

NUMBER OF CANDIDATE: _____

CENTRAL EAST EDUCATION DIVISION



2023 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK
EXAMINATION

BIOLOGY

(Theory)

(100 marks)

Tuesday, March 2023

Subject Number: M022/1

Time allowed: 2 hours

(8:00 a.m.– 10:00 a.m.)

Instructions

1. This paper contains 11 pages. Please check.
2. Before you begin, write your examination number at the top of each page of the question paper.
3. This paper has two section, **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. This paper has three sections. **A**, **B** and **C**.

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Question Number	Tick questions answered	Do not write in these columns	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
Total			

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Section A (70 marks)

1. a. Give **one** importance of photosynthesis to man.

(1 mark)

- b. Explain **any one** way in which each of the following leaf structures is adapted for photosynthesis

- (i) **cuticle:**

(2 marks)

- (ii) **lamina:**

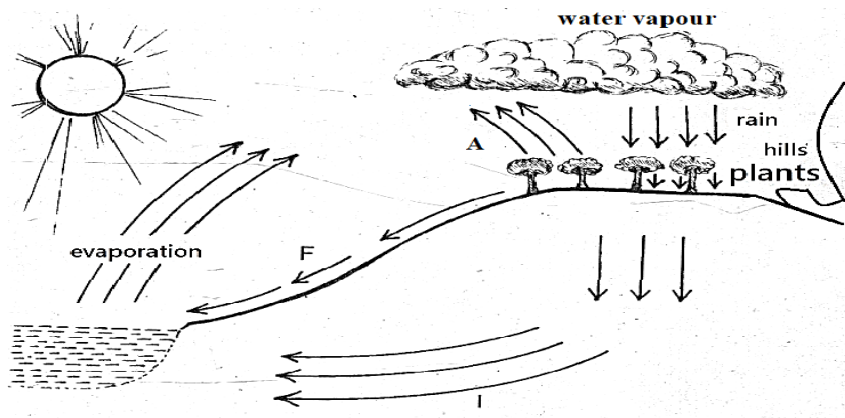
(2 marks)

- c. Give the function of chloroplast in a leaf.

(1 mark)

2. **Figure 1** is a diagram of the hydrological cycle. Use it to answer questions that follow.

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a. Identify processes **A** and **F**

A _____

F _____ (2 marks)

b. Explain how removing of trees would affect the cycle above.

_____ (2 marks)

3. (a). Give **two** ways in which birds overcome gravitational force.

_____ (2 marks)

(b). During which stroke does bird lose height?

_____ (1 mark)

(c). Explain any **two** functions of liver related to digestion.

_____ (4 marks)

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4. (a). What are halophytes?

(1 mark)

(b). Explain any **one** adaptation of halophytes to their habitat.

(2 marks)

(c). Give any **one** example of halophytes.

(1 marks)

5. a. State the stimulus in each of the following types of tropism

i. Thigmotropisms

_____ (1 mark)

ii. Geotropism

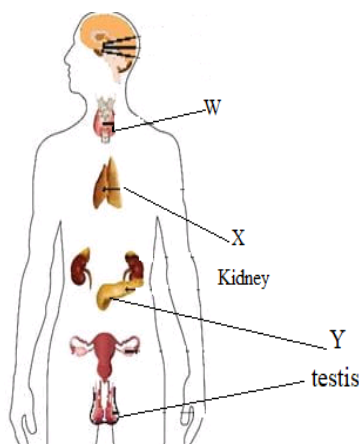
_____ (1 mark)

b. What is the difference between nastic response and tropism.

(2 marks)

6. **Figure 2** is a diagram showing position of endocrine glands in human body.

Use it to answer question that follow:



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a. Name the hormones produced by part marked **W** and **Y**

W: _____

Y: _____

(2 marks)

c. Explain any **one** effect of the hormones produced by part marked **W**

(2 marks)

d. Explain why breathing rate increases when one is frightened.

(2 marks)

7. (a). Define excretion

(1 mark)

(b) Explain any **two** adaptations of proximal convoluted tubule

(4 marks)

(c) Explain how the following treatments work on dialysis machine:

(i). having splitted dialysis tubing

(2 marks)

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(ii). having essential substances at the same concentration with blood.

(2 marks)

8. a. Give any **two** accessory glands in the male reproductive system.

