# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2001 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

Subject Number: M012/I

Thursday, 1 November

Time Allowed: 2 hours
1:30 -3:30 pm

## PAPER I
(100 marks)

**Instructions**

1. **This paper contains 8 pages. Please check.**

2. Answer **all eight** questions in Section A and any **three** questions in Section B in the spaces provided. The maximum number of marks for each answer is indicated against each question.

3. Remember, you are required to answer only **three** questions in Section B. If you answer all the four, the last one will not be marked.

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EXAMINATION NO.: _____

Page 2 of 8

2001

Section A (40 marks)

Answer all questions in this section.

1. a. What is an agricultural credit?

~~The~~ ~~this~~ ~~+~~ These are Services that provide assistan to Small holder farmers

(1 mark)

b. State any two sources of credit for a smallholder farmer.

(i) Credit agencies

(ii) financial Institutions

(2 marks)

c. Explain one way in which agricultural credits contribute to agricultural production.

They assist Small holder farmers like buying fertilizer which increases the fertility of land

(2 marks)

2. a. Describe any one way in which a maize stalkborer may cause damage to a young maize crop.

(2 marks)

b. Explain how closed season helps to control crop pests in the field.

It help ~~INESTEK~~

(2 marks)

3. a. Explain how selection of large seeds for planting may help to increase crop production.

(2 marks)

b. A farmer has 4 hectares. She wants to plant maize whose germination is 70%. If one hectare needs 28 kg, how much seed will be required?

EXAMINATION NO.: _____

2001 Page 3 of 8 M012/I

4. **Figure 1** is a diagram of the Nitrogen cycle.

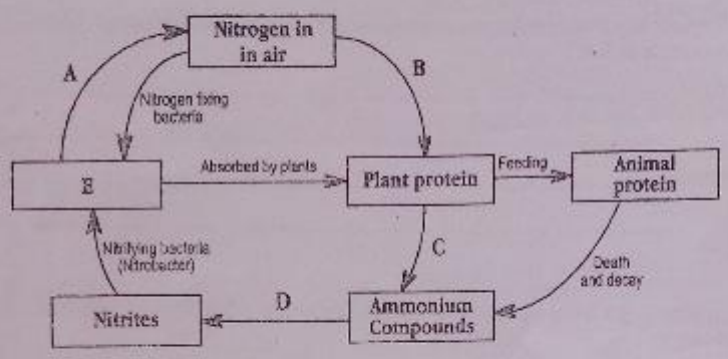


**Figure 1: Diagram of the Nitrogen Cycle**

a. Complete A, B, C, D and E.

A (Type of bacteria) : _____

B (Type of bacteria) : _____

C (Process) : _____

D (Type of bacteria) : _____

E (Nitrogen form) : _____

(5 marks)

b. Name any one nitrogenous fertilizer used by farmers in Malawi.

_____

(1 mark)

**Table 1** shows a rotation sequence for vegetables. **Year 1** has been completed for you.

**Table 1: A rotation sequence for vegetables**

| | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Plot 1 | Beans | cabbage | Onions |
| Plot 2 | Cabbages | Onions | Tomatoes |
| Plot 3 | Onions | Tomatoes | Beans |
| Plot 4 | Tomatoes | Beans | cabbage |

a. Complete the sequence for years 2 and 3. (2 marks)

Continued/...

EXAMINATION NO.: _____

M012/1



(Continued)

b. Explain any two benefits that a farmer might have by following the rotation sequence in 5. a.

(i) _____

(ii) _____

(4 marks)

6. An agricultural plot has a vertical interval of 6 metres and a horizontal distance of 40 metres.

a. Calculate % slope.

(3 marks)

b. Explain any two ways in which the percentage slope in 6.a. may be a problem to the use of the agricultural plot.

(i) _____

(ii) _____

(4 marks)

7. State any three factors that affect the rate of crop maturation.

(i) _____

(ii) _____

(iii) _____

(3 marks)

8. What do the following terms mean in agriculture?

a. **Maintenance ration**

b. **Steaming up**

EXAMINATION NO.: _____



(Continued)

c. **Mixed farming**

Crops grown into many types of crops inthe same field or one plot.

(1 mark)

d. **Leaching**

This is one of the most important factors of increased soil pH.

(1 mark)

e. **Capital**

~~Ave~~ Availability of the capital when starting farming or irrigation

(1 mark)

## Section B (60 marks)

Answer any three questions in this section.

Soil and water are some of the factors that determine agricultural productivity.

a. Describe the effects of each of the following on the availability of plant nutrients:

(i) **rainfall**

When the rainfall down the soil particle breaks into smaller particles and it becomes to loam soil

(2 marks)

(ii) **low soil pH**

low soil pH, where loss of nutrients through leaching is reduced.

(2 marks)

b. Explain any **two** ways in which soil depth affects crop production.

(i) Soil depth affect root development

(ii) Soil depth affect the amount of water held by the soil.

(4 marks)

c. Explain briefly **two** ways that would reduce the rate of evaporation in a crop field.

(i) By conserving box ridges

(ii)

EXAMINATION NO.: _____



2001

9. (Continued)

d. Explain any two factors that lower water table.

(i) _____

(ii) _____

(4 marks)

e. Explain any two ways in which the water that has infiltrated into the soil returns to the natural water cycle.

(i) _____

(ii) _____

(4 marks)

10. High human population growth contributes to low standards of living and low nutritional status in Malawi.

a. State any four indicators of low standards of living.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(4 mar

b. Explain any two ways of improving the standards of living among the farming community.

(i) Keeping more foods the whole year so that a farmer can feed the whole

(ii) _____

(4 mar

c. Explain any two reasons that show high population growth is linked to poor nutrition and health.

(i) _____

(ii) _____

EXAMINATION NO.: _____



ntinued)

Explain **two** factors that have contributed to an increase in population growth in Malawi.

(i) poor family planning. people in Malawi

(ii) they ~~d~~ ~~don~~ do not have good family planning

(4 marks)

Explain any **four** reasons for the need for adequate nutrition for a growing population.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(4 marks)

Explain any **five** ways in which adequate farm buildings and storage facilities are important in agriculture.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

Discuss **five** ways in which a farmer may maintain farm structures and storage facilities.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

Continued/...

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EXAMINATION NO.: _____

2001 Page 3 of 8

12. Animal production in Malawi faces a number of problems.

a. Discuss five factors that influence uneven distribution of animals in the national herd.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

b. Smallholder farmers in Malawi are encouraged to cross the local hen with Black Australop. Describe five limitations of the local hen.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

END OF QUESTION PAPER

# THE MALAWI NATIONAL EXAMINATIONS BOARD

**2001 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

## AGRICULTURE

**Subject Number: M012/II**

**Monday, 5 November**

**Time Allowed: 2 hour sessions**
**8.30 am onwards**

## PAPER II

(100 marks)

**Practical**

1. **This paper contains 4 pages. Please check**

2. Answer all questions. Use the Answer Book provided. Each question carries 20 marks. The marks are indicated against each section of the question.

3. **At the end of the examination, hand in the question paper together with the answer book.**

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Turn over

01

. You are provided with specimens A, B and C.

a. Identify two primary products. (2 marks)

b. Identify one secondary product. (1 mark)

c. Describe two ways how the provision of C from the rural sector has led to the establishment of industries in Malawi. (4 marks)

d. Break specimen A longitudinally. Draw and label four parts. (6 marks)

e. Mention the raw material from which specimen B is made. (1 mark)

f. State two ways in which specimen C can be used in feeding livestock. (2 marks)

g. Explain any two ways in which specimen A is important to the economic development of Malawi. (4 marks)

2. You are provided with four different planting materials M, N, O and P.

a. Identify M, N, O and P. (4 marks)

b. State any two characteristics of good planting material for specimen O. (2 mark

c. Which of the four planting materials are propagated vegetatively? (2 mark

d. (i) Give any two advantages of vegetative propagation. (2 mar
(ii) Give any two disadvantages of vegetative propagation. (2 mar

e. Draw and label three parts of planting material M. (4 mar

f. Assuming all seeds germinate, calculate the plant population per hectare for specimen N if 2 seeds are planted/station at a spacing of 15 cm apart and 90 cm between rows. (4 mar

3. Figure 1 is a diagram of a disease and a parasite of chickens labelled P and Q respectively. Use it to answer the questions that follow:

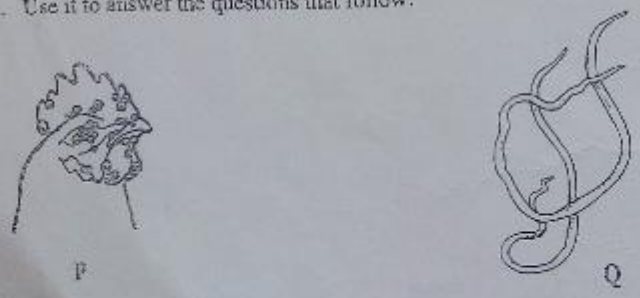



Figure 1: Diagram of a disease and a parasite of chickens

a. Identify the disease labelled P and the parasite labelled Q. (2 m

b. Explain three ways in which the parasite labelled Q reduces productivity in chickens. (6

c. Explain three ways of controlling the parasite labelled Q. (6

3. (Continued)

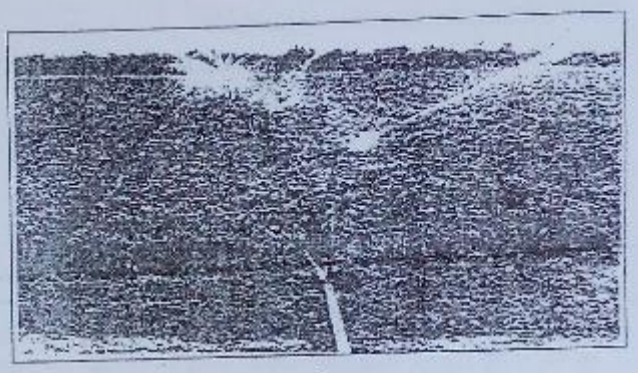
d. Name the organism that causes the disease labelled **P**. (1 mark)

e. Mention any **three** parts of a chicken affected by the disease labelled **P**. (3 marks)

f. Describe any **one** way of controlling the disease labelled **P**. (2 marks)

4. **Figure 2** shows diagrams of irrigation systems labelled **A** and **B**. Use it to answer questions that follow:

A



B

**Figure 2: Diagrams of Irrigation Systems**

a. Identify the types of irrigation systems labelled **A** and **B**. (2 marks)

b. (i) State any **three** advantages of the irrigation system shown in **B**. (3 marks)

(ii) State any **three** disadvantages of the irrigation system shown in **B**. (3 marks)

c. Explain **one** advantage of planting trees in the windward side of a garden irrigated by the system in **B**. (2 marks)

d. (i) What is the name of the structures filled with water in **A**? (1 mark)

(ii) Explain any two problems caused by the structures named in d.(i) above. (4 marks)

e. Briefly explain how irrigation alters the farming calendar. (2 marks)

f. List any **three** factors to consider when establishing the irrigation system in **A**. (3 marks)

Continued/...

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5. A vegetable farmer kept the following records:
   - Land tax K3 000.00
   - 2 bags of CAN fertilizer at K1 200.00 per bag
   - Wages of permanent labour K18 000.00
   - Insecticides K1 300.00
   - Cost of casual labour K6 000.00
   - Packets of vegetable seed K300.00
   - Depreciation cost of irrigation equipment K3 000.00

   a. Classify the records into fixed costs and variable costs. (7 marks)

   b. What was the total variable cost? (1 mark)

   c. What was the total fixed cost? (1 mark)

   d. If the farmer sold 100 bunches daily on average for a period of 90 days at a price of K10.00 per bunch, calculate:

      (i) the amount obtained from the vegetable garden. (2 marks)

      (ii) the gross margin of the vegetable enterprise. (3 marks)

      (iii) the profit/loss of the vegetable enterprise. (2 marks)

   e. What is the main difference between variable costs and fixed costs? (2 marks)

   f. Explain any one way in which farmers prefer calculating gross margins to profits. (2 marks)

END OF QUESTION PAPER

EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2002 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

**Thursday, 24 October**

**Subject Number: M012/I**

**Time Allowed: 2 hours**
**9:00 -11:00 am**

Lilongwe Islamic Sec. School
29 OCT 2002
P.O. Box 2413
Lilongwe

## PAPER I
(100 marks)

**Instructions**

1. **This paper contains 8 pages. Please check.**
2. Answer **all eight** questions in Section A and any **three** questions in Section B in the spaces provided. The maximum number of marks for each answer is indicated against each question.

   Remember, you are required to answer only **three** questions in Section B. If you answer all the four, the last one will not be marked.

   Write your **Examination Number** at the top of this question paper and on all other sheets.

   Hand in your question paper to the invigilator when time is called to stop writing.

marks

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Turn over

2002 EXAMINATION NO.: _____ M012/1

Page 2 of 8

## Section A (40 marks)

Answer all questions in this section.

1. a. Explain one important characteristic of labour which makes it different from other major factors of production.

_____

_____ (2 marks)

b. State any three ways in which smallholder farmers may improve their managerial skills in resource allocation.

(i) _____

(ii) _____

(iii) _____ (3 marks)

2. One example of breeding in livestock is shown below:

Brother X Sister
↓
Progeny

a. Identify this type of breeding in livestock.

_____ (1 mark)

b. Explain any two advantages of the breeding system identified in question 2.a.

(i) _____

_____ (2 marks)

(ii) _____

_____ (2 marks)

3. Describe how each of the following influences agricultural production:

a. Photosynthesis

_____

_____

_____ (2 marks)

b. Thinning

_____

_____

_____ (2 marks)

c. Balanced ration

_____

_____

EXAMINATION NO.: _____



a. With any two examples, describe an inventory record that may be kept by a vegetable farmer.

(i) _____

(ii) _____

(4 marks)

b. Explain two ways in which an inventory record may improve the vegetable enterprise.

(i) _____

(ii) _____

(4 marks)

c. Mention any four items that may be included in production records for the vegetable enterprise.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(4 marks)

d. Explain any two ways in which production records may help to increase the yield of vegetables.

(i) _____

(ii) _____

(4 marks)

e. Explain two ways of hardening off vegetable seedlings.

(i) It is the reduction of watering during the last two weeks before transplanting

(ii) It is necessary to custom the seedlings to new growing conditions

(4 marks)

Continued/...

