



EXAMINATION NO.: _____

THE MALAWI NATIONAL EXAMINATIONS BOARD
2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

BIOLOGY

Subject Number: M022/I

Thursday, 21st January 2021

Time Allowed: 2 hours
8:00 – 10:00 am

PAPER I

(100 marks)

Instructions:

1. This paper contains 11 printed pages. Please check.
2. Before you begin, fill in your Examination Number at the top of the question paper and on all other sheets.
3. This paper has two sections, A and B. Section A has ten questions and Section B has three questions.
4. Answer all the 13 questions in the spaces provided. The maximum number of marks for each answer is indicated against each question.
5. In the table provided on this page, tick against the question number you have answered.
6. At the end of the examination, hand in your 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			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Section A (70 marks)

1. Figure 1 is a diagram of a mammalian sperm. Use it to answer the questions that follow.

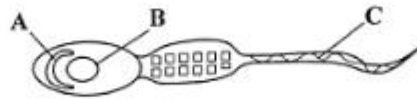


Figure 1

- a. Name the part labelled B.
- _____
- (1 mark)
- b. State the function of the part labelled C.
- _____
- (1 mark)
- c. Explain what happens to part labelled A during fertilisation.
- _____
- _____
- (2 marks)
- d. Explain any **two** adaptations of the sperm for movement.
- _____
- _____
- _____
- _____
- (4 marks)
2. a. State any **two** functions of blood plasma.
- _____
- _____
- (2 marks)

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nued)

Mention any **two** characteristics of blood capillaries.

(2 marks)

Mention the blood vessel that supplies blood to the heart.

(1 mark)

Explain any **two** adaptations of red blood cells to its function.

(4 marks)

Define blood transfusion.

(1 mark)

State any **two** types of blood donors.

(2 marks)

State any **three** factors to be considered before organ transplant.

- (i) _____
- (ii) _____
- (iii) _____

(3 marks)

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4. a. State any **two** properties of enzymes.
- (i) _____
- (ii) _____
- (2 marks)
- b. Explain any **three** adaptations of small intestine for food absorption.
- (i) _____
- _____
- (ii) _____
- _____
- (iii) _____
- _____
- (6 marks)
- d. Mention any **one** function of the large intestines.
- _____
- (1 mark)

5. **Figure 2** is a diagram showing a type of a bone injury. Use it to answer questions that follow.



Figure 2

- a. State the type of bone injury illustrated in the **Figure**.
- _____
- (1 mark)
- Continued/...

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5. (Continued)

- b. Describe first aid that can be given to a person with the fracture shown in 5 (a).

(6 marks)

6. Figure 3 is a diagram of a structure in the human digestive system. Use it to answer the questions that follow.

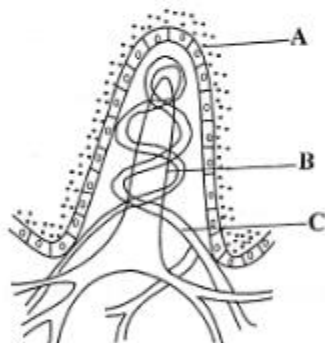


Figure 3

- a. (i) Name the structure.

_____ (1 mark)

- (ii) Mention parts labelled A and C.

A: _____

C: _____ (2 marks)

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8. (Continued)

- a. (i) Name the parts labelled B and C.

B: _____

C: _____ (2 marks)

- (ii) Explain the importance of having part A at the synaptic knob.

(2 marks)

- b. Which chemical influences movement of vesicles at the synaptic knob?

(1 mark)

9. a. State any three functions of the circulatory system.

(i) _____

(ii) _____

(iii) _____

(3 marks)

- b. Name the muscles that make up the heart.

(1 mark)

- c. To which group of muscles do the muscles that make up the heart belong?

(1 mark)

Continued/...

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9. (Continued)

d. Give two characteristics of the muscles that make up the heart.

(i) _____ (1 mark)

(ii) _____ (1 mark)

10. Explain any **four** adaptations of camels to their habitat.

(8 marks)

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12. Explain any **five** ways of preventing roundworm infection.

(10 marks)
Continued/...

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Section B (30 marks)

Answer **all** the **three** questions in this section. Your answers should be in an essay form.

11. Describe breathing mechanism in human beings.

(10 marks)
Continued/...

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- A hand-drawn double slash symbol, consisting of two parallel diagonal lines, is located in the lower-left quadrant of the page.

NB: This paper contains 11 printed pages.