Centre Number	Candidate Number

Candidate Name _____

International General Certificate of Secondary Education
CAMBRIDGE INTERNATIONAL EXAMINATIONS

BIOLOGY 0610/2

PAPER 2

MAY/JUNE SESSION 2002
1 hour

Candidates answer on the question paper.
No additional materials are required.

TIME 1 hour

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces at the top of this page.
Answer **all** questions.
Write your answers in the spaces provided on the question paper.

INFORMATION FOR CANDIDATES

The intended number of marks is given in brackets [ ] at the end of each question or part question.

FOR EXAMINER'S USE	
1	
2	
3	
4	
5	
6	
7	
8	
9	
TOTAL	

This question paper consists of 12 printed pages.

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate
[Turn over

1 List an **external** feature of each of the following types of organism that would identify the group to which it belongs.

type of organism	identifying feature
arachnid	
bird	
insect	
dicotyledonous plant	

[Total : 4]

2 **(a)** Describe in scientific terms the circulation of water in the environment.

.....

.....

.....

.....

.....

..... [4]

(b) **(i)** Suggest how deforestation can affect the **water cycle.**

.....

.....

..... [2]

(ii) Describe **two** other effects of deforestation on the environment.

.....

.....

.....

..... [2]

[Total : 8]

3 The graph, Fig. 3.1, shows changes in a population of small herbivores in a new habitat.

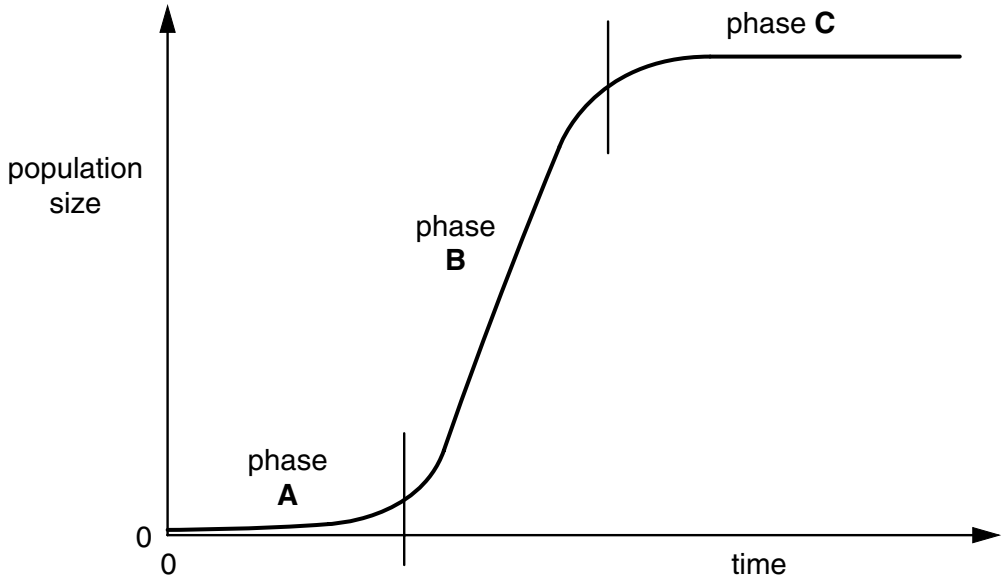

Fig. 3.1

(a) **(i)** What name is used to describe this type of curve?

..... [1]

(ii) Complete Table 3.1 to link the named phases with those shown on the graph.

Table 3.1

name of phase	phase on graph
log	
lag	
stationary	

[3]

(b) A breeding group of these herbivores was released into a second new habitat. This habitat had a much smaller food supply.

Suggest the effect this would have on the population graph for this second group.

.....

.....

..... [2]

[Total : 6]