9. (Continued)

c. With the aid of a diagram, describe how inorganic fertilizers are applied in a growing maize crop using **dollop** method.

**Diagram:**

(2 marks)

**Description:**

(2 marks)

d. Explain **one** reason for each of the following practices of applying fertilizers:

(i) **Basal dressing**

(2 marks)

(ii) **Top dressing**

(2 marks)

e. Explain **one** way in which each of the following may lower the quality of khola manure:

(i) storage

(ii) time of application

(2 marks)

EXAMINATION NO.: _____ M012/1

Page 3 of 8

002

Explain any **two** problems of land fragmentation in Agriculture.

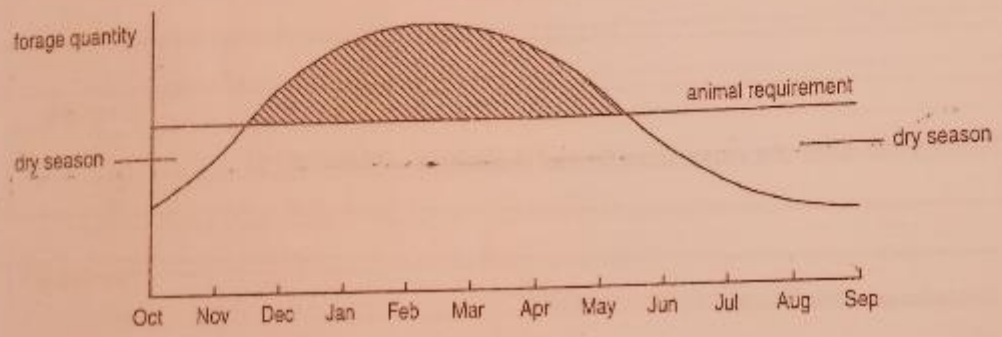
(i) _____

_____ (2 marks)

(ii) _____

_____ (2 marks)

The figure below shows seasonal productivity of pastures.




**Seasonal Productivity of Pastures**

Explain the best way of making use of pasture between:

a. mid November and mid May

_____

_____ (2 marks)

b. mid May and mid November

_____

_____ (2 marks)

Explain any **two** ways in which soil structure is destroyed.

(i) - Using of heavy machinery on wet soils
This is when land cultivation is done during the wet sea
It ends up destroying the soil structure more (2 marks) Parth

(ii) when heavy machinery is used
- When the soil is over cultivated it becomes refined an

(2 marks)

EXAMINATION NO.: _____
Page 4 of 8

2002

7. Give an explanation for each of the following.

a. Keeping ducks around fish ponds, the ducks and fish suplement each other.

_____

_____ (2 marks)

b. It is better to apply Urea than CAN in high rainfall areas.

_____

_____ (2 marks)

c. A newly born calf needs colostrum for the first four days.

_____

_____ (2 marks)

8. a. Explain one reason for encouraging farmers to practise seed dressing.

_____

_____ (2 marks)

b. Describe any two factors that affect seed rate.

(i) _____

_____

(ii) _____

_____ (4 marks)

## Section B (60 marks)

Answer any three questions in this section.

9. Application of fertilizers is one of the major ways of improving and maintaining the productivity of soil.

a. Describe any two deficiency symptoms of nitrogen that could be observed in a growing maize crop.

(i) _____

_____

(ii) _____

_____ (4 marks)

b. Explain any two functions of organic fertilizers in the soil.

(i) _____

1. Correct feeding is one of the principles in livestock management.

a. Explain any **five** situations in which livestock requirements for feeds are greater than their normal intake.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

b. With the aid of a well labelled diagram, describe the digestion of grass in a cow between the oesophagus and duodenum.

**Diagram:**

(4 marks)

**Description:**

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EXAMINATION NO.: _____



2002

**12.** a. Describe any five problems that have hindered agricultural development in Malawi.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 marks)

b. For each of the problems described in question 12.a, explain one way of reducing its effects.

(i) _____

(ii) _____

(iii) _____

(iv) _____

THE MALAWI NATIONAL EXAMINATIONS BOARD

2003 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

Wednesday, 5 November

Time Allowed: 2 hour sessions
8:30 am onwards

## PAPER II

(100 marks)

**Practical**

Instructions

1. This paper contains 4 pages. Please check.
2. Answer all questions. Use the Answer Book provided. Each question carries 20 marks. The marks are indicated against each section of the question.
3. Write your **Examination Number** on all pages of your Answer Book.

**At the end of the examination, hand in your answer book to the invigilator.**

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2003

1. You are provided with samples of livestock feed labelled X, Y and Z.

a. Identify the feed samples labelled X, Y and Z.

b. (i) Explain two reasons for giving sample Y to layers.

(ii) Explain any two reasons for providing green vegetables to layers besides taking sample Y.

(iii) State any two reasons for providing a small amount of sample X to layers.

c. (i) Explain one problem a chicken feeding only on sample Z would eventually have.

(ii) How would you correct the problem in Question c(i)?

d. If you were to prepare a simple ration for chickens from maize, madeya and beans, describe how this could be done.

2. You are provided with samples of two root systems.

a. Identify the root systems labelled Q and R.

b. (i) Draw the root system Q and label three parts.

(ii) Draw the root system R and label two parts.

c. Explain how the rooting depth of Q affects:

(i) amount of irrigation

(ii) frequency of irrigation

d. Why is the root system labelled R important in soil conservation?

e. Explain any two advantages of rotating crops with the two root systems identified in Question 2(a).

The **table below** shows results from Soil Science Laboratory and data from meteorological observations of an Extension Planning Area. Use it to answer the questions that follow:-

**Results from Soil Science Laboratory and Data from Meteorological Station**

| CHARACTERISTIC | SOIL A | SOIL B | SOIL C |
|---|---|---|---|
| Percentage sand | 40 | 42 | 20 |
| Percentage silt | 8 | 6 | 10 |
| Percentage clay | 50 | 47 | 60 |
| Soil colour | red | brown | black |
| Effective depth (metres) | 4 | 1 | 1.5 |
| Percentage organic matter | 2 | 5 | 10 |
| Rainfall (mm per year) | 2 000 | 1 500 | 1 000 |
| Annual rainfall distribution | more even distribution | uneven distribution | uneven distribution |
| Temperature | medium | medium | high |
| Soil pH | 5.1 | 6.2 | 7.4 |

a. (i) Which soil is likely to have the highest water holding capacity? **(1 mark)**

(ii) Explain **two** reasons for the answer to **Question a(i).** **(4 marks)**

b. (i) Which soil would be good for tree crops? **(1 mark)**

(ii) Explain **two** reasons for the answer to **Question b(i).** **(4 marks)**

c. Explain any **two** possible reasons for the acidity in **Soil A.** **(4 marks)**

d. (i) From which soil would the results show the highest population count of micro-organisms? **(1 mark)**

(ii) Explain **one** reason for the answer to **Question d(i).** **(2 marks)**

e. State any **three** ways of improving **Soil A.** **(3 marks)**

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Continued/....

4. Form Four students would like to find out the effect of four different crop spacings (30 cm, 60 cm, 90 cm and 120 cm) on the yield of maize in their school garden.

   a. Design an experiment in three blocks using a randomized block design. (7 ma

   b. Describe how the experiment would be conducted using the following guidelines:

      (i) carrying out the experiment (3 ma

      (ii) collection of data (3 ma

      (iii) recording of data (2 ma

      (iv) analysis of data (2 ma

   c. Give one reason for repeating an experiment. (1 ma

   d. In your opinion, which of the above spacings would you say is a control? Give a reason for your answer. (2 ma

5. A farmer has 2 hectares of land on which he/she grows MH18. He/she however plans to make the following changes:

   - To apply 4 bags of urea instead of 6 bags per hectare at K1 300.00 per bag.
   - To sell 40 bags of maize at K1 000.00 per bag to Chibuku Products instead of K850.00 per bag to ADMARC.
   - To store maize in 50 sacks at K30.00 each instead of storing it in the nkhokwe.
   - To spend K500.00 instead of K300.00 on actellic.
   - To spend K600.00/hectare instead of K300.00/hectare on casual labour.

   a. Prepare a partial budget for this farmer. (11

   b. Should this farmer go ahead with his/her plan? Explain your answer. (3

   c. Explain two main uses of the partial budget prepared in **Question 5a** to this farmer.

   d. Explain the major weakness of the partial budget prepared in **Question 5a.**

EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2003 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

**Subject Number: M012/I**

**Friday, 24 October**

**Time Allowed: 2 hours**
**1:30 – 3:30 pm**

## PAPER I
(100 marks)

**Instructions**

1. **This paper contains 8 pages. Please check.**

2. Answer **all eight** questions in Section A and any **three** questions in Section B in the spaces provided. The maximum number of marks for each answer is indicated against each question.

3. Remember, you are required to answer only **three** questions in Section B. If you answer all the **four**, the **last one** will **not** be marked.

4. Write your **Examination Number** in the spaces provided on each page.

5. Hand in your completed work to the invigilator when time is called to stop writing.

5 NOV 2003
P.O. Box 2612
Mzuzu

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EXAMINATION NO.: _____

Page 2 of 8

2003 003

Section A (40 marks)

Answer all questions in this section.

1. a. Define the term 'micro nutrients'.

These are the nutrients required in quantities by plants for normal growth development

(1 mark)

b. Differenciate the yellowing of maize leaves caused by nitrogen deficiency from caused by potassium deficiency.

_____

_____

_____

(2 marks)

c. Explain two losses of nitrogen from the soil through micro-organisms.

(i) _____

_____

(ii) _____

_____

(4 marks)

2. Explain any two ways in which a farmer can improve the profitability of an enterprise.

(i) _____

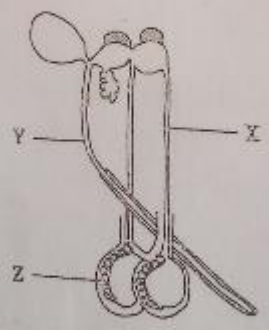
_____

(ii) _____

_____

(4 marks)

3. The **figure** below is a diagram of a reproductive system of a bull.




a. Name the parts labelled:

X _____

Y _____

Z _____

EXAMINATION NO.: _____ M012/1

Page 3 of 8

2003

3. (Continued)

b. State **one** function of each of the parts labelled:

X _____

Z _____ (2 marks)

c. Describe a **bloodless** method of castrating bull calves.

_____

_____

_____ (2 marks)

4. Explain any **two** ways in which international trade may be improved through community participation.

(i) _____

_____

(ii) _____

_____ (4 marks)

5. Explain **one** way in which HIV/AIDs has contributed to low agricultural production through each of the following at a farm:

(i) **labour force**

_____

_____

_____ (2 marks)

(ii) **capital**

_____

_____

_____ (2 marks)

6. Explain any **two** ways in which early weeding is important in crop production.

(i) _____

_____

(ii) _____

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EXAMINATION NO.: _____



2003

7. Explain the importance of each of the following processes in pasture establishment:

(i) inoculation

is the process of mixing legumes with the correct type of rhizobium bacteria before sowing.

(2 m

(ii) pelleting

is the practice of sticking a thin of material such as lime, gypsum rock phosphate around the seed.

(2 m

8. Explain briefly how food security is affected by each of the following:

(i) storage facilities

(2 m

(ii) planting early maturing varieties

(2 m

(iii) food processing technologies

(2 m

Section B (60 marks)

Answer any three questions in this section.

9. a. Explain any two factors that may cause seed dormancy.

(i)

(ii)

003 EXAMINATION NO.: _____ M012/1
Page 7 of 8

1. a. Explain any **five** ways in which Malawi's rapid population growth has led to environmental degradation.

(i) land scarcity to population increase

(ii)

(iii)

(iv)

(v)

(10 marks)

b. Explain any **five** ways in which Malawi's environmental degradation can be reduced.

(i) planting trees and grasses to maintain soil cover.

(ii) practicing agro foresty

(iii) Practicing crop rotation

(iv) ~~Practicing~~ Controlling bush fires

(v) Reducing the stocking rate to prevent overgrazing.

(10 marks)

EXAMINATION NO.: _____ M0120



2003

**12.** In agricultural production, farmers have to face many variables which are outside their control and such variables are known as risks and uncertainties.

a. Describe any five risks and uncertainties that farmers may face in Malawi.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(10 m

b. Explain any five ways in which farmers in Malawi may adjust to risks and uncertai

(i) _____

(ii) _____

(iii) _____

(iv) _____

# THE MALAŴI NATIONAL EXAMINATIONS BOARD

## 2004 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

Thursday, 4 November

Subject Number: M012/II

Time Allowed: 2 hour sessions
8:30 am onwards

## PAPER II
(100 marks)

Practical

**Instructions**

1. **This paper contains 4 pages. Please check.**
2. Answer **all** questions using the Answer Book provided. Each question carries 20 marks. The marks are indicated against each section of the question.
3. Write your **Examination Number** on **all** pages of your Answer Book.
4. At the end of the examination, hand in your Answer Book to the invigilator.

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1. You are provided with an animal product labelled Z.
   a. Identify the product. (1 mark)
   b. Mention any three by products which can be produced from product Z. (2 marks)
   c. Name any three farm animals which supply product Z. (3 marks)
   d. Explain any two nutritional values of specimen Z in the human body. (4 marks)
   e. Explain any three ways in which the quality of product Z may be improved. (6 marks)
   f. Describe any two ways in which a farmer may stimulate the production of product Z. (4 marks)

2. You are provided with specimens labelled M and N representing two groups of fertilizers.
   a. Identify the two groups of fertilizers represented by the specimens M and N. (2 marks)
   b. Briefly explain any three advantages of the group of fertilizer labelled M over the group labelled N. (6 marks)
   c. Describe any two problems associated with the use of the specimen labelled M. (4 marks)
   d. (i) A farmer has 5 hectares of land on which maize is grown. Three bags of fertilizer per hectare each weighing 50 kg were applied. Assuming the fertilizer contains 27% nitrogen, calculate the total amount of nitrogen applied on this land. (5 marks)
      (ii) In what chemical form is the nitrogen absorbed by plants in **d.(i)**? (1 mark)
      (iii) Mention one economic problem associated with the use of specimen labelled N. (1 mark)
      (iv) Suggest any one solution to the problem mentioned in **d.(iii)**. (1 mark)

3. **Table 1** below shows information on land distribution among smallholder farmers. Use it to answer questions that follow.

| Land Holding Category (in hectares) | Percentages of Smallholders |
|---|---|
| Below 0.5 | 26 |
| 0.5 - 1 | 30 |
| 1.1 - 1.5 | 22 |
| 1.6 - 2 | 11 |
| 2.1 - 2.5 | 5 |
| 2.6 - 3 | 3 |
| over 3 | 4 |

   a. Draw a bar graph of the land holding category of 0.5 to 2 hectares. (8 marks)
   b. If the area has a total of 300 smallholder farmers, calculate the number of smallholder farmers who own land between 1.6 to 2 hectares. (3 marks)
   c. Explain one effect of holding less than 1 hectare of land on each of the following:
      (i) food production. (2 marks)
      (ii) economic development of the country. (2 marks)

3. **(Continued)**

d. State any **two** roles estates can play in increasing food production. (2 marks)

e. (i) What type of land tenure is normally associated with smallholder farmers? (1 mark)

(ii) State **one** way in which a smallholder farmer acquires the type of land mentioned in **e.(i).** (1 mark)

(iii) Give any **one** disadvantage of the land tenure system mentioned in **e.(i)** (1 mark)

The **figure** below is a soil triangle. Use it to answer the questions that follow.

