

Choose from:

more pollution : better diets : better medical care : more immigration

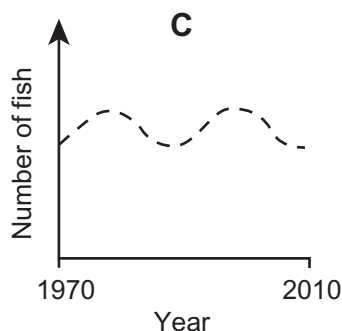
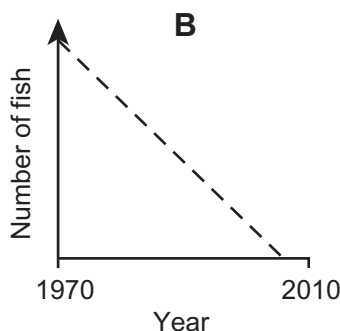
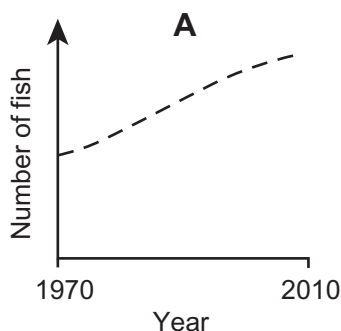
1. _____ [1]

2. _____ [1]

(ii) Suggest **one** disadvantage of an increase in population.

_____ [1]

(b) The following graphs show how the numbers of three types of fish (A, B and C) have changed in the last 40 years.



(i) Which type of fish (**A, B or C**):

- have sustainable numbers?

_____ and _____ [1]

- may be extinct?

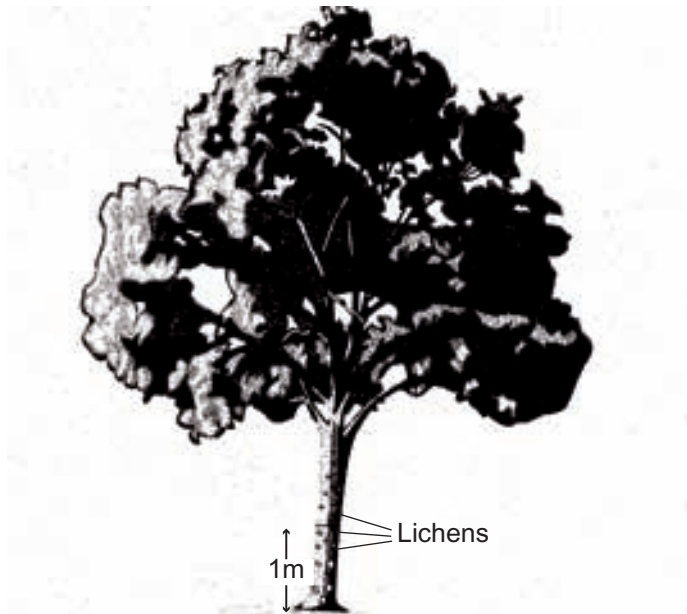
_____ [1]

(ii) Give **one** way that overfishing has been reduced and explain how it helps sustain fish stocks for the future.

 _____ [2]

- 4 (a) A class of students investigated the number of lichens growing on a tree trunk in a wood.

They only counted up to 1m as shown below.



