

Candidate Name \_\_\_\_\_

Centre Number

Candidate  
Number

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**International General Certificate of Secondary Education**  
**UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE**  
**BIOLOGY**  
**PAPER 2**  
**OCTOBER/NOVEMBER SESSION 2001**

**0610/2**

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.

<b>FOR EXAMINER'S USE</b>	
<b>1</b>	
<b>2</b>	
<b>3</b>	
<b>4</b>	
<b>5</b>	
<b>6</b>	
<b>7</b>	
<b>8</b>	
<b>9</b>	
<b>TOTAL</b>	

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**This question paper consists of 11 printed pages and 1 blank page.**

- 1 Complete the following sentences about the characteristics of living organisms using only words from the list below.

**excretion growth movement nutrition respiration sensitivity**

A living organism can be compared to a machine such as a car. The supply of petrol for the car is similar to ..... and the release of energy when the petrol is burnt resembles ..... in a living organism.

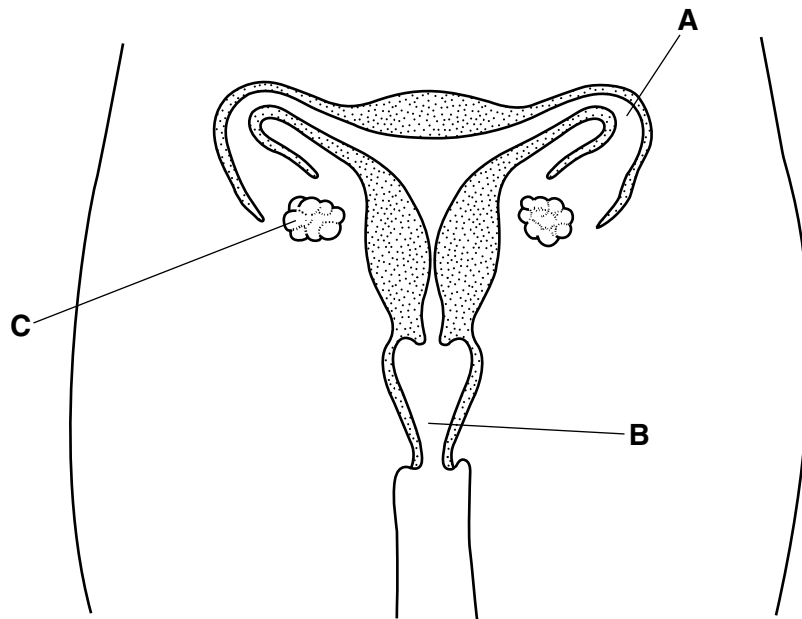
This can bring about the ..... of the wheels.

..... in living organisms is similar to the release of exhaust fumes by the car.

[4]

[Total : 4]

- 2 Fig. 2.1 shows the female reproductive system.



**Fig. 2.1**

- (a) (i) Name the parts labelled **A** and **B**.

**A** .....

**B** .....[2]

(ii) State two functions of part C.

- 1. ....  
.....
- 2. ....  
.....[2]

(b) The uterus has a lining that undergoes changes during the menstrual cycle.

(i) State the average length of the menstrual cycle.

.....[1]

(ii) Describe the changes to the lining of the uterus, during the menstrual cycle, caused by changes in the concentration of each of the following hormones.

oestrogen .....  
.....  
.....

progesterone .....  
.....  
.....  
.....[5]

(c) State two changes, apart from changes to the reproductive organs, that occur in the body of a female during puberty.

- 1. ....  
.....
- 2. ....  
.....[2]

[Total : 12]

- 3 Fig. 3.1 shows a section through a bean seed.

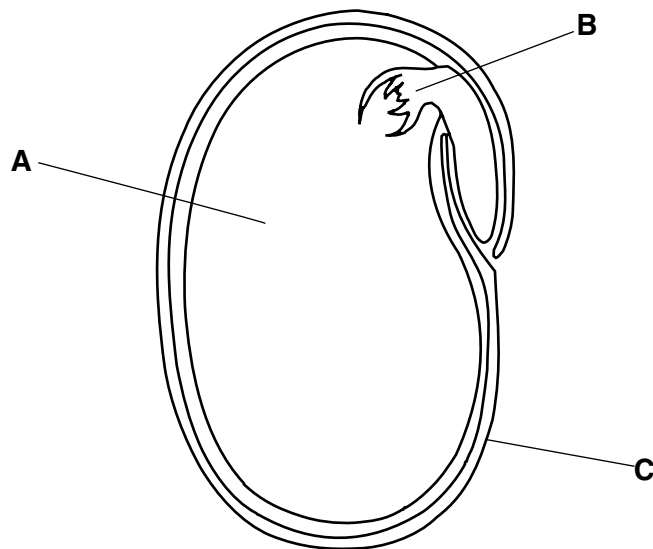


Fig. 3.1

- (a) (i) Name the parts labelled **A**, **B** and **C**.