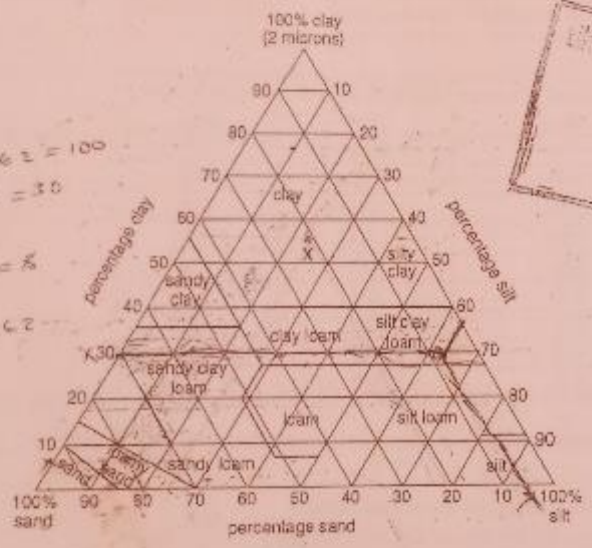


**Diagram of a soil triangle**

a. Identify the type of soil which has the following proportions of soil particles:

(i) 30% clay, 8% sand and 62% silt. (1 mark)

(ii) 8% clay, 80% sand and 12% silt. (1 mark)

(iii) Which of the soils mentioned in **a.(ii)** is

(1) likely to be more acidic? Explain the reason for your answer. (3 marks)

(2) likely to have high proportion of nutrients? Explain the reason for your answer. (3 marks)

b. (i) From the soil triangle, what are the proportions of sand and clay on the point marked **X**? (2 marks)

Continued/...

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Lilongwe

2004

4. b. (Continued)

(ii) Describe the soil in the area marked X in terms of

(1) particle size = big particles = sand
(2) root penetration = difficult = clay.

c. (i) Explain the relationship between soil texture and porosity.

(ii) Explain any two ways of improving soil porosity.

5. **Table 2** below shows yields obtained on an experimental plot for different varieties of maize and quantity of manure applied. Use it to answer questions which follow.

| Farm Yard Manure (kg) | Hybrid Maize (kg) | Local Maize (kg) |
|---|---|---|
| 0 | 900 | 700 |
| 100 | 1 000 | 800 |
| 200 | 1 100 | 900 |
| 300 | 1 250 | 1 000 |
| 400 | 1 400 | 1 200 |
| 500 | 1 500 | 1 300 |
| 600 | 1 600 | 1 400 |
| 700 | 1 700 | 1 400 |
| 800 | 1 900 | 1 400 |

a. Draw a line graph on the two varieties of maize against farm yard manure.

b. (i) What was the aim of the experiment?
(ii) What was the control of the experiment?

c. From the graph, what yield was obtained from each variety for an application rate of 650 kg of farm yard manure?

d. From the graph, what advice should be given to a farmer on application of farm yard manure above 600 kg to:
(i) hybrid maize?
(ii) local maize?

e. Explain why hybrid maize performed better than local maize at the same farm yard manure application rates.

END OF QUESTION PAPER

NB: This paper contains 4 pages.

EXAMINATION NO.: _____ M012/I

Page 5 of 12

04

a. Name any **two** tillage implements which use human power.

(i) _____

(ii) _____ (2 marks)

b. Differentiate between mechanical and solar energy?

_____

_____

_____

_____ (2 marks)

c. State any **two** uses of fuel energy.

(i) _____

_____ (1 mark)

(ii) _____

_____ (1 mark)

a. State any **two** examples of gender biases on agricultural technology.

_____

_____ (2 marks)

b. Describe any **two** implications of gender biased application of agricultural technology.

_____

_____

_____

_____

_____

_____

_____

_____ (4 marks)

Hongwe Islamic Sec. School

Continued/...

EXAMINATION NO.:

Page 6 of 12

2004

8. Explain one role of each of the following agro-based industries in supporting the population.

a. Grain and Milling

Grain and Milling produces gramil, mil bread

(2 m

b. Malawi Disry Industries

They produce fresh milk and yog

(2 m

c. David Whitehead and Sons

They produce textiles

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EXAMINATION NO.: _____ M012/I
Page 7 of 12

## Section B (60 marks)

Answer **any three** questions from this section.

a. State any **four** scientific and technological innovations, in maize production, from planting to harvesting which ensure food security.

(i) Soil conservation and Drainage
(ii) plant and livestock Breeding.
(iii) Irrigation Technologies
(iv) Crop processing and food packaging

(4 marks)

b. Explain any **two** ways in which drought resistant crops ensure food security.

(i) Easy Storage. Crops like cassava and sweet potatoes can be left into the rigde and harvest when needed while millet are easily stored when harvest.

(ii) early maturing. Some crops mature early do not suffer when the growing season

(4 marks)

c. Explain any **two** ways in which fish farming may be used to ensure food security for a growing population.

(4 marks)

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Continued/...

EXAMINATION NO.: _____
Page 8 of 12

2004

9. (Continued)

d. Explain any two ways in which proper food storage ensures food security for the growing population.

proper food storage is critical in food
It is possible to harvest alot of food
in the end of the year become not food se
sufficiency when that food is not propery
Availability of food through
the year.

e. Explain any two ways in which crop diversification promotes food security.

Mixed cropping

Relay cropping

10. a. Explain any two reasons for keeping goats.

- goats are source of income. when
there are mature the farmer is ab
to sell them to find an income
- goats are sometimes used for food
the family

EXAMINATION NO.: _____ M012/1
Page 9 of 12

(Continued)

b. Explain any **two** qualities of a good goat house.

(i) Strongly built to prevent predators.

(ii) easy and cheap to construct should be well ventilated and well-lit.

(4 marks)

c. Explain **two** feeding habits of goats.

(i) Goats are browsers than grazers

(ii) They like trees barks, leaves and herbs

(4 marks)

d. State **four** symptoms of phneumonia in goats.

(i) nasal discharges

(ii) loss of appetite

(iii) coughing

(iv) difficult breathing

(4 marks)

e. Explain any **two** ways of controlling phneumonia in goats.

(i) Treat with antibiotics

(ii) provide plenty of water and palatable feed.

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P.O. Box 2413
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(4 marks)

Continued/...

EXAMINATION NO.: _____



2004

11. a. Explain any five barriers to trading at the international level.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

b. Describe any five ways in which international trade in agricultural commodities important.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

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EXAMINATION NO.: _____ M012/I

Page 11 of 12

6

a. Explain any **five** ways in which fruits are important.

(i) fruits ~~they~~ provide nutrients to a human body

(ii) fruits ~~th~~ are source of Income. They help to how the farmer can can sell and get profit on it

(iii) other fruits are source of medicine as they make humans to heal from a disease

(iv)

(v)

(10 marks)

b. Describe any **five** husbandry practices which should be followed when establishing a mango orchard.

(i)

(ii)

(iii)

Lilongwe Islamic Sec. School
27 JAN 2005

Continued/...

EXAMINATION NO.: _____



2004

12. b. (Continued)

(iv) _____

_____

_____

(v) _____

_____

_____

END OF QUESTION PAPER

NB: This paper contains 12 pages.

Ulengque Islamic Sec. School
27 JAN 2005

EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2006 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

**Subject Number: M012/I**
**Time Allowed: 2 hours**
**1:00 – 3:00pm**

**Monday, 23 October**

## PAPER 1

**(100 marks)**

**Instructions**

1. **This paper contains 12 pages. Please check.**
2. Answer **all eight** questions in **Sections A** and any **three** questions in **Section B** in the spaces provided. The maximum number of marks for each answer is indicated against each question.
3. Remember, you are required to answer **three questions** only in Section B.
4. Write your **Examination Number** at the top of this question paper and on all other sheets.
5. Hand in your question paper to the invigilator when time is called to stop writing.

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EXAMINATION NO. _____ M012/1

Page 2 of 12

2006

## SECTION A (40 marks)

**Answer all eight questions in this section**

1. a. Name **one** sucking insect pest of mangoes.

_____

**(1 mark)**

b. Explain any **one** way in which the insect pest named in 1(a) can damage mangoes.

_____

_____

_____

_____

**(2 marks)**

c. Explain any **one** way of controlling sucking insect pests in mangoes.

_____

_____

_____

_____

**(2 marks)**

2. Explain any **two** ways in which participation of female farmers in agricultural development can be improved.

(i) _____

_____

_____

_____

**(2 marks)**

(ii) _____

_____

_____

_____

**(2 marks)**

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3. Explain **one** effect of each of the following factors on agricultural production:
   (i) land degradation

   _____
   _____
   _____
   _____

   **(2 marks)**

   (ii) pollution of rivers

   _____
   _____
   _____

   **(2 marks)**

   (iii) Food insecurity in a family

   _____
   _____
   _____
   _____

   **(2 marks)**

4. A farmer established a grass pasture using the following information:

| | | |
|---|---|---|
| seed size | = | 200,000 seeds/kg |
| purity | = | 75% |
| germination | = | 50% |

If the expected plant population was 600,000 plants per hectare, calculate seed rate of the grass pasture. Show your working.

_____
_____
_____
_____
_____
_____

**(4 marks)**

Continued/...

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5. a. State any **one** advantage of colostrum to calves.

_____

_____

**(1 marks)**

b. Explain **one** way in which each of the following factors would affect milk yield:

(i) age of the animal

_____

_____

_____

_____

**(2 marks)**

(ii) milking technique

_____

_____

_____

_____

**(2 marks)**

6. Describe any **three** effects of population distribution on the marketing of agricultural products.

(i) _____

_____

_____

_____

_____

_____

**(2 marks)**

(ii) _____

_____

_____

_____

_____

_____

6 Continued

(iii) _____

_____

_____

_____

(2 marks)

7. a. State any **two** ways in which population policies in Malawi promote agricultural development.

(i) _____

_____

_____

(ii) _____

_____

_____

(2 marks)

b. Explain **two** ways in which equitable land distribution is important in Malawi.

(i) _____

_____

_____

_____

_____

(ii) _____

_____

_____

_____

_____

(4 marks)

Continued...

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8. Form **four** students conducted an agricultural experiment to find out the effect of different rates of fertilizers on maize yield.

a. What was the variable in this experiment?

_____

_____

_____

**(1 mark)**

b. What was the control of the experiment?

_____

_____

_____

**(1 mark)**

c. Explain any **one** observation that could have been recorded during this experiment.

_____

_____

_____

_____

**(2 marks)**

## SECTION B (60 marks)

**Answer any three questions from this section.**

9. a. Describe the processes involved in propagating plants using each of the following methods:

(i) layering

_____

_____

_____

_____

_____

_____

**(2 marks)**

Continued/...

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9 a. continued

(ii) budding

_____

_____

_____

_____

(2 marks)

b. Explain each of the following advantages of vegetative propagation:

(i) ensuring genetic uniformity

_____

_____

_____

_____

(2 marks)

(ii) ensuring early maturity of plants

_____

_____

_____

_____

(2 marks)

c. State **four** disadvantages of vegetative propagation.

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

(iv) _____

_____

(4 marks)

Continued/…

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2006
9 Continued

d. Explain the difference between runners and rhizomes.

_____
_____
_____
_____
_____
_____

(4 marks)

e. Explain **one** way in which each of the following agricultural principles help to increase crop production:

(i) substitution of inputs

_____
_____
_____
_____

(2 marks)

(ii) comparative advantage

_____
_____
_____
_____

(2 marks)

10. a. Describe any **two** management practices a farmer should provide to a cow during gestation period.

(i) _____
_____
_____
_____

(ii) _____
_____
_____
_____

EXAMINATION NO.: _____

M012/1

2006

Page 9 of 12

**10 Continued**

b. Describe any **two** characteristics of a good dairy cow.

(i) _____

(ii) _____

**(4 marks)**

c. Describe each of the following breeding systems in cattle:

(i) out breeding

_____

**(2 marks)**

(ii) cross breeding

_____

**(2 marks)**

d. State any **four** symptoms of mastitis in a cow.

(i) _____

(ii) _____

(iii) _____

(iv) _____

**(4 marks)**

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EXAMINATION NO.: _____ M012/1

2006 Page 10 of 12

10 Continued

e. Explain any **two** ways of controlling mastitis in a cow.

(i) _____

(ii) _____

**(4 marks)**

11. a. Describe any **five** types of soil structure.

(i) _____

(ii) _____

(iii) _____

(iv) _____

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EXAMINATION NO.: _____

2006 Page 11 of 12 M012/1

11 Continued

(v) _____

**(10 marks)**

b. Explain any **five** characteristics of soil that make it suitable for crop production.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

**(10 marks)**

12. a. Describe any **five** factors that should be considered when mechanising a farm.

(i) _____

(ii) _____

**12 Continued**

(iii) _____

(iv) _____

(v) _____

**(10 marks)**

b. Explain any **five** advantages of mechanisation.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

**(10 marks)**

**END OF QUESTION PAPER**

**NB: This paper has 12 pages.**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2007 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

St Patrick's Sec. School
11 MAY 2007
P.O. Box 2413
Lilongwe

Friday, 12 October

Subject Number: M012/II

Time Allowed: $1\frac{1}{2}$ hour sessions
8:30 am onwards

## PAPER II
(60 marks)

Practical

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

### Instructions

1. **This paper contains 8 pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. At the end of the examination, hand in your paper to the invigilator.
5. In the table provided on this page, tick against the question number you have answered.