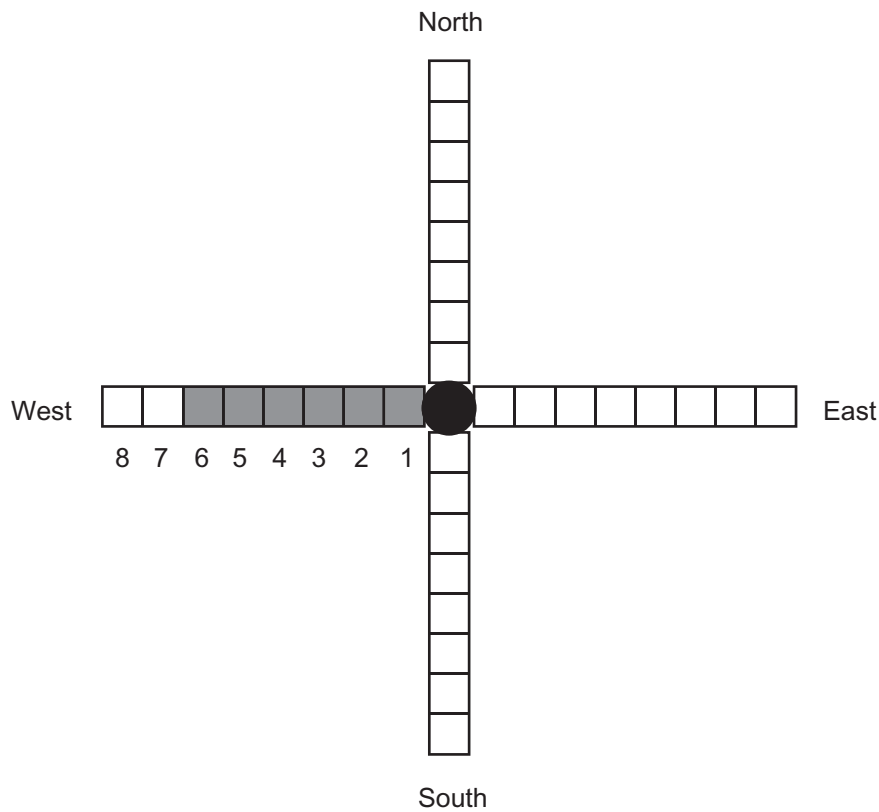
They recorded which side of the tree the lichen was found. The results are shown below.

Side of tree	Number of lichens
North	7
East	2
South	1
West	6

Examiner Only

Marks Remark

- (i) Complete the chart **below** to show the number of lichens on each side.



[2]

- (ii) Complete the following sentence giving a trend shown by the results.

The results show that the lichen grows best on the

_____ side of the tree.

[1]

- (iii) Suggest two **abiotic** (physical) factors that could have affected the distribution of the lichens on the trees.

1. _____ [1]

2. _____ [1]

- (iv) Use the information given to suggest **two** ways in which the reliability of the survey could be improved.

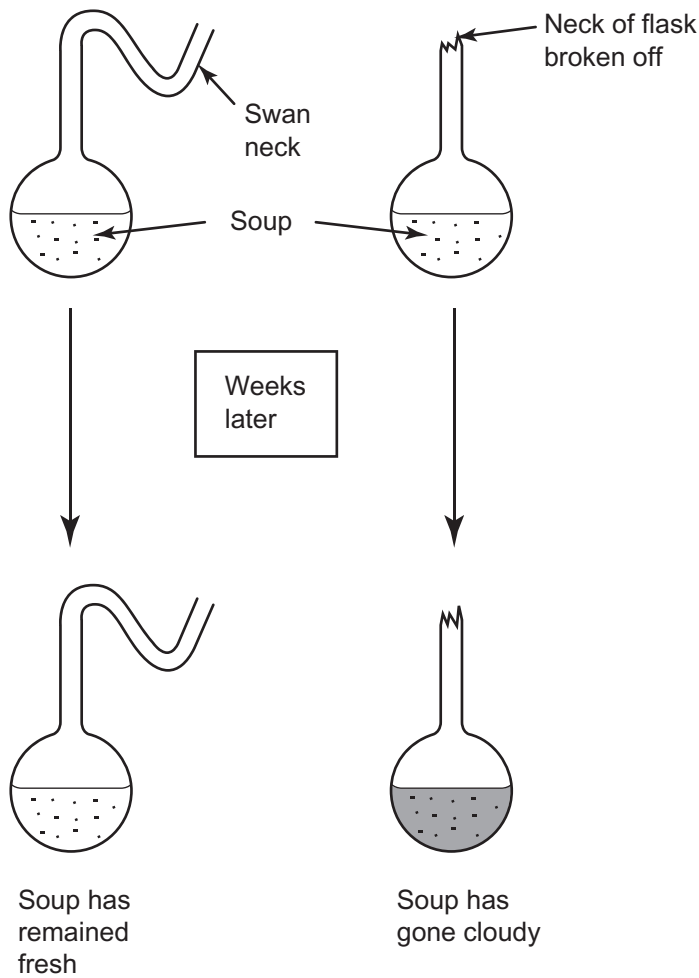
 _____ [2]