**A** .....

**B** .....

**C** ..... [3]

- (ii) On Fig. 3.1, label with an **X** the part that contains the seed's food reserves. [1]

- (b) Seeds and fruits are dispersed away from the parent plant.

- (i) In the space below, sketch a seed or fruit that is adapted for dispersal by wind.

Label with a **Y** the special feature of the seed or fruit that helps in wind dispersal.

[1]

(ii) Suggest how this feature helps in wind dispersal.

.....  
.....  
.....[2]

(iii) Suggest another way in which wind assists in the reproduction of plants.

.....  
.....[1]

[Total : 8]

4 Fig. 4.1 shows a section through the heart.

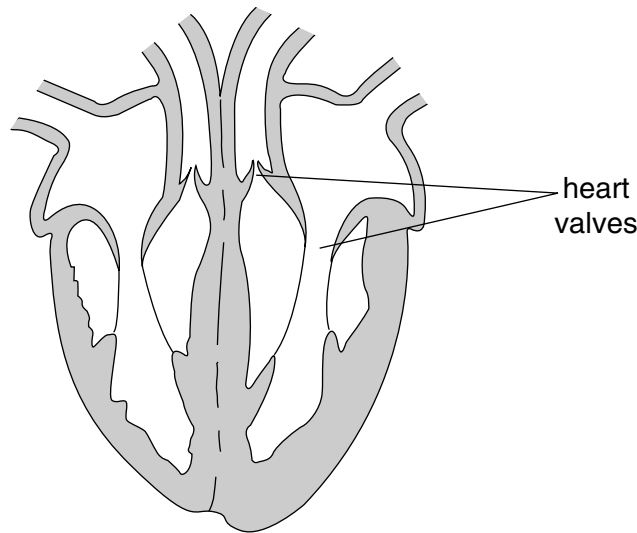


Fig. 4.1

(a) (i) On Fig. 4.1, draw a series of arrows to show the flow of blood through the heart. [2]

(ii) Label, with an **X**, **two** blood vessels that carry deoxygenated blood. [1]

(b) (i) Outline the sequence of events that prevents the backflow of blood in the heart.

.....  
.....  
.....  
.....  
.....[4]

(ii) Where are valves found in the circulatory system, apart from in the heart?

.....[1]

[Total : 8]

5 Fig. 5.1 shows a section through the eye.

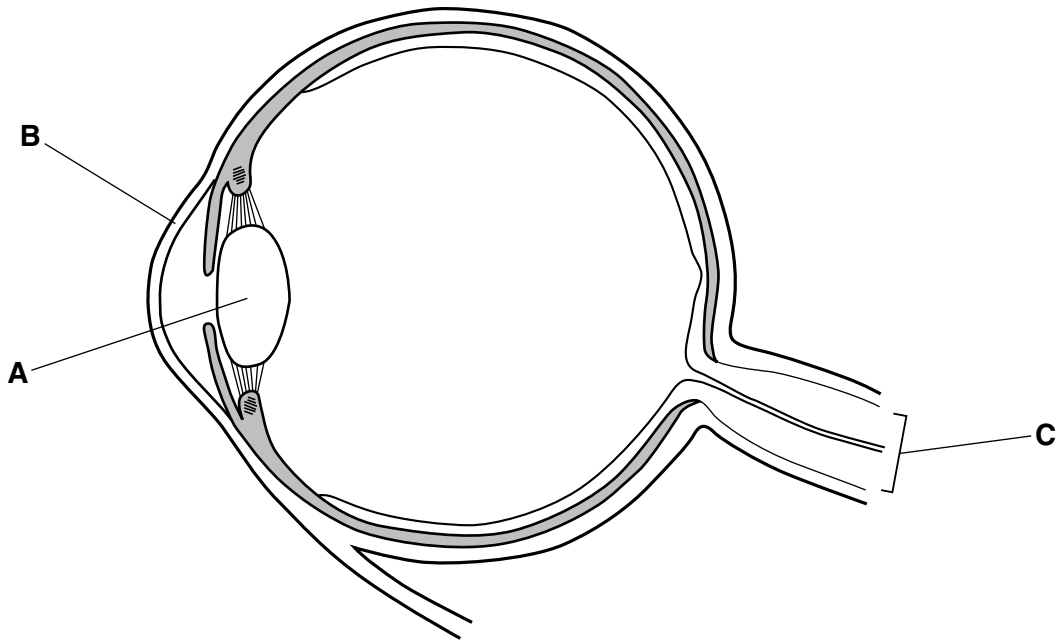


Fig. 5.1

(a) (i) Name the parts labelled A, B and C.