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Turn over

EXAMINATION NO.: _____

Page 2 of 8

2007

1. You are provided with two soil samples labelled Y and Z.

a. Add a few drops of water to each of the two soil samples. Mould the wet sa and record any five observations.

| Soil sample Y | Soil sample Z |
|---|---|
| | |
| | |
| | |
| | |
| | |

(5

b. State one effect of the characteristics observed in each of the soil samples o cultivation.

Soil sample Y

_____

_____

(

Soil sample Z

_____

_____

c. (i) According to the effects in 'b', in which of the soil samples would manure be recommended?

_____

(ii) Explain your answer to c.(i).

_____

2. You are provided with a cassava stem.

   a. Explain **three** factors to consider when preparing an ideal planting material from the specimen.

      (i) _____

      (ii) _____

      (iii) _____

      (6 marks)

   b. Prepare the planting material based on the factors explained in (a). Draw and label any **two** parts of the prepared material.

      (4 marks)

Continued

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EXAMINATION NO.: _____

Page 4 of 8

2007

3. a. Describe a plan and expected observations for an experiment designed to test the "Effect of four types of feeds" given to laying hens.

Plan:

Expected Observations:

3. (Continued)

b. The **Table** below shows quantities of different feeds given to a 500 kilogramme dairy cow and milk yield. Use it to answer the questions that follow.

| Day | Roughages (kg) | Concentrates (kg) | Milk yield (kg) |
|---|---|---|---|
| 1 | 8 | 2.0 | 6 |
| 2 | 10 | 2.0 | 7 |
| 3 | 16 | 2.3 | 9 |
| 4 | 20 | 3.0 | 9 |
| 5 | 25 | 4.0 | 9 |
| 6 | 30 | 3.0 | 9 |

(i) Calculate the amount of roughage feed given/100 kg live weight of the dairy cow in the following days:

(1) **Day 1**

(2 marks)

(2) **Day 4**

(2 marks)

(ii) Calculate the amount of roughage feed to be given to the cow if the requirement for maintenance ration for a dairy animal is **3 kg** per**100 kg** live weight per day.

(3 marks)

Continued/...

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2007

3. b. (Continued)

(iii) Apart from giving roughages, why was it necessary to give concentrates to a dairy cow?

(iv) Why was it uneconomical to give 4 kilogrammes of concentrates to the cow on day 5?

4. a. Given the following information on marketing costs of mangoes at different levels of a marketing channel:

| | |
|---|---|
| transport costs for a retailer | K200.00 |
| displaying costs for the retailer | K100.00 |
| storage costs for the retailer | K400.00 |
| retailer's profit | K600.00 |
| transport costs for an itinerant trader | K400.00 |
| itinerant trader's profit | K500.00 |
| marketing price at a farm | K1000.00 |
| grading costs for a wholesaler | K200.00 |
| storage cost for the wholesaler | K350.00 |
| wholesaler's profit | K400.00 |

(i) Calculate the marketing price received by the wholesaler.

4. a. (Continued)

(ii) Calculate the marketing margin for the mangoes.

(4 marks)

b. A poultry farmer produced 3 500 eggs using commercial feed and sold each egg at K12.00. She expects to produce the same number of eggs and sell them at the same price after replacing the commercial feed with locally made feed.

**Additional Information**

1. Cost of commercial feed
   - 8 bags of layers' mash at K3 000.00 each
2. Cost of locally made feed
   - 8 bags of maize at K500.00 each
   - 2 bags of soya beans at K3 000.00 each
   - casual labour for processing feed at K1 000.00

Continued/...

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EXAMINATION NO.: _____



2007

4. b. (Continued)

(i) Prepare a partial budget for the farmer.

(ii) From the budget prepared in b.(i), state whether the farmer should change or maintain the feed.

_____

_____

(iii) Give a reason for your answer in b.(ii).

_____

_____

END OF QUESTION PAPER

NB: This paper contains 8 pages.

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2007 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Lilongwe Islamic Sec. School
21 NOV 2007
P.O. Box 2413
Lilongwe

Subject Number: M012/I

Tuesday, 23 October

Time Allowed: 2 hours
1:00 – 3:00 pm

## PAPER 1 (100 marks)

## Theory

**Instructions**

1. This paper contains 12 pages. Please check.
2. This paper has two sections, A and B. Section A has ten questions and Section B, four questions.
3. Answer **all** questions in the spaces provided.
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 | | | |
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| 6 | | | |
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| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| | | | |

EXAMINATION NO.: _____

Page 2 of 12

2007

Section A (60 marks)

Answer all the ten questions in this section.

1. a. Define "soil salinity".

Is the condition of a soil that is associated with accumulation of soluble salts

(1 mark)

b. Explain one way in which irrigation can cause soil salinity.

Irrigating the soil using poor quality water (high level of salts)

(2 marks)

c. Explain one way in which each of the following factors can influence the amount of water applied to a crop:

(i) crop water requirement

(2 marks)

(ii) soil texture

(2 marks)

:007

1. Describe **one** way in which each of the following legislative measures can help to control pests and diseases:

a. "Prohibition"

(2 marks)

b. "Notification order"

(2 marks)

3. a. (i) Name the type of land drainage ideal for a farm where an ox-drawn plough is used.

(1 mark)

(ii) Explain your answer in a.(i).

(2 marks)

b. Explain **two** ways in which leaching of cations can affect the nutrient status of the soil.

(i) Soluble salts are leached down the soil profile not are available for plant absorption hence a low in nutrients status

(ii)

(4 marks)

Continued/...

EXAMINATION NO.: _____



2007

4. a. Explain one way in which each of the following enterprises can benefit from fish

(i) crop production

_____

_____

_____

(2 m

(ii) beef production

_____

_____

_____

(2 m

b. Explain any one way in which HIV and AIDS can limit contribution of women to agricultural production.

_____

_____

_____

_____

(2 m

5. Explain any three ways in which a dairy farmer can ensure production of clean milk on a farm.

(a) _____

_____

_____

(b) _____

_____

_____

(c) _____

_____

a. State any two functions of sulphur in crops.

(i) _____

(ii) _____

(2 marks)

b. Describe any two deficiency symptoms of sulphur in crops.

(i) _____

(ii) _____

(4 marks)

c. Name any one inorganic fertilizer that can be applied to soil to correct sulphur deficiency in crops.

_____

(1 mark)

7. Explain one way in which each of the following agricultural services ensures food security for the growing population:

a. seed technology

_____

(2 marks)

b. provision of farm inputs

_____

(2 marks)

Continued/...

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EXAMINATION NO.

M0121

Page 6 of 12

2007

8. a. State one way in which resources are used in each of the following agricultural activities:

(i) trading

_____

_____ (1 mark)

(ii) marketing

_____

_____ (1 mark)

b. Explain any two ways of promoting trading at community level.

(i) _____

_____

_____

(ii) _____

_____

_____ (4 marks)

Continue

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9. A farmer had the following assets at the beginning of September, 2006:

- 10 hectares of land valued at K50 000.00
- 100 bags of maize valued at K500 000.00
- 200 broilers valued at K100 000.00
- 20 goats valued at K16 000.00
- 20 bags of feed valued at K60 000.00

Prepare an inventory record for the farmer.

(7 marks)

Continued/...

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EXAMINATION NO.: _____



2007

10. a. State any two ways in which agricultural experimentation can help to improve agricultural production.

(i) _____

(ii) _____

(2 mark

b. Explain any one role of each of the following principles in agricultural experimentation

(i) replication of experiments

_____

(2 mar

(ii) use of a control

_____

(2 mar

EXAMINATION NO.:

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2008 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

Subject Number: M012/II

Friday, 10 October

Time Allowed: 1½ hour sessions
8:30 am onwards

## PAPER II
(60 marks)

Practical

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

### Instructions

1. This paper contains 8 pages. Please check.
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. At the end of the examination, hand in your paper to the invigilator.
5. In the table provided on this page, **tick** against the question number you have answered.

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Turn over

1. You are provided with the following:

- 2 specimens labelled **P** and **Q**
- iodine solution
- 2 pieces of clear white paper
- a dropper

a. Take half of each of the specimens labelled **P** and **Q**. Add two drops of iodine solution to each of the specimens. Observe and record the results.

**Specimen P**

_____

_____

**(1 mark)**

**Specimen Q**

_____

_____

**(1 mark)**

b. (i) Which of the two specimens would be used as a source of carbohydrates for pigs?

_____

**(1 mark)**

(ii) Explain your answer in **b.(i)**.

_____

_____

_____

**(2 marks)**

c. (i) Rub each of the remaining specimens against the white pieces of paper provided. Observe and record the results.

_____

_____

_____

**(2 marks)**

(ii) From the results, state **three** ways in which agro-industries can increase value of specimen **Q**.

_____

_____

_____

_____

_____

**(3 marks)**

Continued/...

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2. You are provided with the following materials:

- fertilizer samples labelled **Y** and **Z**
- water in two clear containers

a. Put each of the fertilizer samples in the separate containers of water at the same time. Shake the contents.

Observe and record what happens.

**Fertilizer sample Y**

_____

_____

_____

**(1 mark)**

**Fertilizer sample Z**

_____

_____

_____

**(1 mark)**

b. (i) Which fertilizer sample would be recommended for the following areas?

(1) high rainfall areas

_____

**(1 mark)**

(2) low rainfall areas

_____

**(1 mark)**

(ii) Explain each of the answers in **b.(i)**.

_____

_____

_____

_____

_____

_____

**(4 marks)**

c. (i) If a farmer delayed applying fertilizer to a crop, which of the fertilizer samples would be suitable?

_____

**(1 mark)**

(ii) Give a reason for your answer in **c.(i)**.

_____

_____

**(1 mark)**

Continued/...

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EXAMINATION NO.: _____



2008

3. a. A Form 4 class intends to carry out an experiment to find the appropriate rate of Urea on maize production. The class teacher advises them to use the following information:

A

| Treatments | Rate of Urea/ha |
|---|---|
| 1 | 0 kg |
| 2 | 40 kg |
| 3 | 50 kg |
| 4 | 120 kg |
| 5 | 160 kg |

B Random Number Table

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 8 | 5 | 9 | 4 | 2 | 6 | 7 |

(i) In the experiment, state:

(1) the variable.

_____

(2) the control treatment.

_____

(ii) Using the Random Number Table, design the experiment in three blocks.

EXAMINATION NO.: _____ M012/II

Page 5 of 8

08

a. (Continued)

(iii) Why should the students use more than one block?

_____

_____

_____ (2 marks)

b. Table 1 shows a type of production record for groundnuts kept by Mrs Zabwera. Use it to answer the questions that follow.

Table 1

| Date | Work done | Number of persons | Number of days worked |
|---|---|---|---|
| 07/01/08 | Planting | 3 women<br>2 children | 1 |
| 20/01/08 | 1st weeding | 5 men<br>3 women<br>3 children | 2 |
| 06/02/08 | 2nd weeding | 4 men<br>1 child | 1 |

(i) Name the type of the production record. (1 mark)

_____

(ii) Calculate the total number of man-days for the 1st weeding.

(4 marks)

(iii) Assuming the farmer had a constant supply of **9 man-days** everyday, calculate the labour surplus or short fall for the two days of the 1st weeding.

(2 marks)

Males = (1 man unit × 25) = 25 man-days for work

females = (0.7 man-day × 25)

children = (0.3 man-day × 25)

Continued/...

EXAMINATION NO.: _____

Page 6 of 8

2008

3. b. (Continued)

(iv) Explain two ways in which the record is important.

_____

_____

_____ (2 m

_____

_____

_____ (2 m

4. a. Table 2 shows reproductive cycles of four types of farm animals. Use it to answer the questions that follow.

Table 2

| Type of Animal | Length of oestrus cycle (days) | Duration of oestrus cycle (hours) | Length of gestation (days) |
|---|---|---|---|
| Cow | 21 | 18 | 283 |
| Nanny | 21 | 36 | 150 |
| Sow | 21 | 48 | 115 |
| Ewe | 17 | 36 | 150 |

(i) Which animal has the longest heat period?

_____ (1 m

(ii) Explain one advantage of having a longer heat period.

_____

_____

_____ (2 m

(iii) A cow was on heat on 27th May 2008 but was not served.

(I) State any three ways in which a farmer would have known that the cow was on heat.

_____

_____

_____

EXAMINATION NO: _____ M01/2/U

Page 7 of 8

(iii) (Continued)

(2) What was the next appropriate date for serving the cow? Show your working.

(2 marks)

(iv) A farmer plans to have his ewes give birth on 31st December 2009.

(1) When should he allow the ewes to mate? Show your working.

(2 marks)

(2) Explain one advantage of planning to have the ewes lamb on 31st December 2009.

(2 marks)

Continued/...

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EXAMINATION NO.: _____



2008

4. **(Continued)**

b. **Table 3** shows quantity and quality of two grass pastures. Each grass pasture was grown on three hectares of land. Use it to answer the questions that follow.

Table 3

| Grass pasture | Dry matter (kg/ha) | Crude protein (%) |
|---|---|---|
| X | 100 | 4.0 |
| Y | 120 | 3.6 |

(i) Calculate the crude protein yield of each of the grass pastures.

Grass pasture X

(2 m

Grass pasture Y

(2 m

(ii) Explain two ways in which calculation of crude protein yield of the two grass pastures is important to the livestock farmer.

(2 m

(2 m

END OF QUESTION PAPER

**NB: This paper contains 8 pages.**

**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form **except** for **Question 12**.

11. Explain any **five** ways in which depth of soil affects plant growth and development.

(10 marks)

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EXAMINATION NO.: _____



2008

12. Mr Bamusi bought Irish potatoes from Mr Chitsulo's farm and sold them all to Ndatherapano Trading Company. The Irish potatoes were later bought by vendors who in turn, sold them to different households in the city.

Produce a marketing channel for the Irish potatoes. In the marketing channel include:

a. names of individuals involved

b. one function for each marketing agency involved.

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EXAMINATION NO.: _____ M012/1

2008

Page 11 of 12

13. A farmer has five hectares of land with the following enterprises: maize, beans, poultry and fish in a pond.

Describe how the farmer can combine the enterprises in order to reduce costs of production and maximise profits.

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EXAMINATION NO.: _____



2008

14. A farmer keeps local breeds of cattle and goats. He has the following resources and services at his disposal: large arable land, dambo land; a research station and a veterinary station. Despite having these resources and services, he faces perpetual poverty and food insecurity.

