EXAMINATION NO.: _____

THE MALAWI NATIONAL EXAMINATIONS BOARD

2024 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

AGRICULTURE

Subject Number: M012/II

Tuesday, 2 July

Time Allowed: 1 h 30 min sessions
10:00 am onwards

PAPER II
Practical
(40 marks)

Instructions

1. **This paper contains 6 printed pages. Please check.**
2. This paper has two sections: **A** and **B.**
3. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
4. Write your **Examination Number** on **all** pages.
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.

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

Section A (20 marks)

1. Form four students carried out an experiment to determine textural class of a 20g soil sample and came up with the following results:

Soil particles	Diameter size (mm)	Weight of soil particles (g)
Sand	2.00 – 0.02	2
Clay	0.02 – 0.002	14
Silt	Below 0.002	4

a. Describe the procedure that was followed when carrying out the experiment.

(5 marks)

b. Calculate the percentage of the soil particles in the soil sample.

Soil particles	Percentage
Sand	
Clay	
Silt	

(3 marks)

c. Give a reason for not recommending the soil for maize production.

(2 marks)

2. Describe a procedure that should be followed when processing mangoes into juice using canning method. In the description include any **four** materials that could be used.

(10 marks)

Continued/...

Section B (20 marks)

3. You are provided with the following;
   - Specimens labelled **W, X,** and **Y**.
   - Beakers / containers
   - Distilled water
   - Stirring rod / stick
   - 2 leaves of blue litmus paper

Procedure 1

Rub the specimen **W** between the thumb and fore finger.

a. Identify the texture of specimen **W**.

_____

(1 mark)

b. A farmer applies specimen **Y** to a maize garden.

(i) Identify the cropping system the farmer uses.

_____

(1 mark)

(ii) Explain any **one** way in which the cropping system mentioned in **b (i)** is important.

_____

_____

_____

(2 marks)

c. **Procedure 2**

1. Put specimen **W** into the beaker.
2. Add distilled water into the beaker.
3. Mix the contents in the beaker by stirring with the rod.
4. Dip one leaf of litmus paper into the soil solution and observe the colour change.

(i) Record the colour change of the litmus paper.

_____

(1 mark)

3. c. **(Continued)**

Procedure 3.

5. Add one tea spoon full of specimen **X** to the soil solution in the beaker
6. Stir the mixture using the stirring rod
7. Dip another leaf of litmus paper in the soil solution and observe the colour change.

(ii) Record the colour change of the litmus paper.

_____

(1 mark)

(iii) Give a reason for the observations on the colour of the litmus paper observed in **c (i)** and **(ii)**.

_____

_____

_____

_____

(1 mark)

d. Name the chemical property of specimen **W** being investigated.

_____

(1 mark)

e. Explain **one** way in which application of specimen **X** would improve maize production.

_____

_____

_____

_____

(2 marks)

Continued/...

4. You are provided with the following specimens labelled **M** and **N** and sand paper.

Procedure 1

Extract the seeds from specimen **M**.

a. Give any **two** ways in which the activity performed on specimen **M** is important.

_____

_____

(2 marks)

Procedure 2

From the extracted seeds, choose five seeds which can be used for plant breeding.

b. (i) Name the method of crop improvement used in the procedure.

_____

(1 mark)

(ii) State any **two** characteristics that have been used to choose the five seeds.

_____

_____

(2 marks)

Procedure 3

Using the piece of sand paper provided, conduct a pasture seed treatment on specimen **N**.

c. (i) Name the method of seed treatment used in procedure 3.

_____

(1 mark)

(ii) Describe the procedure which was used during the seed treatment in **c (i).**

_____

_____

(2 marks)

(iii) Explain **one** way in which the procedure carried out in **c (ii)** is important.

_____

_____

(2 marks)

END OF QUESTION PAPER

This paper contains 6 printed pages.