UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

9806194730

Biology **0610/05**

Paper 5 Practical Test **May/June 2009**

1 hour

Candidates answer on the Question Paper.

Additional Materials: As listed in the Confidential Instructions.

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 **9** printed pages and **3** blank pages.

Read the whole question before starting work.

For Examiner's Use

You are provided two specimens, **S1** (onion) and **S2** (potato).

1 (a) Make a labelled drawing of the cut surface of **S1**.

[6]

(b) (i) State **one** visible similarity between **S1** and **S2**.

.....

..... [1]

(ii) State **two** visible differences between **S1** and **S2**.

.....

.....

.....

..... [2]

For Examiner's Use

(c) Test samples of **S1** and **S2** for starch, using the following procedure:

- Cut a piece of **S1** that is approximately 1 cm^3.
- Chop and crush this sample using the tools provided.
- Fill one test-tube half full of water. Label this tube **S1a**. Add the crushed sample of **S1** to this tube.
- Shake the test tube **S1a** well to mix the sample. Let the pieces of solid settle.
- Label another test-tube **S1b**.
- Pour half of the liquid of test-tube **S1a** into test-tube **S1b**. Leave the solid pieces in test-tube **S1a**.
- Test the contents of **S1a**, for starch using the iodine solution provided.

(i) Record your observation of **S1** in Table 1.1. [1]

- Using clean test-tubes labelled **S2a** and **S2b**, repeat the procedure in **(c)** with **S2**.

(ii) Record your observations of **S2** in Table 1.1 on page 4. [1]

For Examiner's Use

(d) (i) Describe how you would carry out a test for reducing sugar.
Include all the safety precautions that you would take while carrying out this test.

.....

.....

.....

.....

.....

..... [4]

At this stage you will need to attract the attention of your Supervisor by raising your hand. The Supervisor will fill the empty container with hot water.

• Test the contents of the two tubes labelled **S1b** and **S2b**, for reducing sugar.

(ii) Record your observations in Table 1.1.

Table 1.1

test	observations	
	S1	**S2**
starch		
reducing sugar		

[2]

(e) State the conclusions you could make about the specimens **S1** and **S2** from your observations from the food tests and the structure of **S1** and **S2**.

For Examiner's Use

Food tests

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.....

.....

Structure

.....

.....

.....

[4]

[Total 21]

2 As the heart pumps around the human body, a pulse may be felt at certain sites, such as the one shown in Fig. 2.1.

(a) (i) Label on Fig. 2.1, **one** other site where a pulse may be felt.

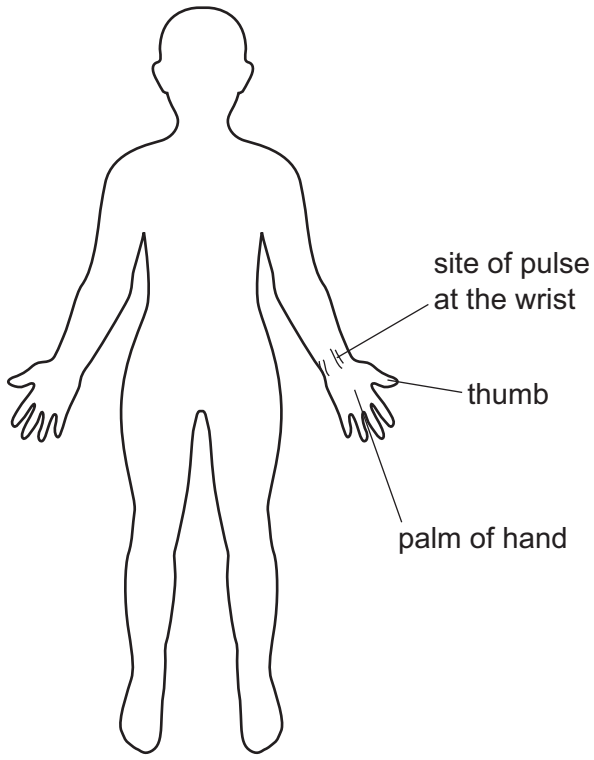


Fig. 2.1

[1]

(ii) Suggest why it is possible to feel the pulse at these sites.

.....

..... [2]

For Examiner's Use

(b) (i) Measure your pulse rate at the wrist as shown in Fig.2.1.

- Using one or two of your fingers (not your thumb) to apply gentle pressure to the pulse site at the wrist.
- Count the pulse using the second hand of the clock for 15 seconds.
- Record this in Table 2.1.
- Repeat this procedure twice more and record the results in Table 2.1.
- Multiply by four to obtain the pulses per minute and record in Table 2.1.
- Calculate the mean pulses per minute and record in Table 2.1.

Table 2.1

attempt	pulses per 15 seconds	pulses per minute
1		
2		
3		
mean		

[4]

(ii) Explain why it is advisable to repeat readings at least three times.

.....