Explain how the farmer can use the resources and services available to overcome his problems.

EXAMINATION NO.:

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2009 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Chingwe Islamic Sec. School
20 OCT 2009
P.O. Box 2413
Lilongwe

Subject Number: M012/I

Tuesday, 20 October

Time Allowed: 2 hours
1:00 – 3:00 pm

## PAPER 1 (100 marks)

Instructions

- This paper contains 12 pages. Please check.
- This paper has two sections, A and B. Section A has ten questions and Section B, four questions.
- Answer all questions in the spaces provided.
- Write your **Examination Number** on all pages.
- 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.

| Question Number | Tick if answered | Do not write in these columns | |
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| 14 | | | |
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EXAMINATION NO.: _____

Page 2 of 12

2009

## Section A (60 marks)

Answer all the ten questions in this section.

1. a. Name any two examples of ox-drawn implements.

   (i) _____

   (ii) _____ (2 mar

   b. Explain any one way in which each of the following technologies would ensure hig food production:

   (i) crop diversification

   _____

   _____

   _____ (2 mar

   (ii) use of herbicides

   _____

   _____

   _____ (2 m

2. a. A farmer observed the following signs of disease attack in goats:

   - swollen feet
   - difficulty in walking

   (i) Name the disease the goat was suffering from.

   _____ (1

   (ii) State one way of controlling the disease.

   _____

   _____

(Continued)

b. Explain **one** way in which each of the following management practices can improve goat production:

(i) keeping goats in a warm house

_____

_____

_____

**(2 marks)**

(ii) providing protein concentrates to goats

_____

_____

_____

**(2 marks)**

(iii) selecting an appropriate breed of goats

_____

_____

_____

**(2 marks)**

a. What does evaluation of results in a "Fertilizer Trial" on maize involve?

_____

_____

_____

_____

**(2 marks)**

b. Explain any **one** way in which a "Fertilizer Trial" on maize would contribute to food security.

_____

_____

_____

_____

**(2 marks)**

Continued/...

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EXAMINATION NO.: _____ M012/

Page 4 of 12

2009

4. a. Name any two examples of drought tolerant crops.

(i) _____

(ii) _____ (2 mar

b. Explain any two ways in which drought tolerant crops may ensure food security.

(i) _____

(ii) _____

(4 mar

5. The two tables below show designs of two cropping systems labelled **X** and **Y**. Use them answer questions that follow.

| | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Plot 1 | beans | maize | tobacco |
| Plot 2 | maize | tobacco | groundnuts |
| Plot 3 | tobacco | groundnuts | beans |
| Plot 4 | groundnuts | beans | maize |

**X**

| | Year 1 | Year 2 | Yea |
|---|---|---|---|
| Plot 1 | maize | maize | ma |
| Plot 2 | maize | maize | ma |
| Plot 3 | maize | maize | ma |
| Plot 4 | maize | maize | ma |

**Y**

a. Name the cropping systems represented by **X** and **Y**.

**X:** _____

**Y:** _____

EXAMINATION NO.: _____
Page 5 of 12 M012/I

(Continued)

b. (i) Which cropping system would help to control witch weed infestation?

_____ (1 mark)

(ii) Explain the answer in b.(i).

_____
_____
_____
_____
(2 marks)

c. (i) Which cropping system would allow a farmer to attain specialization of crop production?

_____ (1 mark)

(ii) Explain the answer in c.(i).

_____
_____
_____
_____
(2 marks)

a. Name any two textural classes of soil.

(i) Scindy
(ii) Clay
(2 marks)

b. Classify molybdenum, sulphur, boron and iron into "macro" and "micro" plant nutrients.

| Macro nutrients | Micro nutrients |
|---|---|
| | |
| | |
| | |
| | |

(4 marks)

EXAMINATION NO.: _____ M012/1

Page 6 of 12

2009

7. a. State any two characteristics of land that would influence choice of a crop enterprise.

(i) _____

(ii) _____ (2 marks)

b. You are provided with the following information:

- Farmer A had only enough money to buy either a bag of fertilizer or a bag of livestock feed.
- Farmer B had only enough land on which to grow either pasture or mangoes.
- Farmer A decided to buy a bag of livestock feed while Farmer B decided to grow pasture.

(i) State the opportunity cost for farmer A if a bag of fertilizer would have given him/her the highest profit.

_____

_____ (1 mark)

(ii) State the opportunity cost for farmer B if pasture had the lowest value.

_____

_____ (1 mark)

8. a. Explain two ways in which trading of farm produce at community level is important.

(i) _____

_____

_____

(ii) _____

_____

_____ (4 marks)

b. Explain any one way in which each of the following activities carried out on a farm can reduce marketing margins and increase profits:

(i) A farmer performing some of the marketing functions.

_____

_____

_____

(Continued)

(ii) A farmer selling farm produce through agricultural cooperatives.

(2 marks)

a. Name any two Agro-based industries that sell fertilizers to farmers.

(i) Optichem Limited

(ii)

(2 marks)

b. State any two ways in which processing of mangoes is important.

(i)

(ii)

(2 marks)

a. State any two points to consider when selecting a water source for an irrigation system.

(i) Type of crops to be grown on the land

(ii) Amount of water available at that time

(2 marks)

b. Explain two environmental problems that flood irrigation may cause.

(i)

(ii)

(4 marks)

Continued/...

EXAMINATION NO.: _____



2009

12. (Continued)

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EXAMINATION NO:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2010 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

Wednesday, 28 July

Time Allowed: 2 hour sessions
8:30 am onwards

## PAPER II
(60 marks)

Practical

**Instructions**

1. **This paper contains 8 pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, **tick** against the question number you have answered.
5. At the end of the examination, hand in your paper to the invigilator.

| Question Number | Tick if answered | Do not write in these columns | |
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| 1 | | | |
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Turn over

EXAMINATION NO.: _____ M012/II

Page 2 of 8

2010

1. You are provided with specimen labelled P.

**Procedure**
Shell the specimen

a. Name the marketing function performed. (1 mark)

_____

b. Explain any two ways in which the function named in 'a' reduces marketing costs.

(i) _____

(ii) _____

(4 marks)

c. (i) Name the type of propagation if a farmer uses the shelled specimen for propagation.

_____ (1mark)

(ii) Give any two advantages and any two disadvantages of the type of propagation named in c (i).

**Advantages:**

_____ (2 marks)

**Disadvantages:**

_____ (2 marks)

Contin

2. You are provided with specimen labelled Q.

A farmer planted the specimen labelled Q in a field and a week later planted the shelled specimen in **Question 1** in the same field.

a. Name the farming system.

_____

**(1 mark)**

b. Explain any **three** advantages of the farming system named in '**a**'.

(i) _____

_____

_____

(ii) _____

_____

_____

(iii) _____

_____

_____

**(6 marks)**

c. Give any **two** agro-based industries that can use the specimen labelled Q as a raw material.

(i) _____

(ii) _____

**(2 marks)**

d. Name the **main** nutrient that an animal can get from feed made from the specimen labelled Q.

_____

**(1 mark)**

Continued/...

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EXAMINATION NO.: _____

Page 4 of 8

a. Figure 1 shows one of the experimental plots to find out the effect of irrigation on the yield of sorghum. Use it to answer the questions that follow.

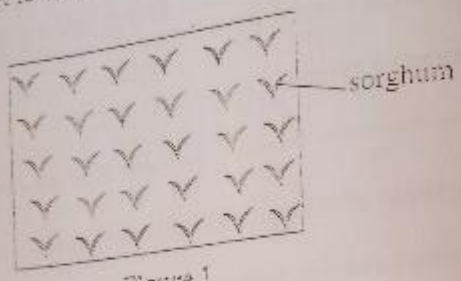


Figure 1

(i) Indicate on the figure by ticking all the sorghum plants that would be recommended for observation. (2 m

(ii) Give one reason for the recommendation in (i).

_____

_____

_____ (2 m

(iii) Explain the need for identifying a sample of sorghum plants for observation from the recommendation made in (i).

_____

_____

_____ (2 m

(iv) Assuming that the experiment was successful, explain any one way in which such an experiment would ensure sufficient food production.

_____

_____

_____ (2 m

(v) Explain one way in which reporting on such experiments would increase sorghum production.

_____

_____

_____

_____

(continued)

3. b. The table below shows a health record on cattle production for the 2008/2009 farming season. Use it to answer the questions that follow.

| Date | Symptoms of disease | Drugs used | Cost of treatment |
|---|---|---|---|
| 7/05/09 | - high fever<br>- excessive salivation<br>- lameness | - | - |
| 15/06/09 | - loss of appetite<br>- coughing<br>- difficult breathing<br>- nasal discharge | antibiotic | K500 |
| 20/08/09 | - swollen udder<br>- clots in milk | tetracycline | K700 |

(i) Name the disease that attacked the cattle on **07/05/09**.

_____

**(1 mark)**

(ii) What is the cause of the disease named in (i)?

_____

**(1 mark)**

(iii) Give **one** reason for **not** administering drugs to the diseased cattle on **07/05/09**.

_____

_____

**(1 mark)**

(iv) Calculate the cost of treatment incurred during the 2008/2009 farming year.

**(2 marks)**

Continued/...

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2010

3. b. (continued)

(v) Give three ways of preventing the disease shown by the symptoms on 20/09/...

_____

_____

_____

_____

_____ (3 m...

(vi) Name any other two farm animals that can be attacked by the disease shown by the symptoms on 07/05/09.

_____ (2 m...

4. a. A farmer kept the following record. Use it to answer the question that follows:

- harvested 52 bags of maize
- sold 40 bags of maize at K2,500/bag
- the family consumed 12 bags of maize
- bought 6 bags of fertilizer at K5,500/bag
- sold maize stalks for K4,000
- paid casual labour for K36,000
- bought 20 kg maize seed at K150/kg

Calculate the farmer's profit or loss.

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b. Figure 2 is a diagram of a farm implement. Use it to answer the questions that follow.

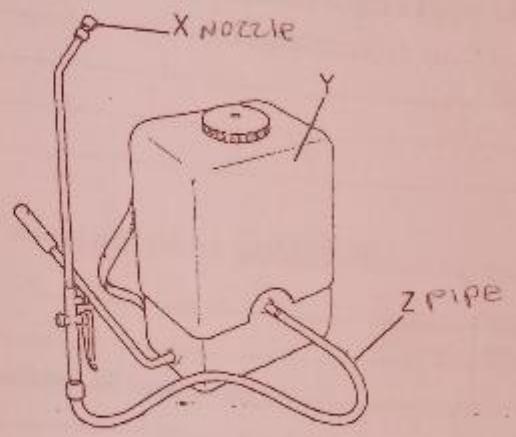


Figure 2

(i) Name the farm implement.

A Sprayer

(1 mark)

(ii) Name the parts labelled X, Y and Z.

X NOZZLE

Y

Z pipe

(3 marks)

(iii) State one function of the part labelled X.

for releasing chemicals

(1 mark)

(iv) State any one form of power that can be used to operate the farm implement.

(1 mark)

Continued/...

2010

4. (continued)

(v) Explain one way in which use of the farm implement can improve beef production.

_____
_____
_____
_____ (2 marks)

(vi) Explain any one way of maintaining the farm implement.

_____
_____
_____
_____ (2 marks)

END OF QUESTION PAPER

This paper contains 8 pages.

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EXAMINATION NO:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2010 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

(100 marks)

Subject Number: M012/I

Monday, 9 August

Time Allowed: 2 hours
1:00 – 3:00 pm

## PAPER I

**Instructions**

1. **This paper contains 12 pages. Please check.**
2. This paper has **two** sections, A and B. Section A has **ten** questions and Section B, **four** questions.
3. Answer **all** questions in the spaces provided.
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 | |
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| 14 | | | |
| | | | |

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Turn over

EXAMINATION NO.: _____

Page 2 of 12

2010

## Section A (60 marks)

Answer all the ten questions in this section.

1. a. Give any two varieties of mangoes.

   (i) _____

   (ii) _____

   b. A crop showed signs of interveinal chlorosis. Use this information to answer the questions that follow.

   (i) Name the plant nutrient that was deficient.

   _____

   (ii) State two ways of correcting the deficiency.

   _____

   _____

   _____

   _____

2. a. Name any two marketing agencies that can take milk from the producer to the consumer.

   (i) _____

   (ii) _____

   b. Describe any two effects of population distribution on marketing.

   (i) _____

   _____

   _____

   (ii) _____

   _____

   _____

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3. a. Give any **three** examples of exotic grass pastures in Malawi.

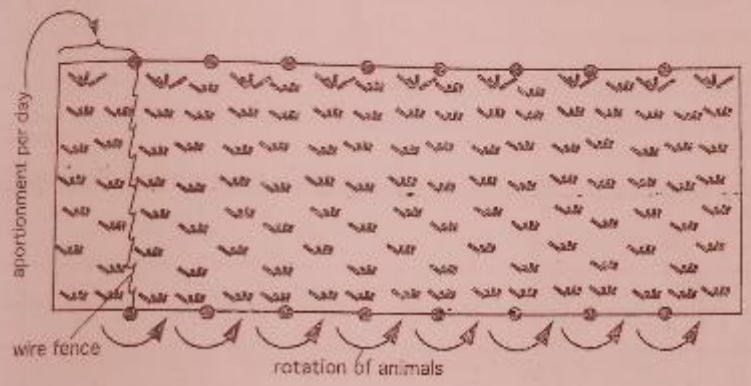
(i) _____

(ii) _____

(iii) _____

**(3 mark)**

b. The figure below is a diagram of one of the systems of grazing animals. Use it to answer the questions that follow.




(i) Name the system of grazing animals.

_____

**(1 mark)**

(ii) Explain any **two** advantages of the system of grazing animals.

_____

_____

_____

_____

_____

_____

**(4 marks)**

(iii) Why is the system of grazing animals **not** commonly used in Malawi?

_____

_____

**(1 mark)**

Continued/...

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EXAMINATION NO.: _____

Page 4 of 12

2010

4. a. Give any two sources of fuel energy on smallholder farms.

(i) _____

(ii) _____

b. State two environmental problems that may be caused by the sources of fuel energy given in "a".

(i) _____

(ii) _____

c. Explain one effect of each of the environmental problems stated in "b" on agricultural production.

