EXAMINATION NO.: _____

NDIRANDE EDUCATION COACHING CENTRE

2023 MALAWI SCHOOL CERTIFICATE OF EDUCATION

MOCK EXAMINATION 1

BIOLOGY

Friday, 24 February **(100 Marks)**

Subject Number: M022/I

Time Allowed: 2 hours

18:00 – 20:00 pm

Instructions

1. This paper contains **12** printed pages. **Please check**
2. Before you begin, fill in your **Examination Number** and **Class** at the top of this page and all other sheets.
3. This paper contains **two** sections: **A and B.** Section **A** has **10** 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 this examination, hand in your completed 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			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Section A (70 Marks)

Answer all the questions in this section using the spaces provided.

1.a. State any **two** accessory glands in the male reproductive system .

_____

_____

_____

(2 marks)

b. State any **two** problems that are associated with the human digestive system.

_____

_____

_____

(2 marks)

c. Explain the effect of high auxin concentration on each of the following plant parts;

i. shoot tip

_____

(2 marks)

ii. root tip

_____

(2 marks)

2.Table 1 below shows percentage composition of substances taken from a sample of blood plasma and urine. Use it to answer the questions that follow.

Table 1

	Blood Plasma	Urine
Glucose	0.1	1.0
Urea	0.03	2.0
Mineral salts	0.4	0.6
Water	93	94
Protein	7.0	0

a. Name the substance that is absent in urine.

_____

(1 mark)

Continued/…

b. Explain one evidence that shows that the urine was taken from a person suffering from Diabetes mellitus.

_____

(2 marks)

c. Name the organelle in which mutation takes place in the human body

_____

(1 mark)

d. Explain the reason for a universal recipient to receive blood from any donor.

_____

_____

_____

_____

(4 marks)

2.A black rabbit was mated with a white rabbit. All the offsprings were black. Four pairs of these offsprings **X, Y, Z** and **N**. The Results of their offsprings are given below in the **table 2**.

Table 2

Pairs	Number of black offspring	Number of white offspring
X	8	2
Y	7	1
Z	6	3
N	6	3
Total		

a. Complete the table **(2 marks)**

b.i. What is the ratio of black young rabbit to white

(2marks)

Continued/…

ii. Which allele for colour is dominant.

_____

(1 mark)

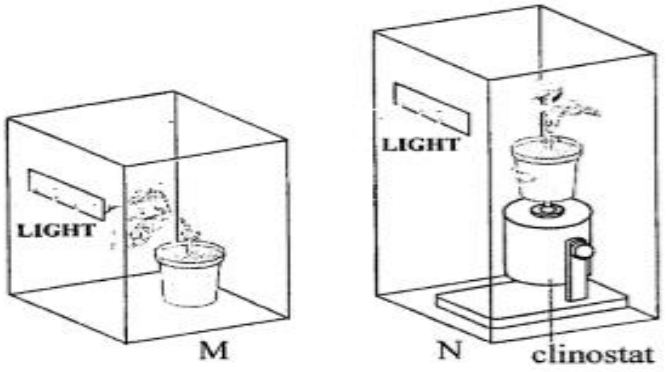
iii. State the genotypes of the parents

_____

_____

(2 marks)

3.**Figure 1** shows a set up in which two potted plants were placed in a cardboard box with an opening on one side. **N** is on a rotating clinostat while M is stationed. Use it to answer the questions that follow.



a. Explain one reason for including set up **N** in this experiment.

_____

(2 marks)

b. Describe the results of the experiments in set up **M.**

_____

_____

_____

_____

(3 marks)

Continued/…

c. State any one function of each of the following parts of a leaf;

i. Vascular bundles

_____

_____

(2 marks)

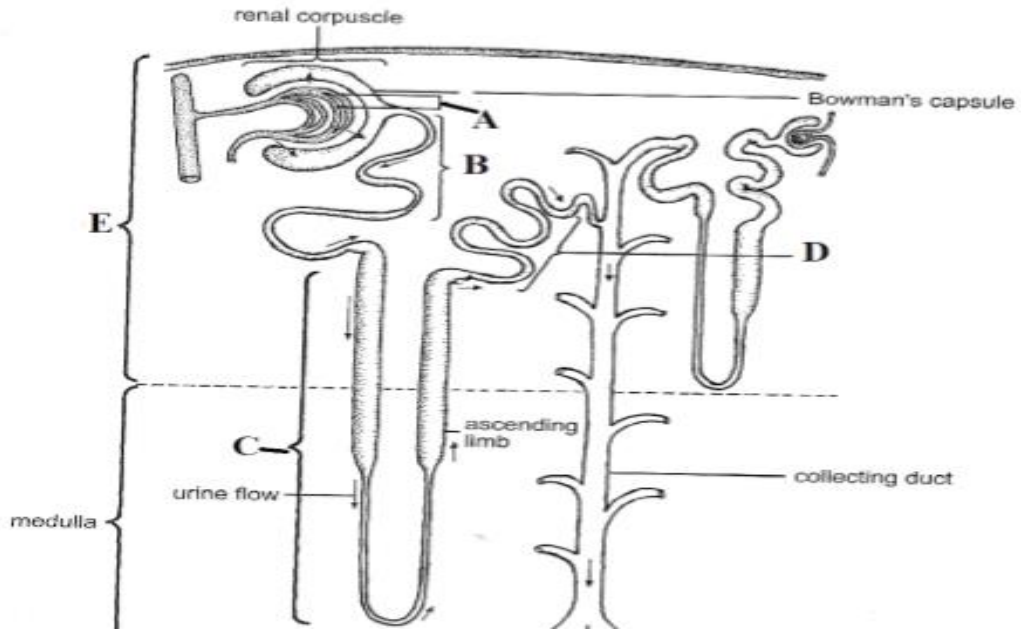
ii. Stomata

_____

_____

(2 marks)