..... [1]

(iii) State two factors that may affect heart rate. For each factor explain its effect on heart rate.

factor	explanation
1 ……..	……
……..	……
……..	……
2 ……..	……
……..	……
……..	……

[4]

(c) Body mass and heart rates for a number of different mammals are shown in Table 2.2.

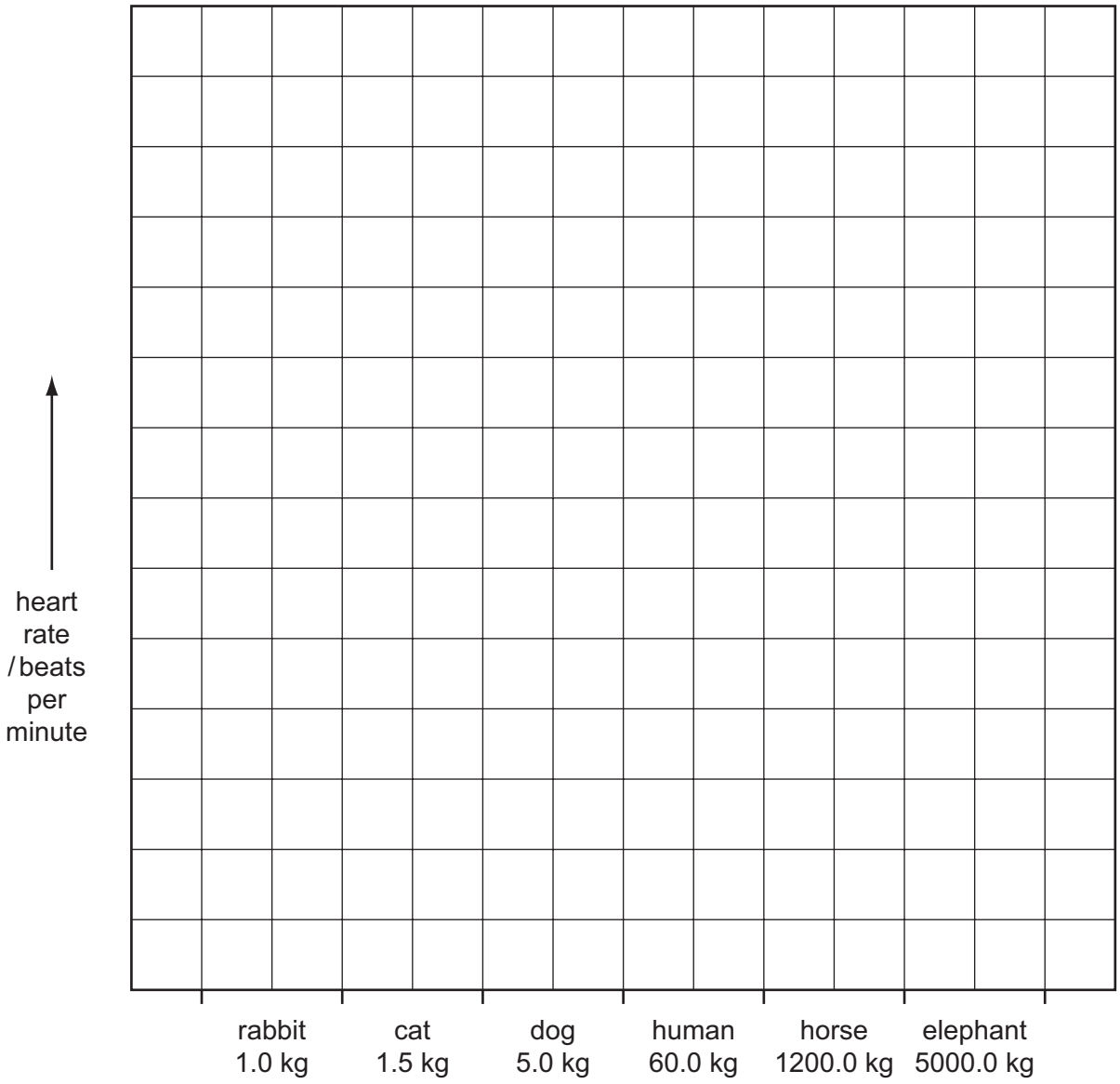
Table 2.2

mammal	body mass / kg	heart rate / beats per minute
rabbit	1.0	200
cat	1.5	150
dog	5.0	90
human	60.0	
horse	1200.0	44
elephant	5000.0	30

• Copy your mean pulse rate (from Table 2.1) into Table 2.2.

For Examiner's Use

(i) Plot the data in a bar chart to show heart rate for all six mammals.



[5]

(ii) Describe the general trend shown by this data plotted on the bar chart.

.....

..... [1]

(d) An elephant can live for 70 years, a cat for 15 years and a rabbit for 9 years.

Suggest how heart rate and body mass might affect life expectancy of mammals.

..... [1]

[Total: 19]

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