(i) _____

(ii) _____

5. a. Explain how each of the following policies on agriculture can assist in national development:

(i) population policy

_____

(ii) equitable land distribution policy

_____

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5. **(Continued)**

b. Explain **two** ways in which gender equity can lead to high agricultural production.

(i) _____

(ii) _____

**(4 marks)**

6. a. State any **one** way in which soil pH can be modified.

Application of organic matter

**(1 mark)**

b. Explain any **one** way in which soil pH affects plant growth.

**(2 marks)**

7. Classify the following livestock feeds into **roughages** and **concentrates**: silage, bone meal, hay, maize meal and cotton seed cake.

| **roughages** | **concentrates** |
|---|---|
| hay | bone meal |
| cotton seed cake | maize meal |
| silage | |

**(5 marks)**

Continued/...

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EXAMINATION NO.: _____ M012

Page 6 of 12

2010

8. a. Give any two examples of production records on a sheep farm.

(i) _____

(ii) _____

b. Give any two reasons for keeping production records on a sheep farm.

(i) _____

(ii) _____

c. State any two factors to consider when selecting enterprise combination.

(i) The yields which are resistance from diseases

(ii) _____

9. a. Give any two pests of mangoes.

(i) _____

(ii) _____

9. b. Explain any **one** way in which each of the following practices on a farm can reduce pest attack:

(i) storing produce in air-tight facilities

_____

_____

_____

(2 marks)

(ii) closed season

_____

_____

_____

(2 marks)

10. a. Give any **two** breeds of sheep suitable for meat production.

(i) _____

(ii) _____

(2 marks)

b. Explain any **one** way in which knowledge of gestation is important in sheep production.

_____

_____

_____

(2 marks)

Continued/...

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EXAMINATION NO.: _____ M012/1

Page 8 of 12

2010

## Section B (40 marks)

Answer all the four questions in this section. Your answers should be in an essay form except for Question 12.

11. Explain any five ways in which organic farming would ensure food security.

12. With the aid of a well labelled diagram, describe the reproductive system of a bull.

Continued/...

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EXAMINATION NO.: _____ M012/1

Page 10 of 12

2010

12. (Continued)



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13. A teacher brought a sample of soil to a form four class. Using "**sieve method**", describe how the percentage of gravel, sand, silt and clay could be determined.

**(10 marks)**

Continued/...

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EXAMINATION NO.: _____

Page 12 of 12

**2010**

**14.** Farmers in a certain area have a serious problem of weeds in maize. Describe the "scientific" approach to experimentation that should be followed in order to overcome the problem.

END OF QUESTION PAPER

This paper contains 12

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2011 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

(100 marks)

Subject Number: M012/I

Tuesday, 12 July

Time Allowed: 2 hours
1:00 – 3:00 pm

## PAPER I

**Instructions**

1. **This paper contains 10 pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **four** questions.
3. Answer **all** questions in the spaces provided.
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 | |
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Turn over

EXAMINATION NO.: _____ M012/I

2011

Page 2 of 10

Section A (60 marks)

Answer all the ten questions in this section.

1. a. (i) Define the term "inbreeding".

_____

_____ (1 mark)

(ii) State one advantage of inbreeding.

_____

_____

_____ (1 mark)

b. Give any two breeds of cattle for dairy production.

(i) _____

(ii) _____ (2 marks)

2. a. Give any three ways in which trading of agricultural commodities is important at international level.

(i) _____

(ii) _____

(iii) _____ (3 marks)

b. Explain any two ways that can facilitate trading of agricultural commodities from one district to another.

(i) _____

_____

_____

(ii) _____

_____

_____

2011 EXAMINATION NO.: _____
Page 3 of 10 M012/I

3. a. The table below shows results of an experiment.

| Plot | Method of Weeding | Yield of maize (kg) |
|---|---|---|
| 1 | Chemical | 120 |
| 2 | Mechanical | 100 |

(i) What is the aim of the experiment?

(1 mark)

(ii) Give two reasons why the results would be unreliable.

(4 marks)

b. State any two disadvantages of chemical weed control.

(i) The chemicals can easily affect the soil ~~weeding~~ leading to improper growing of crops

(ii)

(2 marks)

4. a. (i) Name the organism that causes sheep pox.

(1 mark)

(ii) Give any two symptoms of sheep pox.

(2 marks)

Continued/...

2011

4. (Continued)

b. Explain one way in which each of the following practices is important in goat production:

(i) ear notching

(2 marks)

(ii) deworming

(2 marks)

5. A farmer bought a machine worth K10 000.00 to be used for shelling groundnuts.

a. Explain any one way in which each of the following practices would make the machine reach salvage value earlier:

(i) storing it under a tree shed

(2 marks)

(ii) overloading

(2 marks)

b. Using a reducing balance method, calculate the book value of the machine by the end of year two, given that the depreciation provision is 12% per year.

2011

6. a. List any **two** feed nutrients.

_____

_____

(2 marks)

b. Distinguish the terms "production ration" and "maintenance ration".

_____

_____

_____

_____

(2 marks)

7. a. Explain any **one** way in which each of the following practices may ensure food security:

(i) proper food storage

_____

_____

_____

(2 marks)

(ii) agroforestry

_____

_____

_____

(2 marks)

b. Explain **one** advantage of land drainage in crop production.

_____

_____

_____

(2 marks)

c. Give any **two** types of soil structure.

(i) Blocky

(ii) prismatic

(2 marks)

8. a. (i) Name the parasitic weed of maize.

_____

(1 mark)

(ii) Explain why growing maize in rotation with sorghum would not control the parasitic weed in **8.a.(i)**.

_____

_____

_____

(2 marks)

Continued/...

EXAMINATION NO.: _____



2011

8. **(Continued)**

b. State one advantage of classifying weeds.

_____ (1 mark)

c. Explain one way in which single plant selection can improve crop production.

_____ (2 marks)

9. Explain any one way in which each of the following practices can help to prevent land degradation.

a. strip cropping

_____ (2 marks)

b. tie ridging

_____ (2 marks)

10. Explain any two ways in which agricultural experimentation can help to improve beef production in Malawi.

_____ (4 marks)

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**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form except for **Question 12.**

11. Explain any **five** advantages of farm mechanization.

**(10 marks)**

Continued/

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EXAMINATION NO.: _____ M012/1

2011



12. With the aid of a well labelled diagram, describe how a farmer can produce oranges and lemons from the same tree using buds.

(10 marks)

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2011 EXAMINATION NO.: _____ M012/I
Page 9 of 10

13. Explain any five factors that affect nutrient status of the soil.

firstly parent materials this determines the type of minerals available soil developed from granite and sand stone gives rise to sandy soils which are low in nutrients.

Secondly leaching ~~at~~ ~~have~~ soluble salts are leached down the soil profile are not available for plants absorption hence low in nutrients status.

Another one is soil erosion is when soil is eroded nutrients are lost. hence the soil has low nutrients status.

In addition there is also nutrient uptake the plant nutrients are absorbed by plants from the soil's for growth if the crop residues are not ploughed back into the soil, nutrients are lost hence low nutrients status.

Lastly soil pH it influences availability of soil nutrients. soils with very low or high pH have low nutrients status because nutrients are fixed and not available e.g phosphorus in unavailable to low soil pH, it also influences soil pH ~~to~~ activities of nitrogen fixing bacteria.

EXAMINATION NO.: _____

2011



14. Farmers in a certain village have the following resources at their disposal:

- local chickens
- mikolongwe chickens
- fish pond
- small scattered farm holdings most of which are water logged

Describe how the farmers can use the available resources to increase agricultural production.

END OF QUESTION P

EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2011 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

Wednesday, 29 June

Time Allowed: $1\frac{1}{2}$ hour sessions
8:30 am onwards

## PAPER II
(60 marks)

## Practical

| Question Number | Tick if answered | Do not write in these columns | |
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| 1 | | | |
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Instructions

1. **This paper contains 8 pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, **tick** against the question number you have answered.
5. At the end of the examination, hand in your paper to the invigilator.

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2011

1. You are provided with a soil sample labelled W.

**Procedure**
Rub the soil sample between your fingers and thumb.

a. State the characteristic of the soil sample. (1 mark)

_____

b. Which physical property of soil is being determined in this experiment? (1 mark)

_____

c. Explain any four ways in which this experiment is important in crop production.

(i) _____

(ii) _____

(iii) _____

(iv) _____

(8 mar

2. You are provided with two samples labelled **X** and **Y**.

a. Which of these samples can be used as a planting material?

_____

**(1 mark)**

b. Explain any **three** problems associated with marketing of the sample labelled **Y**.

(i) _____

(ii) _____

(iii) _____

**(6 marks)**

c. Give any **three** ways of solving the problems explained in **(b)**.

(i) _____

(ii) _____

(iii) _____

**(3 marks)**

Continued/...

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1

a. A form four class would like to carry out an experiment to determine the best variety of mangoes for juice extraction. The varieties are: Dodo, Keitt, Kent and Anderson.

(i) Using latin square, design the experiment.

(6 marks)

(ii) What would be the control in this experiment?

_____

(iii) Give one reason for the answer in (ii). (1 mark)

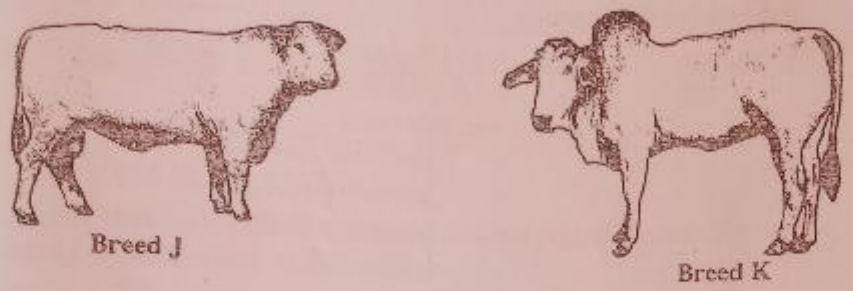
_____

_____

_____

(Continued)

b. The **Figure** below shows two breeds of cattle labelled **J** and **K**.



Breed J Breed K

(i) Which of the two breeds of cattle would be suitable for farmers in Malawi?

K

**(1 mark)**

(ii) Give **two** reasons for the answer in **(i)**.

It has elevated legs

**(4 marks)**

(iii) Explain any **three** ways in which farmers in Malawi would help the other breed to adapt to the local conditions.

(i) Cross breeding it allow the exotic one to have or to bring in characteritics which malawi has eg hieight

(ii) modifying the cattle keeping condition to suit the exotic ones

(iii) ensuring ~~of~~ ~~crop~~ proper training ~~of~~ farmers and special personel in proper production to select breeds.

**(6 marks)**

Continued/...

EXAMINATION NO.: _____ M012/0



2011

4. a. A farmer has one hectare of land on which he wants to grow maize instead of groundnuts.

Additional information

| | | | |
|---|---|---|---|
| 1. Maize: | (a) | Yield (kg/ha) | 3 000 |
| | (b) | Price (MK/kg) | 20 |
| | (c) | Variable costs: | |
| | | ◦ seed (MK/ha) | 1 000 |
| | | ◦ fertilizer (MK/ha) | 20 000 |
| | | ◦ pesticides (MK) | 1 700 |
| | | ◦ labour (MK) | 2 000 |
| | (d) | Fixed costs | 600 |
| 2. Groundnuts: | (a) | Yield (kg/ha) | 500 |
| | (b) | Price (MK/kg) | 300 |
| | (c) | Variable costs | |
| | | ◦ seed (MK/ha) | 4 000 |
| | | ◦ pesticides (MK) | 1 000 |
| | | ◦ labour (MK) | 2 000 |
| | (d) | Fixed costs | 10 000 |

(i) Prepare a complete budget for this farmer.

4. a. **(Continued)**

(ii) From the budget prepared, advise the farmer on what crop to grow.

_____

(iii) Give a reason for the answer in (ii). **(1 mark)**

_____

**(1 mark)**

b. The table below shows soil characteristics and rainfall pattern for three different areas labelled **A**, **B** and **C**.

| Area | A | B | C |
|---|---|---|---|
| Rainfall /annum (mm) | 600 | 900 | 1200 |
| Soil colour | dark | brown | red |
| Microorganisms count (g/cm$^3$ of soil) | 20 | 5 | 10 |
| Soil pH | 6.5 | 5 | 4 |

(i) Give any **three** factors that might have contributed to the differences in soil colour in the three areas.

_____

_____

_____

_____

_____

_____

**(3 marks)**

Continued/...

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2011

4. b. (Continued)

(ii) Explain the differences in the soil pH between areas A and C.

_____

_____

_____

_____ (2 marks)

(iii) Given tea and maize, which crop would be suitable for the following areas?

A: _____

B: _____ (2 marks)

(iv) Calculate the average rainfall for the three areas.

_____ (1 mark)

END OF QUESTION PAPER

NB: This paper contains 8 pages.

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EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2012 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/I

Monday, 2 July

Time Allowed: 2 hours
8:30 – 10:30 am

## PAPER I
(100 marks)

Instructions

1. This paper contains 12 pages. Please check.
2. This paper has two sections, A and B. Section A has ten questions and Section B, four questions.
3. Answer all questions in the spaces provided.
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 | |
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Turn over

Section A (60 marks)

Answer all the ten questions in this section.

1. a. Give any one farming activity that can destroy soil structure. (1 mark)

Using heavy machinery equipments on wet soil

b. State any two effects of good soil structure on crop production.

(i) The Crops grow well without difficulties

(ii) It holds water capacity

(2 marks)

2. a. Write down any three factors to consider when determining the frequency of irrigating crops.

(i) Type of Soil

(ii) Condition of Soil

(iii) Amount of rainfall

(3 marks)

b. Explain any one way in which each of the following irrigation problems can be solved:

(i) salt accumulation

(2 marks)

(ii) water-logging

3. a. Distinguish between "macro-nutrients" and "micro-nutrients".

Macro-nutrients these are the chemical elements required by plants in large quantities while Micro-nutrients these are the nutrients required in smaller quantities by plants for normal growth and development

(2 marks)

b. State any two functions of calcium in crops.

(i) _____

(ii) _____

(2 marks)

c. (i) Describe any one nutrient deficiency symptom of calcium in crops.

_____

(2 marks)

(ii) Name any one inorganic fertilizer that would control the nutrient deficiency symptom of calcium in crops.

_____

(1 mark)

4. a. Describe any one way in which fixation can cause depletion of plant nutrients from the soil.

_____

(2 marks)

Continued/...

