UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

BIOLOGY **0610/05**

Paper 5 Practical Test **May/June 2007**

1 hour

Candidates answer on the Question Paper

Additional Materials: As listed on the Instructions to Supervisors.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
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.
DO **NOT** WRITE IN ANY BARCODES.

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 **8** printed pages.

1 You are provided with two foil-wrapped containers, labelled **S1** and **S2**.

Three days ago, each container was set up with five soaked mung bean seeds.

S1 has been kept in a refrigerator at 4 °C.
S2 has been kept in a warm place at 30 °C.

Remove the foil from each container and examine the contents.

(a) (i) In the space below, construct a table in which the overall length of each specimen in the two containers can be recorded.

[2]

(ii) Measure in mm the overall length of each specimen and record these values in your table. [3]

(iii) Calculate the mean overall length of the **S1** specimens and the mean overall length of the **S2** specimens and record in Table 1.1 below.

Table 1.1

mean overall length of the **S1** specimens / mm	mean overall length of the **S2** specimens / mm

[2]

(b) (i) Describe and explain the differences in appearance of the **S1** specimens and the **S2** specimens.

.....

.....

.....

.....

.....

.....

.....

..... [5]

(ii) List three ways in which the design of such an investigation would make sure that the differences between the **S1** specimens and the **S2** specimens are the result of a difference in temperature.

1 .....

2 .....

3 ..... [3]

(c) Mung beans are legumes and contain higher quantities of protein than some other plant seeds.

Carry out a food test for protein on one **S1** specimen.
You will need to remove the seed coat [testa] and crush the specimen.
Place the **S1** sample in one test tube labelled **S1**.
Repeat this test with the one seed **S3** from the container labelled **S3**.

(i) Name the food test for protein that you performed.

name of test ..... [1]

(ii) Record your observations in the Table 1.2.

Table 1.2

	S1 sample	**S3** sample
resulting colour		

[2]

(iii) State the conclusion based on your observations.

.....

..... [1]

[Total 19]

2 Specimens **S4** and **S5** are stages in the life cycle of an animal.

Do not remove the specimens from their containers.

(a) (i) Make a large, labelled drawing of **S4** in the space below to show the external features which you can observe with the help of a hand lens.

[4]

(ii) Suggest two improvements that could be made to the method used to observe specimen **S4**.

1 .....

2 ..... [2]

(iii) Observe the external features of specimen **S5** carefully.

Complete Table 2.1 to record two visible differences between specimens **S4** and **S5**.

Table 2.1

difference	**S4**	**S5**
1		
2		

[2]

(b) Fig. 2.1 shows an adult of a similar species.

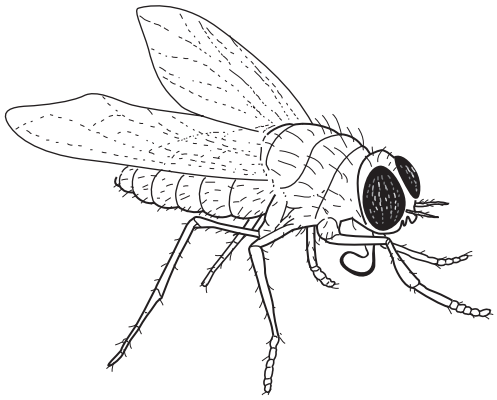


Fig. 2.1

(i) Name the group of organisms to which this animal belongs.

..... [1]

(ii) State what the organism in Fig.2.1 produces that develops into specimen **S4**.

..... [1]

(iii) List three features of the adult stage visible in Fig.2.1 which helped you to classify this animal.

1 .....

2 .....

3 ..... [3]

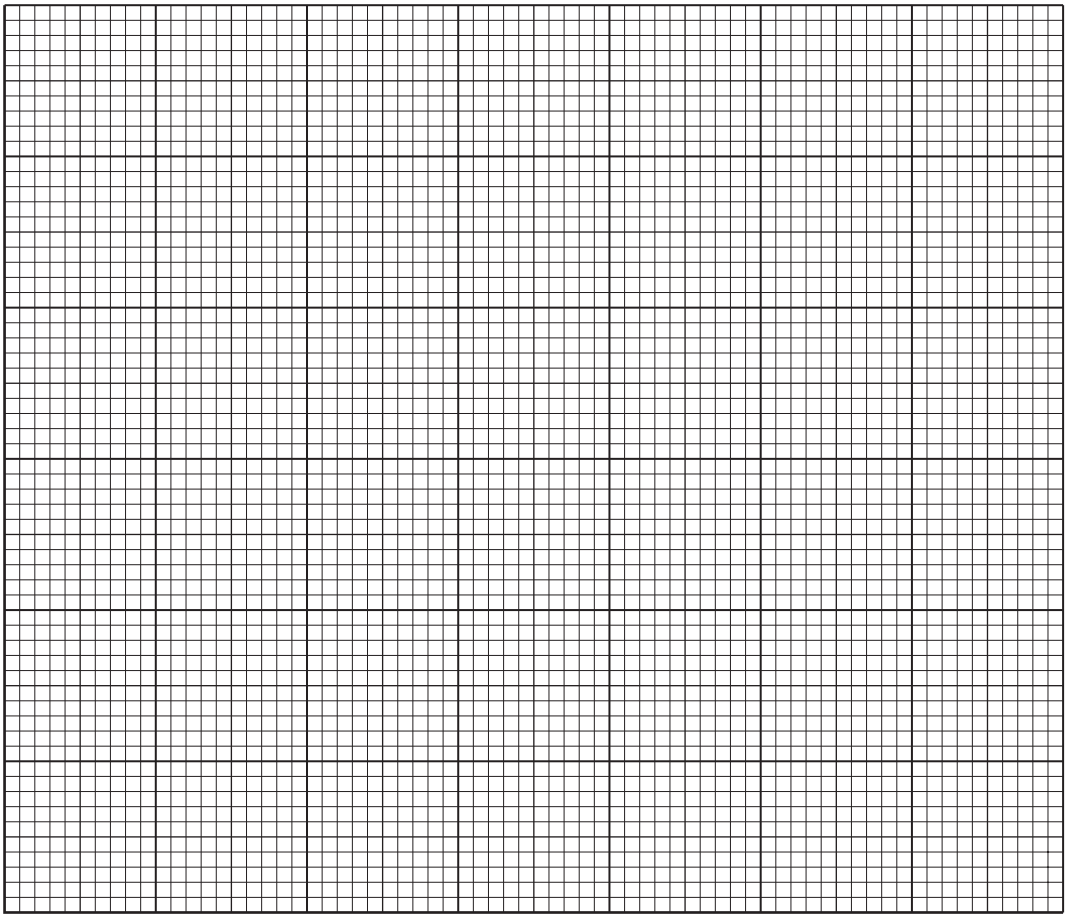
(c) Temperature affects the length of the life cycle of this animal.

The data in Table 2.2 below shows the effect of temperature on the time taken for the development between stages shown by specimens **S4**, **S5** and Fig. 2.1.

Table 2.2

temperature / °C	time taken for development between life cycle stages / days	
	from stage shown by specimen **S4** to the stage shown by specimen **S5**	from stage shown by specimen **S5** to that in Fig.2.1
10	43	23
16	27	16
21	16	12
25	10	7
32	5	4

(i) Using the data, plot a suitable graph to show the effect of temperature on the time taken for development from the stage shown by specimen **S5** to Fig. 2.1 in the life cycle of this animal.



[5]

(ii) Describe and explain the effect of temperature on the development of this animal.

.....

.....

.....

..... [3]

[Total :21]