[Turn over

4 Fig. 4.1 shows a fetus developing in a uterus.

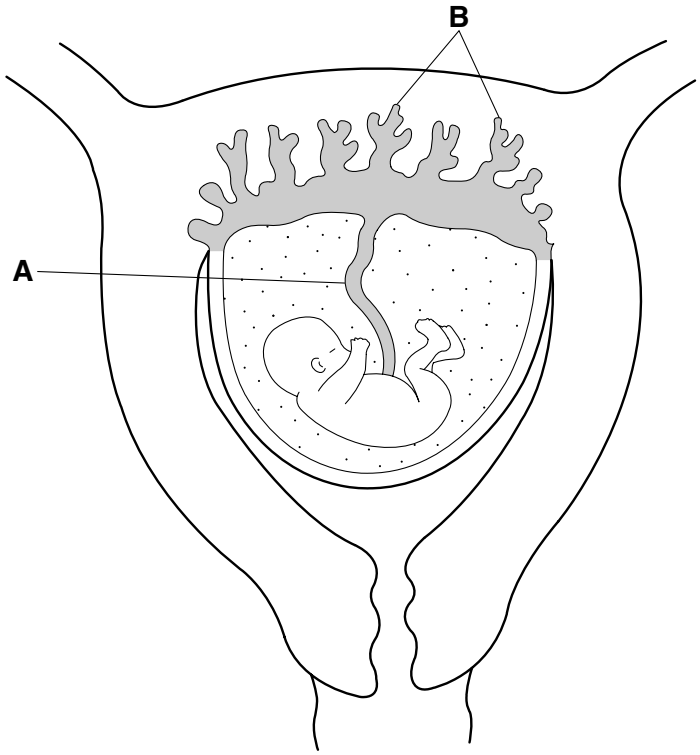

Fig. 4.1

(a) (i) Name the part labelled **A**.

A ..... [1]

(ii) What is unusual about the blood in the artery in **A** compared with the blood in most of the arteries in the mother?

.....

..... [1]

(iii) The structures labelled **B** are called *placental villi*.

Suggest **one** feature these might have that helps them to carry out their function efficiently.

.....

..... [1]

(b) The blood of the mother and the fetus do **not** normally mix.

State two reasons why this is important.

1. .....

.....

2. .....

..... [2]

(c) The placenta is often described as the *'lung and kidney'* of the fetus.

Explain why this is a good description.

.....

.....

.....

..... [3]

[Total : 8]

5 **(a)** Fig. 5.1 shows a section through a seed of a dicotyledon.

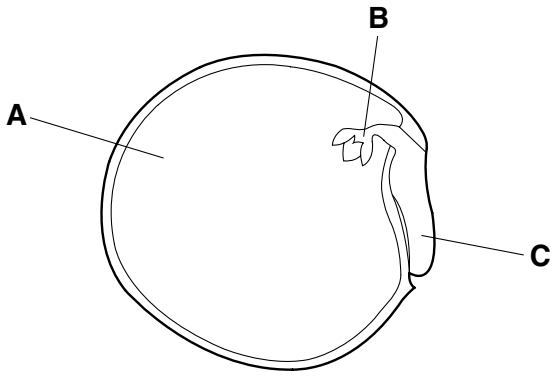

Fig. 5.1

(i) What is the role of part **A**?

..... [1]

(ii) What do parts **B** and **C** of the seed develop into after germination?

B .....

C ..... [2]

(b) The graph, Fig. 5.2, shows changes in mass of sets of pea seeds as they germinate and grow into seedlings. After germination, set **P** was grown in the dark and set **Q** in the light.