EXAMINATION NO.: _____



2012

4. (Continued)

b. Explain any two ways in which living organisms can help to maintain plant nutrients in the soil.

(i) _____

(ii) _____

(4 marks)

5. The following average yields: 100 kg, 150 kg, 220 kg and 235 kg were obtained from an experiment on four varieties of maize M, N, O and P respectively.

a. Present the information in the form of a table.

(3 marks)

b. Describe how the data would be used to draw a conclusion about the experiment

_____

a. A farmer observed that a cow had a swollen and inflammed udder. Use this information to answer the questions that follow.

(i) Name the disease that the cow was suffering from.

_____

**(1 mark)**

(ii) State any one way of controlling the disease.

_____

_____

**(1 mark)**

b. Explain any **two** ways in which covering the floor of the "khola" with dry grass would improve beef production.

(i) _____

_____

_____

(ii) _____

_____

_____

**(4 marks)**

c. Give any **two** characteristics of cattle breeds selected for beef production.

(i) _____

(ii) _____ **(2 marks)**

A farmer reared cattle and grew sorghum in the same year. Use this information to answer the questions that follow.

a. What type of enterprise combination was practised by the farmer?

_____ **(1 mark)**

Continued/...

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EXAMINATION NO.: _____



2012

7. (Continued)

b. Explain any two ways in which the enterprise combination would reduce production costs for the farmer.

(i) _____

(ii) _____

(4 marks)

c. Explain any one way in which the enterprise combination may help to reduce land degradation.

_____

(2 marks)

8. The table below shows marketing costs for pineapples. Use it to answer the questions that follow.

| Marketing Channel | Charges (MK) | Market Price (MK) |
|---|---|---|
| 1. Farmer | - | 50 |
| 2. Middleman<br>• Transport | 50 | - |
| 3. Processing company<br>• Processing<br>• Canning<br>• Profit | 150<br>100<br>100 | - |
| 4. Retail<br>• Transport<br>• Advertising<br>• Profit | 50<br>50<br>200 | - |

a. What type of marketing channel is presented in the table?

_____

(Continued)

b. Calculate the total marketing costs.

(2 marks)

c. Calculate the marketing margin.

(3 marks)

Continued/...

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EXAMINATION NO.: _____



9. Explain any one way in which each of the following impact of HIV and AIDS affects agricultural development:

a. depleting farm capital

_____

_____

_____ (2 marks)

b. weakening the labour force

_____

_____

_____ (2 marks)

10. a. Define the term "land tenure".

_____

_____

_____ (1 mark)

b. Explain any two ways in which customary land tenure system affects agricultural development.

(i) _____

_____

_____

(ii) _____

_____

_____ (4 marks)

Continued

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**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form except for **Question 12**.

11. Explain any **five** ways in which weeds are harmful in crop production.

**(10 marks)**

Continued

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EXAMINATION NO.: _____ M012

1012

Page 10 of 12

12. Describe an experiment to determine the texture of a soil sample using sedimentation method.

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EXAMINATION NO.: _____

Page 11 of 12

M012/I

Explain any **five** ways of controlling diseases in sheep.

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EXAMINATION NO.: _____

2012

Page 12 of 12

14. A certain farming area has been experiencing problems of frequent dry spells within the growing season resulting in low crop production.

Explain any five ways that farmers can use to overcome the problem.

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EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2013 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/I

Monday, 1 July

Time Allowed: 2 hours
8:30 – 10:30 am

## PAPER I

(100 marks)

**Instructions**

1. **This paper contains 12 pages. Please check.**
2. This paper has **two** sections, A and B. Section **A** has **ten** questions and Section **B**, **four** questions.
3. Answer **all** questions in the spaces provided.
4. Write your **Examination Number** on **all** pages.
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EXAMINATION NO.: _____ M012/1



2013

SECTION A (60 marks)

Answer all the ten questions in this section.

1. a. Give any two aims of livestock improvement.

_____

_____

_____ (2 marks)

b. A farmer who keeps local breeds of cattle decides to import a Brahman bull in order to improve beef production in the herd.

(i) What method of livestock improvement is being planned?

_____ (1 mark)

(ii) Describe how the method can be used to improve beef production.

_____

_____

_____ (2 marks)

2. a. Name one animal drawn implement used for tilling the land.

_____ (1 mark)

b. State any three ways in which use of the animal drawn implements can ensure food security.

_____

_____

_____

_____

_____

(Continued)

d. Express the yield for Variety A from Plot I in kilogrammes per hectare.

(2 marks)

3. Define the term "pasture".

It is a grassland for

(1 mark)

b. State any two ways in which pasture is important in agriculture.

(2 marks)

c. Explain any two factors to consider when selecting an appropriate type of pasture species to grow.

(4 marks)

d. Give any two examples of legume pastures.

(2 marks)

Continued/...

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3. The **table below** shows results of an experiment on "Maize Variety Trial" conducted by form three students. Use it to answer the questions that follow.

| | VARIETY A | | VARIETY B | |
|---|---|---|---|---|
| **Plot** | 1 | 2 | 3 | 4 |
| **Yield (Kg/200 m²)** | 100 | 110 | 135 | 95 |

a. Calculate average yield for each variety.

**Variety A:**

**(1 mark)**

**Variety B:**

**(1 mark)**

b. Give **one** advantage of calculating the average yield in the experiment.

_____

_____

**(1 mark)**

c. (i) What conclusion can be drawn from the experiment?

_____

_____

**(1mark)**

(ii) Make **one** recommendation to the farmer from the conclusion.

_____

_____

State any **two** ways in which farmers can avoid losses brought about by risks and uncertainties.

_____

_____

_____

**(2 marks)**

A farmer has a choice to engage in one of the two enterprises **X** and **Y**. The details of the two enterprises per hectare are as follows:

| | Enterprise X | Enterprise Y |
|---|---|---|
| Total income | K300 000 | K300 000 |
| Cost of seed | K 10 000 | K 5 000 |
| Cost of fertilizer | - | K 20 000 |
| Cost of labour | K 30 000 | K 25 000 |

Show by calculation the enterprise the farmer should engage in.

**Conclusion:**

_____

_____

**(5 marks)**

Give any **one** factor that can lower soil pH.

_____

**(1 mark)**

Explain **one** way in which farmers can make loose soils suitable for crop production.

_____

_____

_____

**(2 marks)**

6. (Continued)

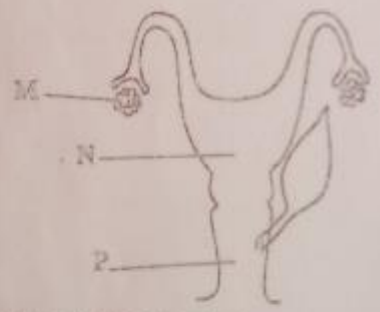
c. (i) State any two cultural methods of controlling weeds.

(2 marks)

(ii) Give any two advantages of cultural weed control.

(2 marks)

7. The figure below is a diagram showing the reproductive system of a cow. Use it to answer the questions that follow.




a. Name the parts labelled N and P.

N: _____ (1 mark)

P: _____ (1 mark)

b. Describe one feeding management practice that can improve the function of the part labelled M.

(2 marks)

a. State any **two** ways of enhancing involvement of women in decision making for agricultural activities.

_____

_____

_____

_____

**(2 marks)**

b. Give any **two** advantages of public land tenure system.

_____

_____

_____

_____

**(2 marks)**

Farmer **X** sold irish potatoes to vendors who in turn sold them to consumers. Farmer **Y** sold irish potatoes directly to consumers. Use this information to answer the questions that follow.

a. (i) Which of the **two** farmers made more profit?

_____

**(1 mark)**

(ii) Give a reason for the answer in **a(i).**

_____

_____

_____

**(2 marks)**

b. (i) To which marketing agency do the vendors in the transaction belong?

_____

**(1 mark)**

(ii) Give any **one** marketing function that can be performed by the agency in **b(i).**

_____

_____

**(1 mark)**

Continued/...

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13

0. a. A farmer grew maize, cassava and groundnuts in a rotation. Explain any one way in which the crop rotation sequence might have reduced each of the following:

(i) production costs for the maize enterprise

_____

_____

_____ (2 marks)

(ii) land degradation

_____

_____

_____ (2 marks)

b. State any two advantages and any two disadvantages of using pesticides in crop production.

Advantages

_____

_____

_____

_____ (2 marks)

Disadvantages

_____

_____

_____

_____ (2 marks)

Continued

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## SECTION B (40 Marks)

Answer all the **four** questions in this section. Your answers should be in an essay form except for **Question 12**.

12. Explain any **five** factors that can limit smallholder farmers in selecting appropriate types of machines for their farm operations.

(10 marks)

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12. An agriculture teacher brought two samples of soil labelled P and Q to a form three class. She told the students that one of the soil samples was **acidic** while the other was **alkaline**.

Using **universal** indicator, describe an experiment to distinguish the two soil samples. In your description, show materials used, procedure, expected results and conclusion.

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EXAMINATION NO.: _____



M012/I

Describe any **five** characteristics that should be considered when selecting a cow for milk production.

(10 marks)

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14. A village has a large population of livestock as such most of the land is used for grazing. However, the village has the following resources at its disposal in addition to livestock:

- Malawi Rural Finance Company
- An agricultural extension worker
- A river passing through it
- Large amounts of animal excreta

Explain any five ways in which the village can use the resources available to increase crop production.

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EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2014 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/1

Monday, 14 July

Time Allowed: 2 hours
8:30 – 10:30 am

## PAPER I

(100 marks)

| Question Number | Tick if answered | Do not write in these columns | |
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Instructions

1. **This paper contains 12 pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **four** questions.
3. Answer **all** questions in the spaces provided.
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.

(10 marks)

Turn over

MANEB

## Section A (60 marks)

Answer all the ten questions in this section.

1. a. List any three breeds of goats.

_____

_____

_____

_____

(3 marks)

b. Give any two diseases of goats.

_____

_____

_____

(2 marks)

c. State any two characteristics of a good goat house.

_____

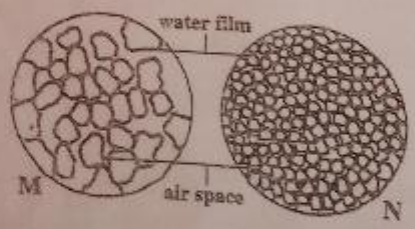
_____

_____

_____

(2 marks)

2. The figure below shows two types of soils as seen under the microscope labelled M and N. Use it to answer the questions that follow.




a. Which type of soil has a large surface area?

M

(1 mark)

Continued/...

EXAMINATION NO.: _____



M012/1

(Continued)

b. What advantage does the type of soil named in 2(a) have over the other type of soil?

It can be easily be tilled than other type of soil because it is very compacted together

(2 marks)

c. Give **one** crop that can grow well in the type of soil labelled **M**.

(1 mark)

a. State any **one** way in which fuel energy can be useful to irrigation farming.

(1 mark)

b. Explain any **one** safety measure when using fuel energy on a farm.

(2 marks)

a. Give any **two** ways in which trading of agricultural commodities is important at community level.

The agricultural commodities are always available at that particular community level

(2 marks)

b. Explain any **two** ways of improving trading of agricultural commodities at international level.

(4 marks)

Continued/...

EXAMINATION NO.: _____ M012/I



014

5. a. Explain any one way in which each of the following ways can help to control ticks:

(i) knowledge of the life cycle of the ticks

_____

_____

_____

(2 marks)

(ii) rotational grazing

_____

_____

_____

_____

(2 marks)

b. State any three signs of heat in a cow.

_____

_____

_____

_____

(3 marks)

6. a. (i) List any two functions of phosphorous in crops.

_____

_____

_____

(2 marks)

(ii) Describe any one deficiency symptom of phosphorous in crops.

_____

_____

_____

(2 marks)

EXAMINATION NO.: _____

Page 5 of 12

M012/I

a. (Continued)

(iii) Give any two ways of correcting phosphorous deficiency in crops.

(2 marks)

b. Give two steps to be followed when processing mangoes for storage.

(i) Cooling fruit quickly to 7-10 C°
(ii) Selecting fruits that are in good condition for storage.

(2 marks)

A school garden had been infested with aphids. An experiment was conducted by a Form Four class on three chemicals in order to find out the appropriate chemical for controlling the aphids. Use this information to answer the questions that follow.

a. What two observations can be made during the experiment?

(2 marks)

b. State any two ways of reducing errors in the experiment.

(2 marks)

Continued/...

7. (Continued)

c. Explain one way in which the experiment can increase vegetable production.

_____

_____

_____ (2 marks)

8. a. A cow produced 4300 kg of milk when fed 6000 kg pasture, 40 kg madeya and 25 kg bone meal. Use this information to answer the question that follows.

Calculate the amount of roughages and concentrates the cow consumed.

**Roughages**

_____

_____ (1 mark)

**Concentrates**

_____

_____ (1 mark)

b. Give two reasons why farmers are encouraged to keep a record of calving dates in dairy production.

_____

_____

_____

_____

_____ (2 marks)

The table below shows some of the problems that a certain farmer faces. Use it to answer the questions that follow.

| PLOT 1 | PLOT 2 | PLOT 3 |
|---|---|---|
| lack of nitrogen | heavily infested with witch weed | heavily infested with aphids |

If a farmer wants to grow cassava, maize and groundnuts, plan a crop rotation programme for the first year by indicating the crop to be grown in each plot.

Plot 1 _____

Plot 2 _____

Plot 3 _____ (3 marks)

Give a reason for the choice of the crop recommended in each plot.

_____

_____

_____

_____

_____

_____ (3 marks)

Give any **three** effects of land degradation on the economy.

_____

_____

_____

_____ (3 marks)

Continued/...

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2014

10. (Continued)

b. Describe any two ways of conserving water for agricultural production.

(4 marks)

c. State any two roles of estates in food production for the growing population.

(2 marks)

Continued

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2. A Form Three class was provided with the following pieces of apparatus and specimen.

- measuring cylinder
- funnel
- filter paper
- a known volume of water in a beaker
- dry soil sample
- cotton wool

With the aid of a well labelled diagram of an experiment, describe how the water holding capacity of the given soil sample would be determined.

(10 marks)

Continued/...

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**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form **except** for **Question 12**.

**11.** Explain any **five** purposes for mulching mango seedlings.

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13. Explain any five ways in which agricultural cooperatives are important to farmers.

