Centre Number	Candidate Number	Name

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

BIOLOGY **0610/05**

Paper 5 Practical Test

October/November 2006

1 hour

Candidates answer on the Question Paper.
Additional Materials: As listed in Instructions to Supervisors.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided at the top of this page.
Write in dark blue or black pen.
You may use a pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **both** questions.
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
Total	

This document consists of **7** printed pages and **1** blank page.

1 In this question you are going to investigate transport in plants.

You are provided with a length of stem of a flowering plant, **W1**, that has been standing in a coloured solution.

Carefully cut across the stem and examine the freshly cut surfaces with a hand lens.

(a) (i) Make a large, labelled drawing of one of the cut surfaces of the stem.

On your drawing, indicate clearly the position of the coloured dye.

[5]

(ii) Measure the diameter of your drawing.

diameter of drawing .....

Measure the diameter of the stem.

diameter of stem .....

Calculate the magnification of your drawing.
Show your working.

magnification = ... [3]

(b) Fig. 1.1 is a diagram of a section across the stem of a different flowering plant, **W2**.

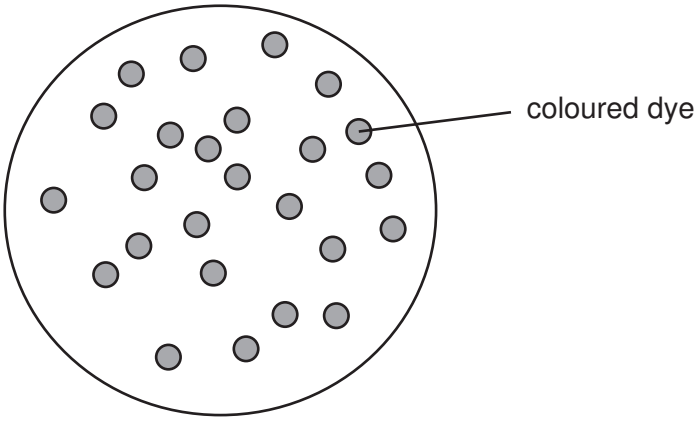


Fig. 1.1

Describe the differences in the distribution of the coloured dye in the two plant stems.

.....

.....

.....

..... [2]

(c) Suggest how you could carry out an experiment to compare the effects of **one named external** factor on the rate at which water moves up through a plant.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

(d) You are provided with a solution, **W3**, that is translocated in the stem of plant **W1**.

(i) State how you would test the solution for the presence of reducing sugars.

.....

.....

..... [2]

(ii) State two safety precautions that could be taken when carrying out this test.

1 .....

2 ..... [2]

(iii) Test solution **W3** for the presence of reducing sugars.

Record your observations and conclusion.

observations .....

conclusion ..... [2]

(iv) Sucrose is not a reducing sugar. Boiling sucrose solution with acid converts the sucrose to reducing sugars. **W4** is a solution of **W3** that has been boiled with acid.

Test solution **W4** for the presence of reducing sugars.

Record your observations and conclusion.

observations .....

conclusion ..... [2]

(v) Using the information in **(iii)** and **(iv)** and your conclusions, suggest what type of sugar is transported through the stem.

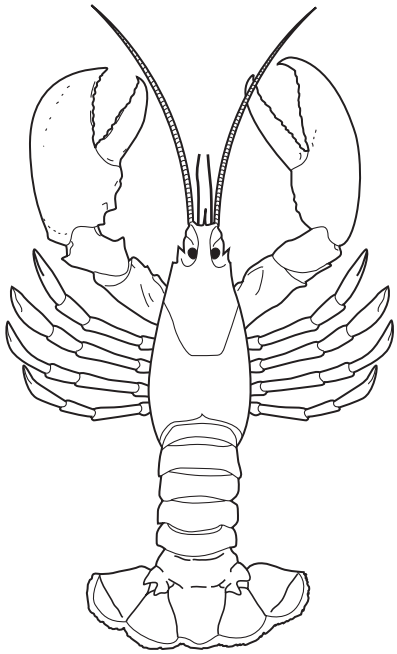
..... [1]