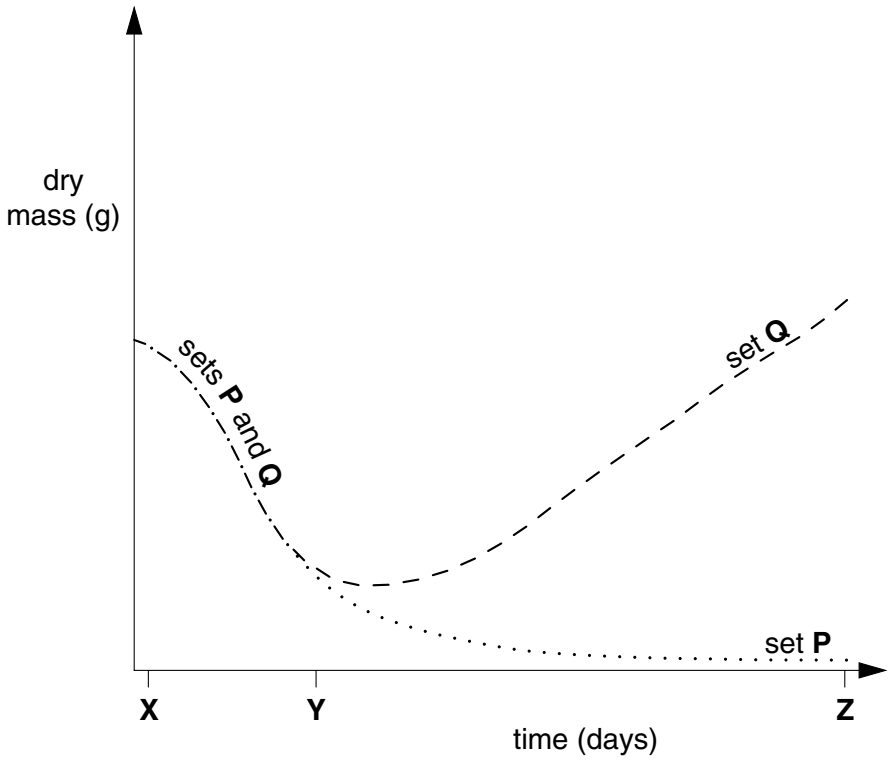

Fig. 5.2

(i) Why is mass measured as dry mass?

.....

..... [1]

(ii) Explain the changes in dry mass between days **X** and **Y** in both sets of seedlings.

.....

.....

.....

.....

..... [4]

(iii) Explain why there is a difference in the dry mass of sets **P** and **Q** between days **Y** and **Z**.

.....

.....

.....

.....

.....

..... [4]

[Total : 12]

6 In cross 1, mice with black fur were bred with mice with white fur. All of their 16 offspring had black fur.

In cross 2, the offspring with black fur from cross 1 were interbred and produced 44 offspring of which 11 had white fur and the rest had black fur.

Using **B** and **b** to represent the two alleles controlling fur colour, complete the diagram, Fig. 6.1, to show the inheritance of fur colour in these two crosses.

