

## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

VS VS CONTINUE CONTIN

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CANDIDATE NAME						

CENTRE NUMBER CANDIDATE **NUMBER** 

0610/05 **BIOLOGY** 

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.

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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 va your table.

(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 <b>S1</b> specimens / mm	the <b>S2</b> specimens / mm

(b) (i) Describe and explain the differences in appearance of the S1 specimens and the **S2** specimens. (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. 2 ..... 3 

(c) Mung beans are legumes and contain higher quantities of protein than some 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

	<b>S1</b> 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.

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w the external (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 <b>S4</b> .
	1
	2[2]
(iii)	Observe the external features of specimen <b>S5</b> carefully.
	Complete Table 2.1 to record two visible differences between specimens <b>S4</b> and <b>S5</b> .

Table 2.1

**S4** 

difference

1

2

**S5** 

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

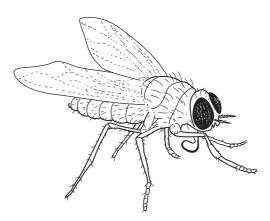


Fig. 2.1

(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 <b>S4</b> .	
		[1]
(iii)	List three features of the adult stage visible in Fig.2.1 which helped you to class this animal.	sify
	1	
	2	
	3	[3]

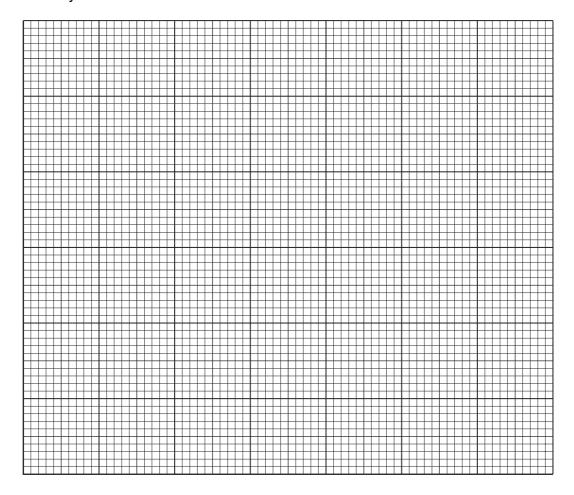
(c) Temperature affects the length of the life cycle of this animal.

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 <b>S4</b> to the stage	from stage shown by specimen <b>S5</b> to that in Fig.2.1		
	shown by specimen S5	_		
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 \$5 to Fig. 2.1 in the life cycle of this animal.



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(ii)	Describe and explain the effect of temperature on the development of this al							
		[3]						
	[Total ::	21]						

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