[Total: 24]

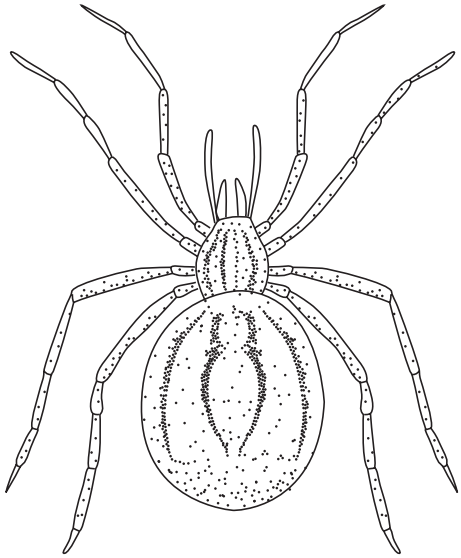
BLANK PAGE

Question 2 starts on Page 6

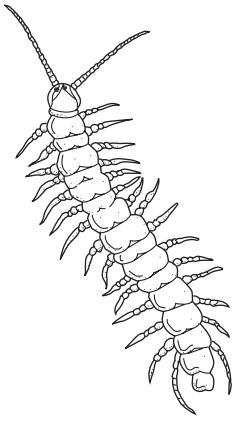
2 You are supplied with specimen **W5.**
Fig. 2.1 shows four other animals belonging to the same main group of invertebrates.



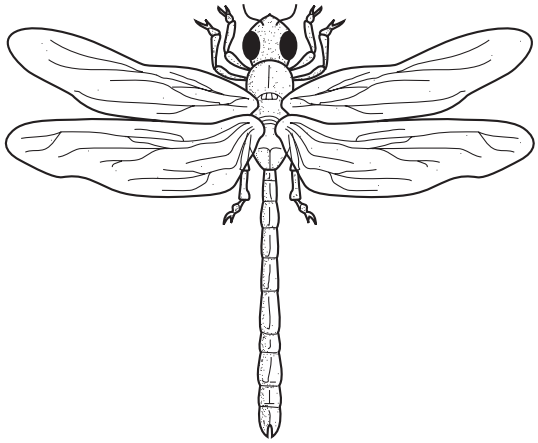
W6



W7



W8



W9

Fig. 2.1

(a) (i) Name the main group (phylum) of invertebrates to which **all** these animals belong.

..... [1]

(ii) State **one** feature of **W5** that is characteristic of this main group.

..... [1]

(b) (i) Name the sub-group (class) to which **W5** belongs.

..... [1]

(ii) State three features, visible on **W5**, that are characteristic of this group.

1 .....

2 .....

3 ..... [3]

(c) Use the following key to identify each of the animals, **W5** – **W9**.

If necessary, remove parts of **W5** to count them. Keep the specimen to use later in the question.

1	More than 4 pairs of legs	Lithobiomorpha
	4 pairs of legs or less	go to 2
2	4 pairs of legs	go to 3
	3 pairs of legs	go to 4
3	2 pairs of jointed antennae	Decapoda
	No jointed antenna	Araneae
4	1 pair of wings	Diptera
	2 pairs of wings	Odonata

W5 .....

W6 .....

W7 .....

W8 .....

W9 ..... [5]

[Turn over

(d) When dilute hydrochloric acid is added to calcium carbonate, carbon dioxide is produced.

W10 is part of the protective covering of a mollusc.

Add a few drops of dilute hydrochloric acid to **each** of the specimens **W5** and **W10**.

(i) observations

W5 .....

.....

W10 .....

..... [2]

(ii) Use your observations to explain the conclusions that you can make about the chemical composition of the protective coverings of these animals.

conclusions

.....

.....

.....

.....

.....

..... [3]

[Total: 16]