

EXAMINATION NO.: _____
THE MALAWI NATIONAL EXAMINATIONS BOARD
2014 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

BIOLOGY

Subject Number: M022/II

Thursday, 10 July

Time Allowed: 2 hour sessions
8:30 am onwards

PAPER II (40 marks)

Practical

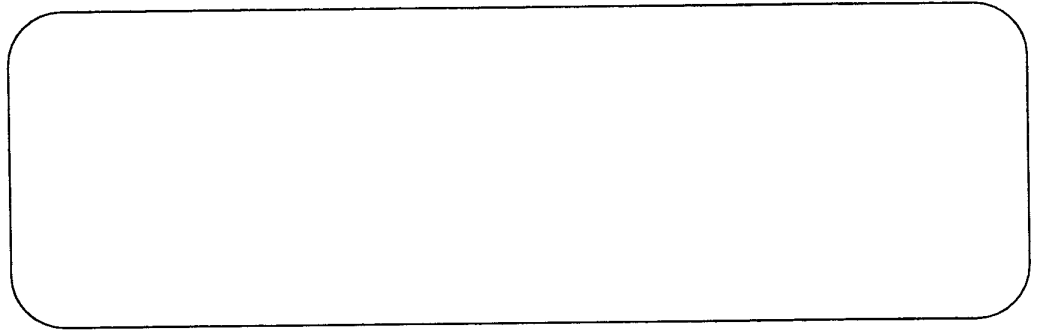
1. This paper contains 6 pages. Please check.
2. Write your **Examination Number** at the top of this page and of every sheet.
3. Answer **all** the **four** questions in the spaces provided on the question paper. The maximum number of marks for each answer is indicated against each question. A pencil should be used for all drawings.
4. In the table provided on this page, **tick** against the question number you have answered.
5. You should hand in your question paper to the invigilator when time is called to stop writing.

Question Number	Tick if answered	Do not write in these columns	
1			
2			
3			
4			



1. You are provided with specimen **Q** and a 30 cm ruler.

- a. Using a pencil, draw specimen **Q** and label any **three** parts.

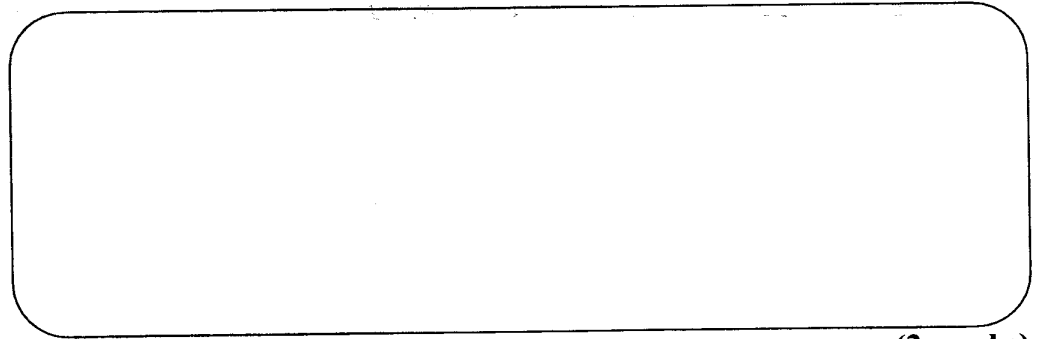


(4 marks)

- b. Measure the length of the longest axis of specimen **Q**. Your answer should be in millimetres (mm).

(1 mark)

- c. Calculate the magnification of your drawing in **1(b)**.



(3 marks)

- d. Mention any **two** human activities that affect the population growth of specimen **Q**.

(2 marks)

- e. Explain any **one** way in which the shape of specimen **Q** helps in its mode of locomotion.

(2 marks)

Continued/...

2. **Figure 1** is a graph showing pattern of growth of an invertebrate over a period of time.