(2 marks)

b. Explain any **two** adaptations of placenta for its function.

(i)

(2 marks)

(ii)

(2 marks)

c. State any **three** problems associated with reproduction

(3 marks)

e. Give any **three** disadvantages of breast feeding

(3 marks)

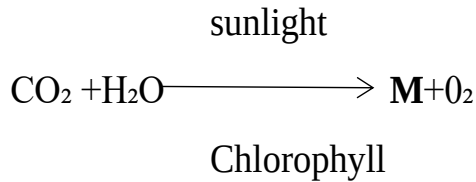
f. Mention any **two** mechanical method of family planning.

(2 marks)

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9. **Figure 3** is a diagram of a chemical equation of a biological process in plants.

Use it to answer questions that follow:



a. Mention the substance marked **M**

_____ (1mark)

b. Write down the chemical formula of the substance marked **M**

_____ (1 mark)

c. Explain **two** ways how a plant uses the substance mentioned in '1 a' above

(4 mark)

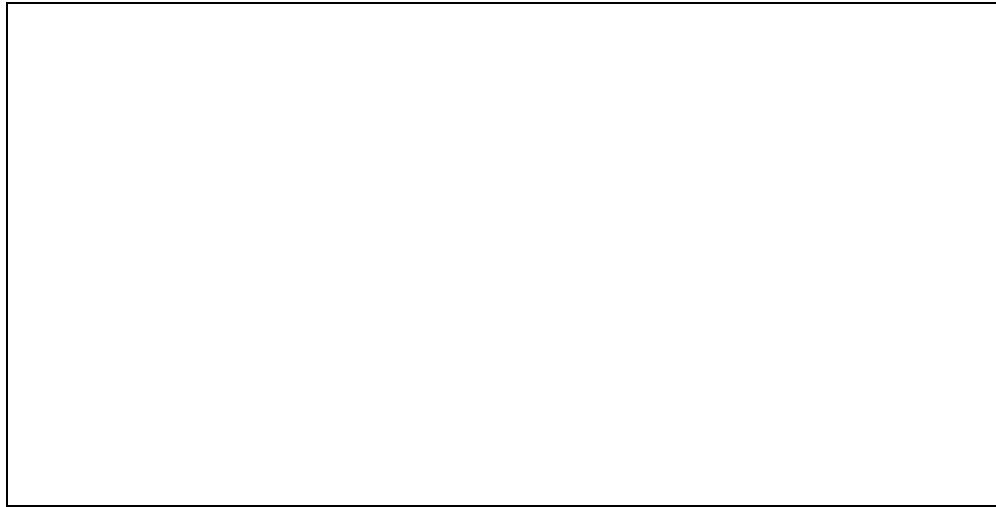
10. A black female dog was mated with a white male dog. Offspring produced were all black. Later the off springs were mated and produced black and white off springs. Sixty-four offspring were produced in the ratio of **3** to **1**. Taking **G** to stand for dominant gene and **g** for recessive gene.

a. What are the genotypes of the parents that produced sixty-four off springs?

_____ (2 marks)

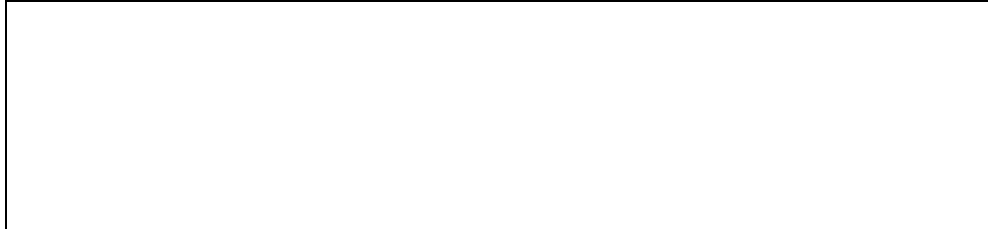
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- b. Show this information using the genetic crosses.



(5 marks)

- c. Calculate number of white puppies produced.



(3 marks)

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Section B (30 marks)

Answer **three** questions in this section. Your answer should be in an essay form.

11. Explain any **five** problems associated with digestive system.

[illegible]

(10 marks)

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12.Explain any *five* factors that affect the rate of transpiration.

(10 marks)

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13. Describe how urine is formed in mammalian kidney.

[illegible]

END OF QUESTION PAPER!