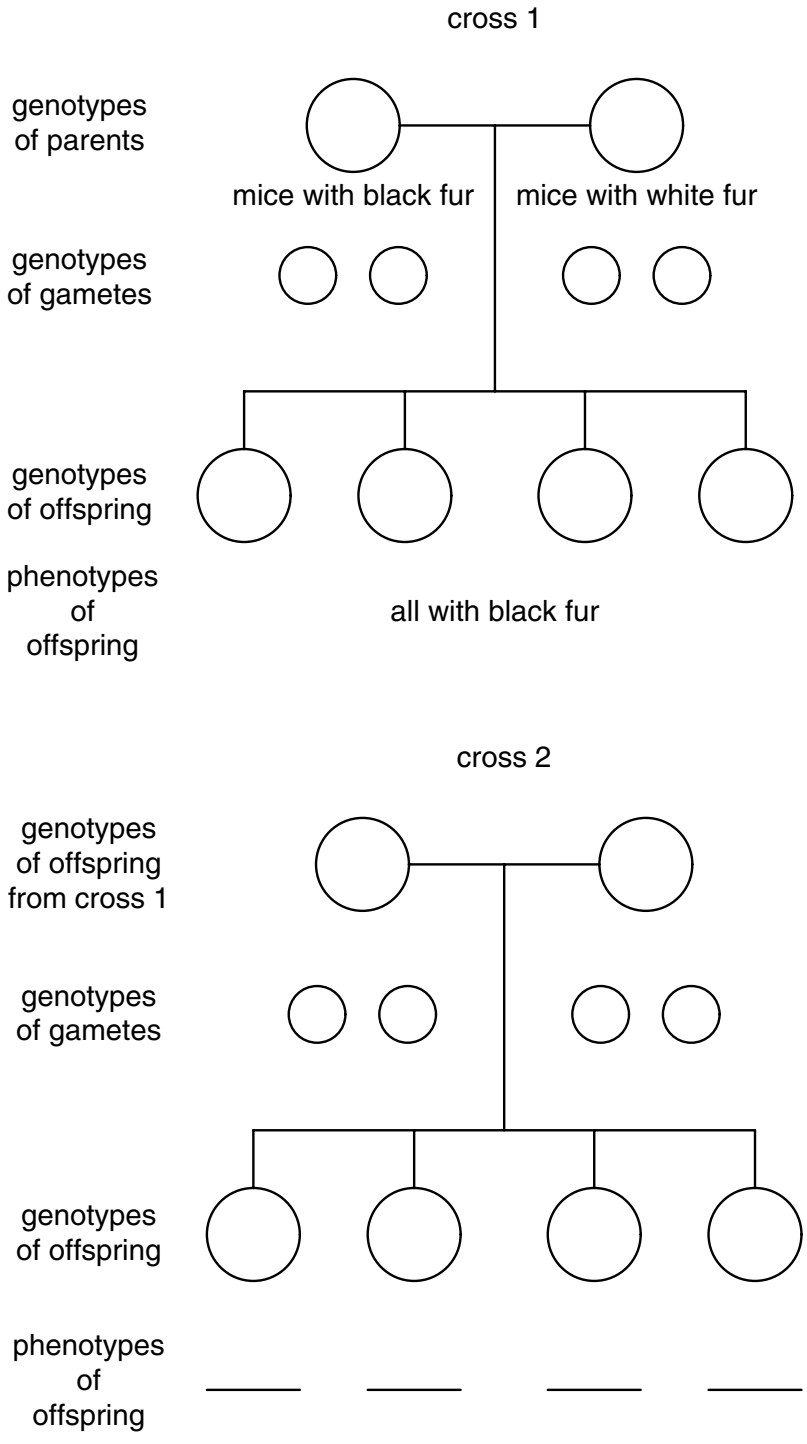

Fig. 6.1

[Total : 6]

7 **(a)** Bile and lipase are concerned with the digestion of fats.

(i) Bile is made in the liver.

Where is lipase produced?

..... [1]

(ii) Describe the role of these two substances in the process of fat digestion.

.....

.....

.....

.....

.....

..... [4]

(b) The products of digestion of carbohydrates, fat and proteins enter the blood.

(i) Name the products of digestion that only enter the blood directly from the small intestine.

.....

..... [2]

(ii) Explain the roles of the liver in dealing with the products of digestion of carbohydrates and proteins.

carbohydrates .....

.....

.....

proteins .....

.....

..... [4]

[Total : 11]

8 Fig. 8.1 shows a section through the heart.

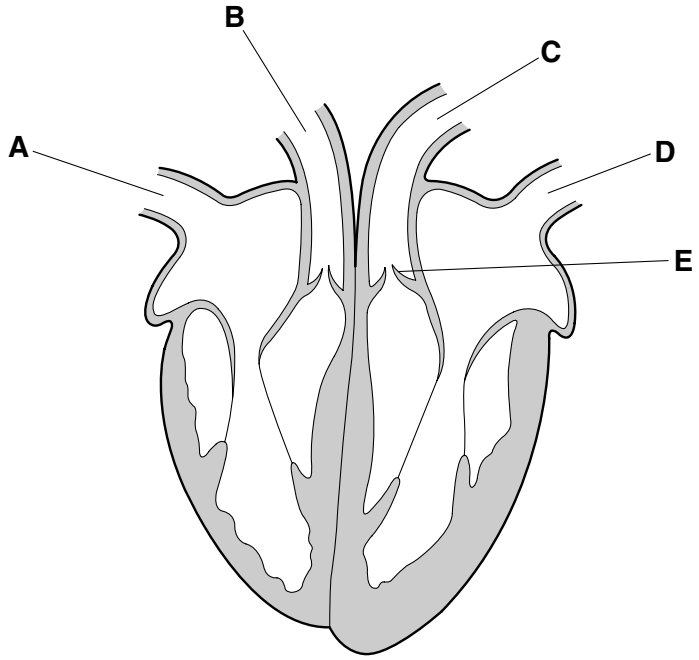

Fig. 8.1

(a) (i) Name the two blood vessels **A** and **B**.

A .....

B ..... [2]

(ii) Which of the blood vessels, **A**, **B**, **C** or **D**, carry oxygenated blood?

..... [1]

(iii) Name valve **E** and state its function.

name .....

function .....

..... [2]

(b) Some poor diets can increase the risk of a heart attack.

(i) Suggest two ways in which a poor diet could be changed to reduce the risk of a heart attack.

1. .....

.....

2. .....

..... [2]

(ii) Suggest two other factors, apart from diet, that could increase the risk of a heart attack.

1. .....

.....

2. .....

..... [2]

[Total : 9]

9 **(a)** Alcohol is described as a depressant and an addictive drug that can damage the body.

(i) State what is meant by each of the following terms.

depressant .....

.....

addictive .....

..... [2]

(ii) State two long term effects that alcohol might have on the body.

1. .....

.....

2. .....

..... [2]

(b) Suggest how alcohol might affect the performance of a car driver.

.....

.....

.....

..... [2]

[Total : 6]