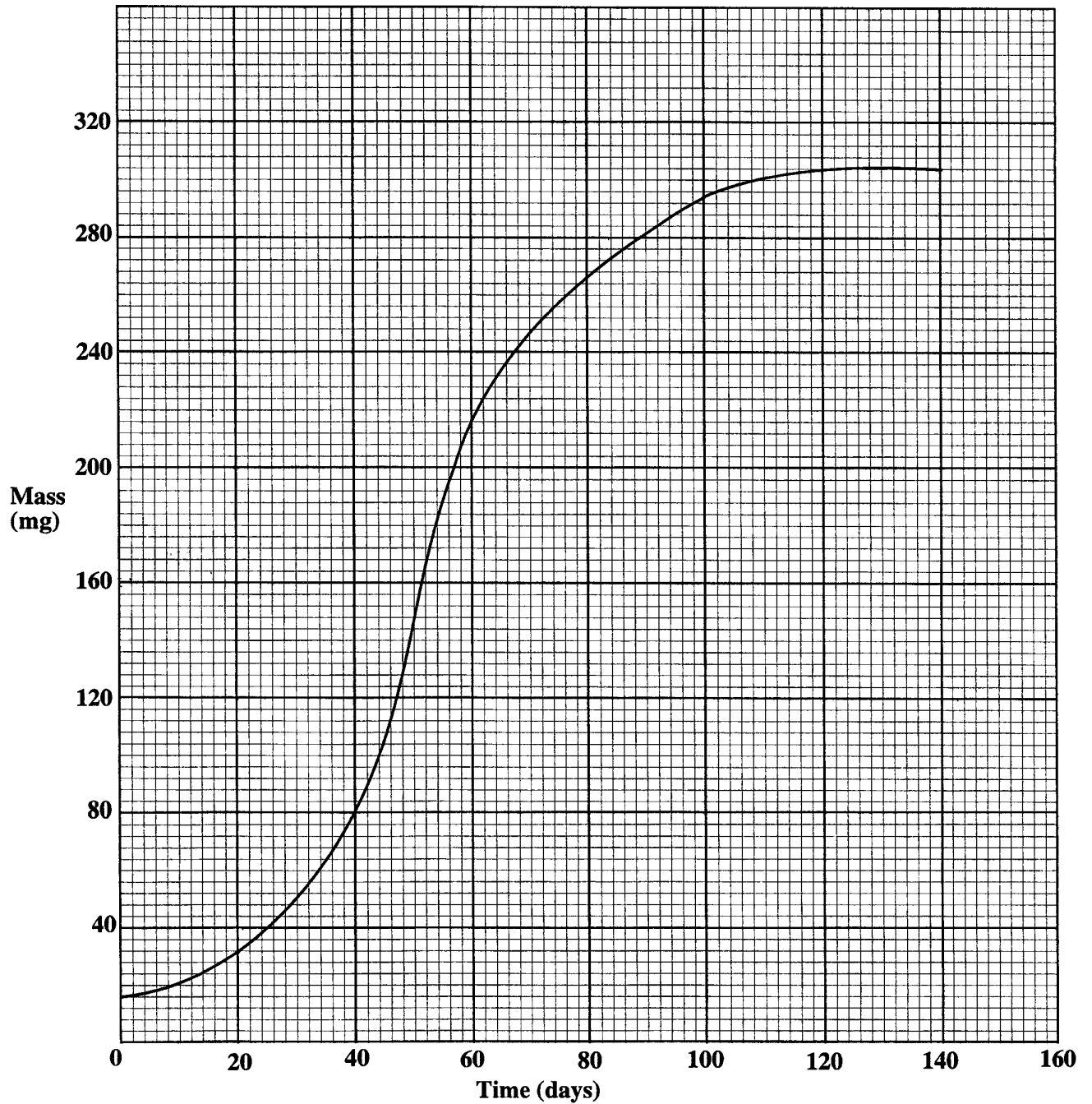


Figure 1

Continued/...

2. (Continued)

- a. Describe the growth pattern of the organism.

(3 marks)

- b. What was the mass of the invertebrate on day 60?

(1 mark)

- c. Calculate the average growth rate per day of the organism between days 40 and 120.

(3 marks)

- d. Name the type of cell division that is responsible for growth in an organism.

(1 mark)

- e. Explain how availability of food can affect the growth rate of an organism.

(2 marks)

Continued/...



Continued/...

4. (Continued)

- a. Use the biological key provided to identify the animals.

Key

- | | | |
|----|-------------------|------------|
| 1. | Has wings..... | See 2 |
| | Has no wings..... | See 3 |
| 2. | Has a beak..... | Parrot |
| | Has no beak..... | Drosophila |
| 3. | Has legs..... | Colobus |
| | Has no legs..... | See 4 |
| 4. | Has fins..... | Tilapia |
| | Has no fins..... | Lamnnea |

- b. Write down the names of the animals in the spaces provided.

R: _____

S: _____

T: _____

U: _____

V: _____

(5 marks)

- c. What type of skeleton does V possess?

(1 mark)

END OF QUESTION PAPER

NB: This paper contains 6 pages.