- (b) Suggest what would happen to the number of lichens in the woodland if an industrial estate was built nearby.

_____ [1]

Examiner Only	
Marks	Remark

5 The following diagram shows the apparatus Louis Pasteur used to show that contamination of food was caused by microbes from the air.



(a) Describe the results of Pasteur's experiment and explain how it showed that food contamination was caused by microbes from the air.

_____ [3]

(b) State **two** things that Pasteur must have done to ensure that he got valid results (a fair test).

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

6 (a) MMR is a combined vaccination that protects against mumps, measles and rubella. In 1998 it was reported that there could be a link between taking the MMR vaccination and developing autism.

(i) Suggest how this reported link affected the number of children being vaccinated with MMR in 1998.

_____ [1]

(ii) Suggest how this affected the number of children catching measles in the years following 1998.

_____ [1]

(iii) The number of children being vaccinated now for MMR has returned to pre-1998 levels. Suggest why this has happened.

_____ [1]

(b) Sasha had a throat infection and was feeling very unwell. Her doctor was sure it was caused by some type of bacteria and prescribed an antibiotic.

(i) Give **two** reasons why she was prescribed an antibiotic and not a vaccination.

_____ [2]

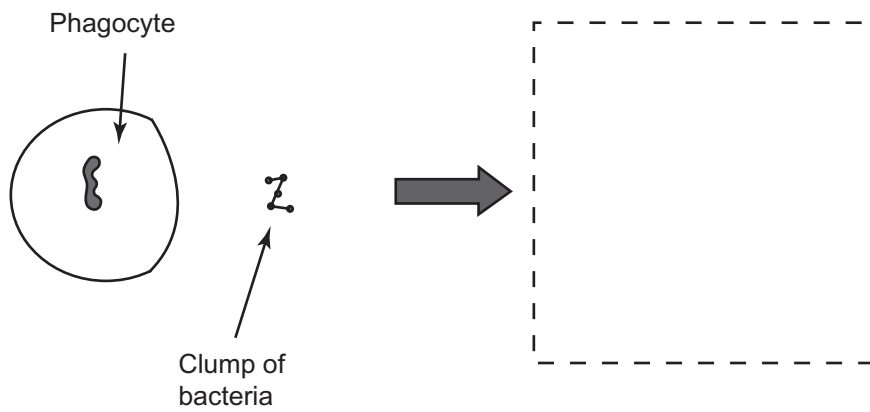
(ii) Suggest why it is important that antibiotics are not overused.

_____ [1]

Examiner Only

Marks Remark

(c) The diagram shows a phagocyte (type of white blood cell) and a clump of bacteria.



(i) Complete the diagram above to show what happens next. [1]

(ii) Name the process shown.

_____ [1]

Examiner Only	
Marks	Remark

7 Willow is a fast growing biofuel that can be harvested after as little as three years growth.

(a) Explain fully why the use of willow as a biofuel is an example of **sustainable** development.

_____ [2]

(b) Some scientists think that growing willow and using it as a biofuel doesn't contribute to climate change.

Explain fully why they make this claim.

_____ [3]

(c) Suggest one way the Government could encourage farmers to grow willow.

_____ [1]

THIS IS THE END OF THE QUESTION PAPER

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