A .....

B .....

C .....[3]

(ii) Name the part of the eye that contains the light sensitive cells.

.....[1]

(iii) Name the part of the eye that brings about changes in the shape of the lens.

.....[1]

(b) Explain how the eye responds when a person in bright sunlight walks into the shade.

.....

.....

.....

.....

.....[4]

[Total : 9]

6 Fig. 6.1 shows a food chain.

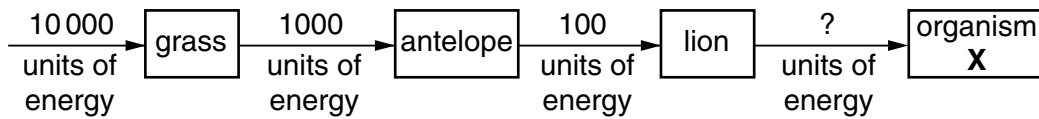


Fig. 6.1

(a) (i) State the form of energy that is absorbed by the grass.

.....[1]

(ii) State the form in which energy is passed along the food chain.

.....[1]

(iii) Large amounts of energy are lost from the food chain.

In what form is most of this energy lost?

.....[1]

(b) (i) State two reasons why only a small part of the energy passing into the antelope is passed on to the lion.

1. ....

.....

2. ....

.....[2]

(ii) The lion is **not** the prey of another carnivore.

Suggest what type of organism **X** could be.

.....[1]

(iii) Predict the number of units of energy that would pass from the lion to **X**.

.....[1]

[Total : 7]

7 Fig. 7.1 shows a diagram of the carbon cycle.

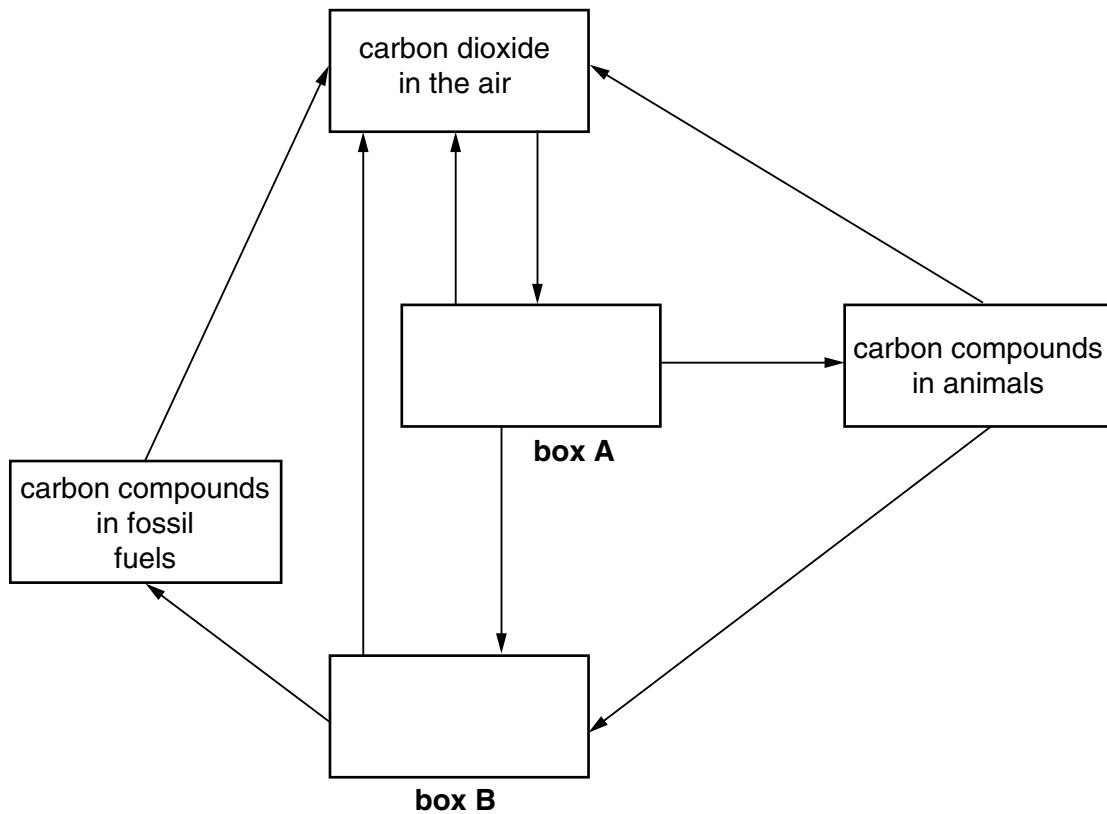


Fig. 7.1

- (a) Complete the cycle by filling in boxes **A** and **B**. [2]
- (b) On Fig. 7.1, label with the letter indicated an arrow that represents the process of
- (i) combustion - **C**; [1]
  - (ii) decomposition - **D**; [1]
  - (iii) photosynthesis - **P**; [1]
  - (iv) respiration - **R**. [1]