4. Figure 2 shows a basic functional unit of a kidney. Use it to answer the questions that follow:



a. What is the main function of the vital unit above?

_____

(1 mark)

b. Identify the parts labelled **A** and **D**. **(1 mark each)**

A._____

D._____

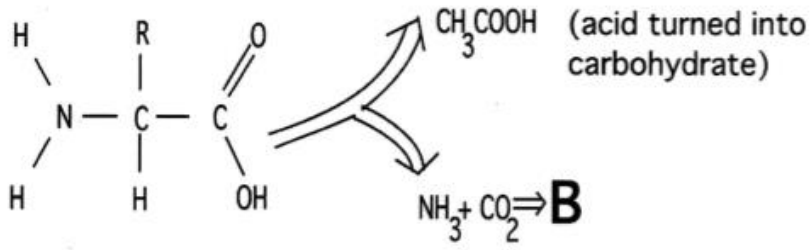
c. State the processes taking place at the parts labelled B and C

B._____

C._____

(2 marks)

5.Figure 3 shows a certain metabolic process that takes place in humans. Use it to answer the questions that follow.



a. Identify the process

_____

(1 mark)

b. Where in the human body does this process occur?

_____

(1 marks)

c. Write down the chemical formula for the product labelled **B**.

(2 marks)

6a. Describe the process of birth in humans

_____

_____

_____

Continued/…

_____

_____

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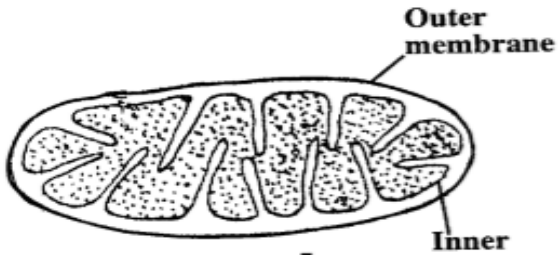
_____

_____

(5 marks)

7.Figure 4 shows a certain organelle. Use it to answer the questions that follow.



a.Name the organelle

_____

(1 mark)

b.State the major function of the organelle.

_____

(1 mark)

c.Explain any two adaptations of the organelle to its function.

_____

_____

_____

(4 marks)

Continued/…

8. A certain student developed a headache, high fever and severe diarrhoea after drinking water from a river. Use this information to answer the questions that follow.

a.Name the disease

_____

(1 mark)

b.i.Name the bacterium that causes the disease mentioned in (8a) above

_____

(1 mark)

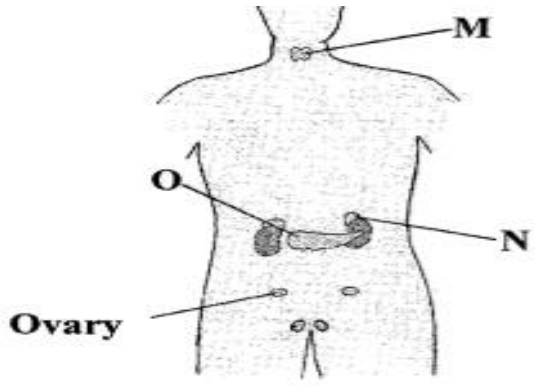
ii..Give any one way of controlling the disease

_____

_____

(1 mark)

9.Figure 5 shows positions of glands in the endocrine system. Use it to answer the questions that follow.



a. Name the hormone produced by the part marked **M**

_____

(1 mark)

b. Explain why the hormone produced by part **N** is called the Flight and fight hormone?

Continued/…

_____

_____

_____

(2 marks)

c.i,What would happen to the levels of glucose in the body if part **O** was removed?

_____

(1 mark)

ii.Explain your answer

_____

_____

_____

_____

(3 marks)

10.a.Describe any three adaptations of desert animals in their habitats

_____

_____

_____

_____

_____

_____

_____

(6 marks)

Continued/…

b. Differentiate between poikilothermic and endothermic organisms

_____

_____

_____

_____

(4 marks)

SECTION B (30 Marks)

Answer all the questions in this section in an essay form.

11.Explain any **five** factors that should be considered before blood transfusion.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Continued/…

(10 marks)

12. Explain any five adaptations of a leaf for photosynthesis.

Continued/…

_____

_____

_____

(10 marks)

13. Describe the process of osmoregulation in humans

_____

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_____

(10 marks)

END OF QUESTION PAPER

This paper contains 12 printed pages.

Continued/…