

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.**
- Before you begin, write your examination number at the top of each page of the question paper.
- This paper has two section, **A** and **B**. **Section A** has ten questions and **section B** has three questions
- Answer all the **13 questions** in the spaces provided. The maximum number of marks for each answer is indicated against each question
- In the table provided on this page, tick against the question number you have answered.
- 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:**

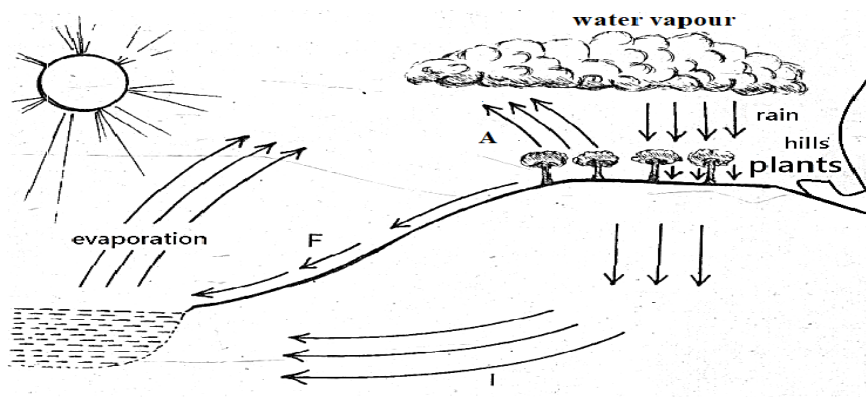
(2 marks)

- 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

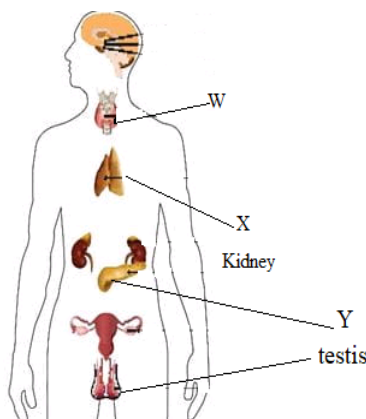
_____ (1 mark)

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)

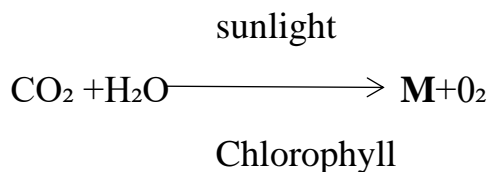
f. Mention any *two* mechanical method of family planning.

(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)

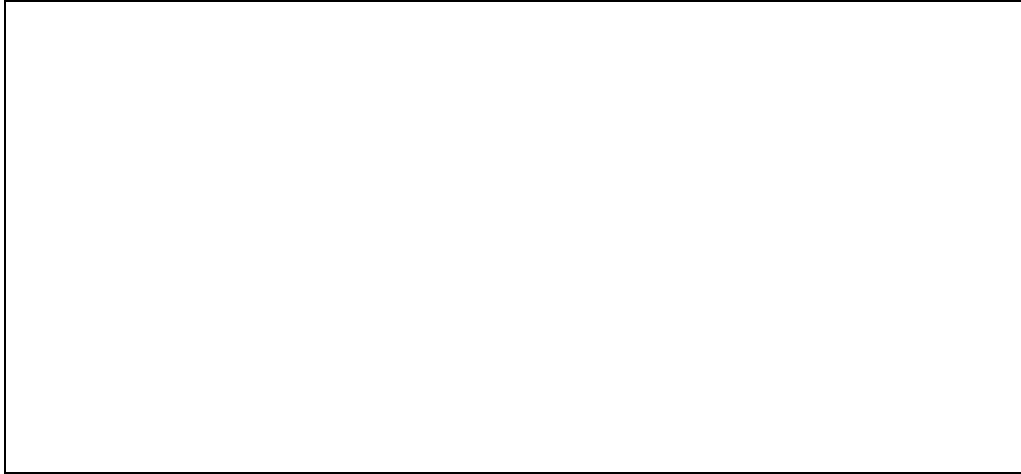
10. A black female dog was mated with a white male dog. Offspring produced were all black. Later the off springs were mated and produced black and white off springs. Sixty-four offspring were produced in the ratio of **3** to **1**. Taking **G** to stand for dominant gene and **g** for recessive gene.

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

_____ (2 marks)

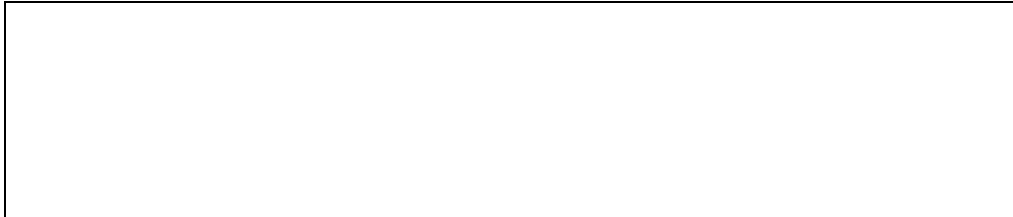
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- b. Show this information using the genetic crosses.



(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.

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(10 marks)

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

[illegible]