[Total : 6]



8 (a) Complete the equation for photosynthesis, either in words **or** symbols.



(b) Where in the cells of a leaf does photosynthesis occur?

.....[1]

(c) (i) Name the structures through which oxygen is lost from a leaf.

.....[1]

(ii) Explain why excess sugar is often stored as starch and not as a simple sugar.

.....  
.....  
.....[2]

(iii) The sugar can be changed into cellulose and amino acids or protein.

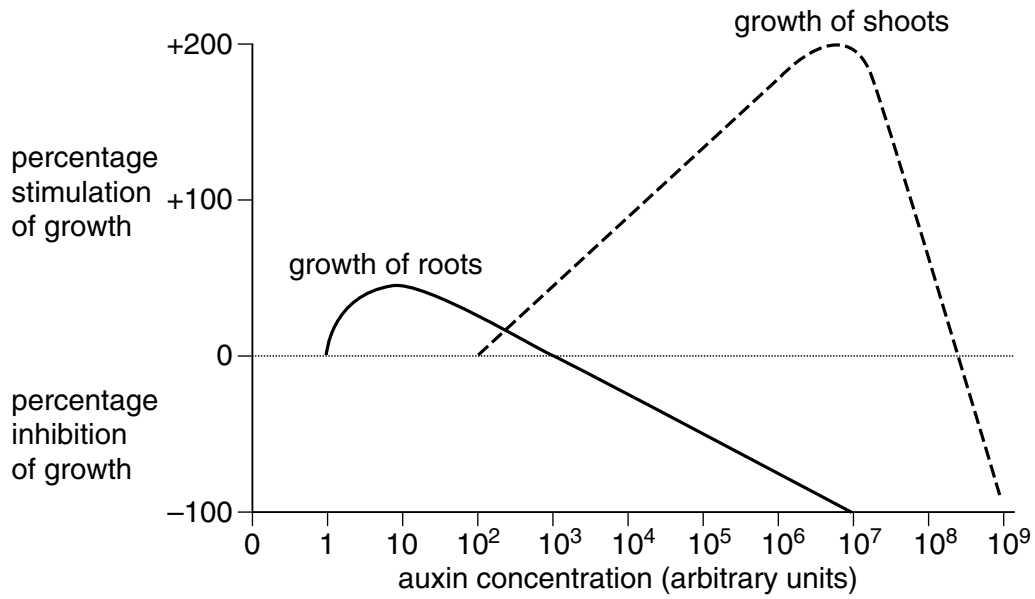
State a use for each of these substances in a plant.

*cellulose* .....  
.....

*amino acids or protein* .....  
.....[2]

[Total : 8]

- 9 The graph shows the effect of different concentrations of auxin on the growth of roots and shoots.



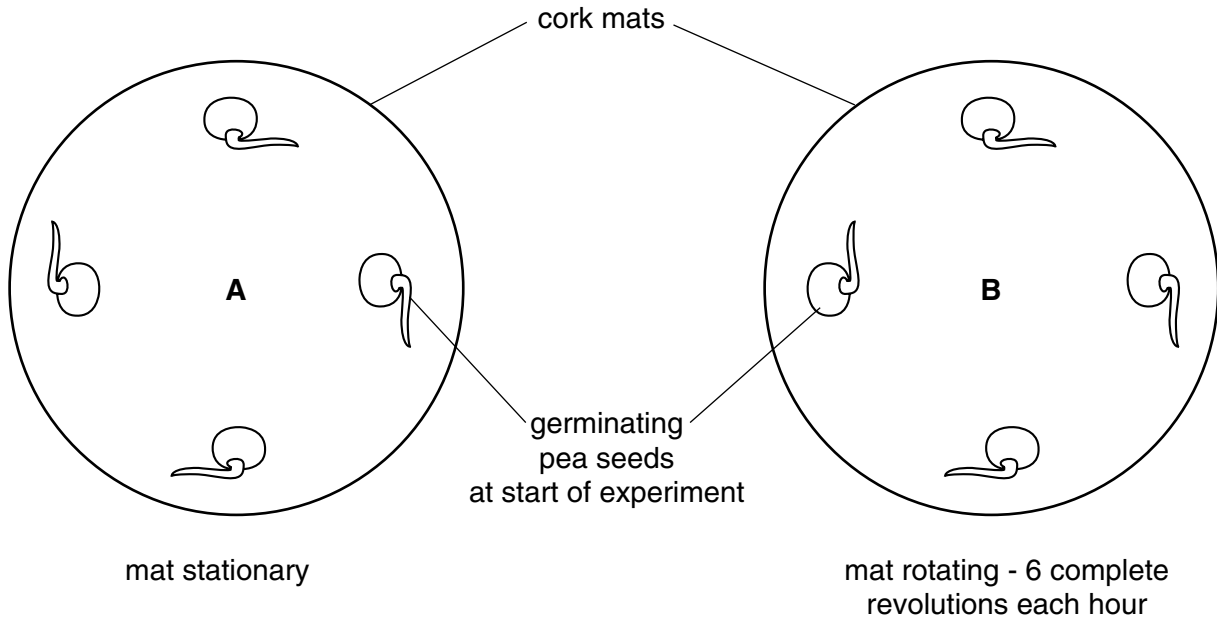
- (a) (i) Between which concentrations of auxin will the growth of both roots and shoots be stimulated?

.....[1]

- (ii) Describe what the graph shows about the effect of auxin on the growth of roots.

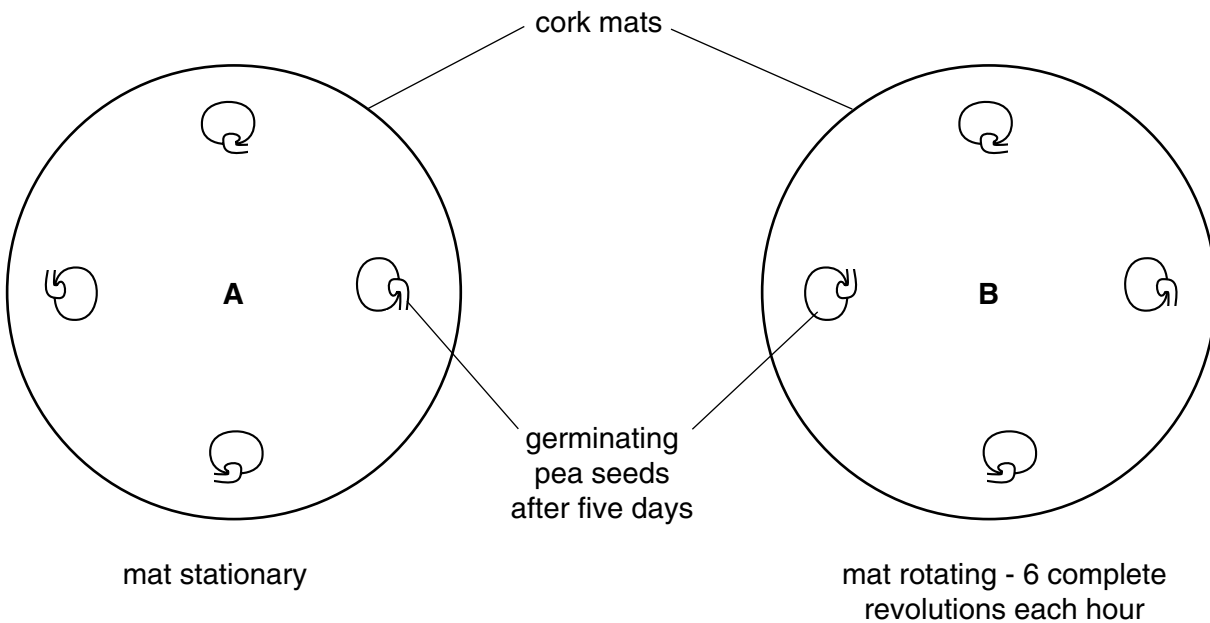
.....  
.....  
.....  
.....  
.....  
.....[4]

(b) Fig. 9.1 shows two circular cork mats, **A** and **B**, on which similar sets of germinating pea seeds are pinned. The mats are attached to a motor that can turn them slowly. The seeds are kept moist and in the dark.



**Fig. 9.1**

The seeds were left to grow for five days. Fig. 9.2 shows the same cork mats.



**Fig. 9.2**

On Fig. 9.2, complete the drawings of the pea seeds to show the appearance of each of the roots after five days. [3]

[Total : 8]