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14. The following agricultural development services have just been made available to farmers in a certain area:

- Farm mechanization
- Extension and training
- Seed technology
- Agricultural credit
- Irrigation

If the area has for several years experienced the problem of low crop yields, explain any five ways in which the farmers could make use of the services in order to reduce the problem.

(10 marks)

END OF QUESTION PAPER

This paper contains 12 pages.

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EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

**2015 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

## AGRICULTURE

(100 marks)

**Subject Number: M012/1**

**Monday, 22 June**

**Time Allowed: 2 hours**
**8:00 – 10:00 am**

## PAPER I

**Instructions**

1. **This paper contains 11 printed pages. Please check.**
2. This paper has **two** sections, A and B. Section A has **ten** questions and Section B, **four** questions.
3. Answer **all** questions in the spaces provided.
4. Write your **Examination Number** on **all** pages.
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6. At the end of the examination, hand in your paper to the invigilator.

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Turn over

2015 MANEB

EXAMINATION NO.: _____



2015

## Section A (60 marks)

Answer all the ten questions in this section.

1. a. List any two chemical properties of soil.

_____

_____

b. Give any two ways of modifying soil pH.

_____

_____

2. a. State any two points to consider when setting up a flood irrigation sy

_____

_____

b. (i) Describe "surface land drainage".

_____

_____

_____

_____

(ii) State four disadvantages of "surface land drainage".

_____

_____

_____

_____

_____

_____

_____

(i) Name one bloodless method of castrating bull calves.

_____

(ii) Give any two advantages of castrating bull calves. (1 mark)

_____

_____

_____ (2 marks)

A form 3 class carried out an experiment on manure to find out the appropriate rate of manure on maize yield. Use this information to answer questions that follow.

| Treatment | Rate of manure (kg/ha) | Maize yield (50 kg bag/ha) |
|---|---|---|
| 1 | 0 | 10 |
| 2 | 10 | 25 |
| 3 | 15 | 45 |
| 4 | 20 | 50 |
| 5 | 25 | 53 |

(i) Give any three factors that should be held constant in the experiment.

_____

_____

_____ (3 marks)

(ii) Name the control treatment.

_____ (1 mark)

(iii) How many kilogrammes of maize were harvested from treatment 4?

_____ (1 mark)

Continued/...

EXAMINATION NO.: _____ M0120

Page 4 of 11

2015

4. Describe the three steps that are involved in hay making.

(6 marks)

5. At a certain market, the price of chambo rose from K2 000.00 to K2 500.00 per unit. This resulted in change of supply from 27 units to 30 units of Chambo. Calculate price elasticity of supply at this market.

EXAMINATION NO.: _____ M012/I

Page 6 of 11

2015

8. State any four factors that should be considered when selecting a site for mango production.

(4 marks)

9. a. Define the term "cropping systems".

(1 mark)

b. List any three activities involved in "bush fallowing".

(3 m

c. State three disadvantages of "bush fallowing".

(3

EXAMINATION NO.: _____



M012/1

Describe each of the following steps in a report of an agricultural experiment:

a. design of an experiment

[illegible]

(2 marks)

b. data analysis

Collecting in the field involves many process eg. calculating the percentages for germination of survival

(2 marks)

Continued/...

EXAMINATION NO.: _____ M012/1

2015



Section B (40 marks)

Answer all the four questions in this section. Your answers should be in an essay form except for Question 12.

11. Explain any five effects of soil degradation on agricultural production.

- Loss of fertile top soils reslult in the reduction of crop yield
- pollution of water resources due to environment becomes the soil loose fertility
- Loss of arable land due to gullies and formed makes the soil to become harder for making ploughing.
- Low water ground table due to increased of run-off and reduced rate of infiltration.
- Logging up of rivers and this causes scarcity and also silting of water reservoirs eg dams and rivers.

12. Draw a well labelled diagram to describe the life cycle of a one host tick.

(10 mark

Continued

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EXAMINATION NO.: _____ M012/1



2015

13. Explain any **five** ways in which high population growth may contribute to the occurrence of droughts.

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EXAMINATION NO.: _____

Page 11 of 11

M012/I

following agricultural development services exist in a certain farming community:

- money lending institution
- farm settlement
- land husbandry
- soil testing

plain any **five ways** in which the community would utilize these services to improve agricultural production.

(10 marks)

EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARI

2016 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## AGRICULTURE

(100 marks)

Subject Number: M012

Time Allowed: 2 hou
8:00 – 10:00 a

Monday, 27 June

## PAPER I

| Question Number | Tick if answered | Do not write in these columns | |
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6. At the end of the examination, hand in your paper to the invigilator.

**Section A** (60 marks)

Answer **all** the **ten** questions in this section.

1. a. List any **three** local varieties of mangoes that farmers grow in Malawi.

_____

_____

_____ (3 mar

b. Give any **three** reasons why growing of mangoes is important in Malawi.

_____

_____

_____ (3 ma

2. a. A wholesaler bought 50 bags of beans each weighing 50 kilogrammes in 2015 and kept them for sale in 2016.

(i) Name any **three** risks that the wholesaler may come across.

_____

_____

_____ (3 m

(ii) If one kilogramme of beans costs K150.00, calculate the cost of buying the beans.

(2 n



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EXAMINATION NO.: _____ M012/I

Page 3 of 11

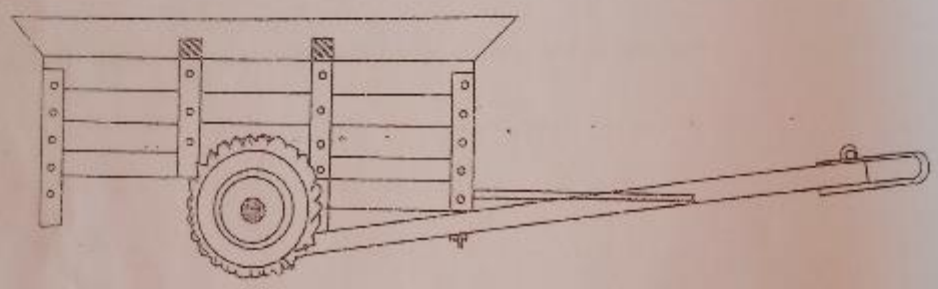
2016

2. (Continued)

b. Give any two roles of a retailer in marketing of agricultural commodities.

(2 marks)

3. The Figure below is a diagram of a farm implement. Use it to answer the questions that follow.



a. Name the farm implement.

An ox-cart

(1 mark)

b. Give one use of the farm implement.

using for carrying maize from the garden after harvested.

(1 mark)

c. Name the source of energy for the farm implement.

Animal enegy

(1 mark)

d. State any three ways of maintaining the farm implement.

- repair broken parts
- tighten all loose bolts and nuts
- Clean the tools and Implement after use

a. Write down **two** biological methods of conserving water.

_____

_____ (2 marks)

b. State **one** way in which soil erosion can reduce ground water.

_____

_____

_____ (1 mark)

c. Give any **one** way in which water conservation is important in each of the following:

(i) dairy production

_____

_____ (1 mar

(ii) ensuring food security

_____

_____ (1 ma

5. a. Name any **three** causes of gender biases in agricultural technology.

_____

_____

_____ (3 ma

b. Give any **two** roles of agricultural policies in national development.

_____

_____

EXAMINATION NO.: _____

M012/1

Page 5 of 11

2016

6. a. (i) Give any three signs of foot and mouth disease in sheep.

⇒ Soles on foot and mouth

⇒ Silivation

⇒ Loss of apetite

(3 mar

(ii) State any two ways of controlling foot and mouth disease in sheep.

⇒ practice indoor grazing to avoid contact

with infected animals

⇒ kill and bury all infected animals

(2 mar

b. Classify the following livestock parasites into **external** and **internal** parasites: liver flukes, mites, ticks and roundworms

**External:** ticks, mites

**Internal:** Liver flukes, roundworms

(4 mar

7. Maize in a grain store was seriously damaged by weevils despite that farmers applied pesticide **X** correctly. Use this information to answer the questions that follow.

a. Identify the agricultural problem faced by the farmers that require conducting an experiment.

(1 ma

b. Give any two factors that should be considered when designing the experiment in order to solve the problem in **7.a.** accurately.

EXAMINATION NO.: _____



M012/I

The **Table below** shows results of a feeding experiment on a cow using **three** different types of feeds. Use it to answer the questions that follow.

| FEED | MILK YIELD (kg) |
|---|---|
| X | 200 |
| Y | 150 |
| Z | 350 |

a. Give **one** method of collecting information in this experiment.

_____ **(1 mark)**

b. State **one** way in which this experiment would be evaluated.

_____ **(1 mark)**

c. Explain **one** way in which this experiment would be useful in livestock production.

_____ **(2 marks)**

9. a. List any **three** examples of production records that a pasture farmer should be encouraged to keep.

_____ **(3 marks)**

b. A farmer planted beans in a maize field.

(i) Name the type of enterprise combination.

_____ **(1 mark)**

(ii) Give a reason for the answer to **9.b.(i)**.

_____ **(1 m**



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2016 EXAMINATION NO.: _____
Page 7 of 11 M012/1

9. (Continued)

c. Explain any **two** ways in which agricultural cooperatives can ensure food security.

⇒ They use mechanisation which make farming activities faster hance high production

⇒

(4 marks)

10. a. State any **three** disadvantages of broadcasting method of sowing pasture seeds.

- Some seeds can easly be eaten by birds or blaon off by wind.
- Difficult to weed the field.
- Difficult to apply fertilizer

(3 marks)

b. Give any **three** reasons why it is important to control stocking rates in pastures.

- Stocking is the total number of animals per unit area
- understanding should be avoided as it can lead to waste of pasture.
- Overstocking should also be avoided as it cause over grazing.

(3 marks)

Continued/

EXAMINATION NO.: _____ M01

2016

Page 8 of 11

**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form exce for **Question 12.**

11. Explain the importance of any **five** qualities of a good goat house.

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12 Draw a well labelled diagram showing the **cycle** of activities involved in **shifting cultivation**.

(10 marks)

Continued

13. Explain any **five** ways of improving soil structure.

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14. A highly populated area experiences hunger due to dry spells and short rainfall season. The area has the following services.

- an agriculture research centre
- agricultural extension services
- a health centre
- irrigation services

Explain **five** ways in which the area can use the services to ensure food security.

(10 marks)

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EXAMINATION NO.:_____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2016 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

esday, 22 June

Time Allowed: $1\frac{1}{2}$ hour sessions
8:00 am onwards

## PAPER II
(60 marks)

## Practical

| Question Number | Tick if answered | Do not write in these columns | |
|---|---|---|---|
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ctions

This paper **contains 8 printed pages.** Please **check.**

Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.

Write your **Examination Number** on **all** pages.

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.

Turn over

1. You are provided with the following:

- two soil samples labelled **X** and **Y**.
- 10 ml of water in a container.

Procedure

- moisten each soil sample with a few drops of the water provided
- rub each soil sample between the fingers and roll it into a ball.

a. Write any two observations on each soil sample.

**Soil Sample X**

_____

_____

_____

(2 marks)

**Soil Sample Y**

_____

_____

_____

(2 marks)

b. (i) Which of the two soil samples could be difficult to cultivate?

_____

(1 mark)

(ii) Give a reason for the answer to **b.(i).**

_____

_____

_____

(1 mark)

2016 EXAMINATION NO.: _____

Page 3 of 8

1. (Continued) M012/II

c. (i) Which of the two soil samples could be well aerated?

_____ (1 mark)

(ii) Give a reason for the answer to c. (i).

_____

_____

_____ (1 mark)

d. (i) Which of the two soil samples could be suitable for flood irrigation?

_____ (1 mark)

(ii) Give a reason for the answer to d.(i).

_____

_____

_____ (1 mark)

2. You are provided with two specimens labelled P and Q.

a. Name the type of demand each of the specimens would attract on the market.

P: _____ (1 mark)

Q: _____ (1 mark)

b. (i) Name the cropping system if a farmer grows specimen Q only on the whole farm every year.

_____ (1 mark)

Continued/...

EXAMINATION NO.: _____ M012

Page 4 of 8

2016

2. b. (Continued)

(ii) State any three advantages of the cropping system named in b.(i).

_____

_____

_____

_____

_____

_____ (3 ma

c. Give one storage pest for each of the following specimens labelled P and Q.

P: _____ (1m

Q: _____ (1 m

d. Name any two processed products from the specimen labelled P.

_____

_____ (2 m

3. a. Table 1 shows quantities of concentrates that were fed to a pregnant cow at different times before calving. Use it to answer the questions that follow.

Table 1

| Time before calving (weeks) | Amount of concentrates (kg) |
|---|---|
| 4 | 17.5 |
| 3 | 21.0 |
| 2 | 24.5 |
| 1 | 31.5 |

(i) Calculate the total amount of concentrates consumed by the cow before calving.

(Continued)

(ii) If the cost of concentrates was K50.00 per kilogramme, calculate the total cost of the concentrates consumed by the cow before calving.

(2 marks)

(iii) Describe the relationship between time in weeks before calving and the amount of concentrates given.

_____

_____

_____

(2 marks)

(iv) Give a reason for the answer to 3.a. (iii).

_____

_____

_____

(2 marks)

The **Figure below** is a diagram showing a machinery being used in land preparation. Use it to answer the questions that follow.

Continued/...

EXAMINATION NO.: _____ M012/II

Page 6 of 8

2016

3. b. (Continued)

(i) Name the source of energy that the machinery uses.

_____ (1 mark)

(ii) Give **one** way in which customary land tenure may fail to support use of the machinery.

_____

_____ (1 mark)

(iii) List any **four** safety measures to be observed when using the machinery.

_____

_____

_____

_____ (4 marks)

(iv) Explain **one** way in which use of the machinery may cause land degradation.

_____

_____ (2 marks)

(v) Explain **one** way in which use of the farm machinery can ensure food security.

_____

_____

_____ (2 marks)

(vi) Give any **two** implements that can be attached to the machinery to carry out various operations..

_____

_____

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a. (i) A farmer had the following list of properties and assets.

- 4 bags of maize valued at K5 000.00 per bag
- 2 hectares of land valued at K500 000.00
- 2 bottles of pesticides valued at K150.00 per bottle
- A plough with a present value of K57 500.00

Produce an **inventory** record.

(7 marks)

(ii) Give any **two** benefits of an **inventory** record on a farm.

_____

_____

_____

(2 marks)

b. **Table 2** shows results of an experiment on maize conducted by form 4 students. Use it to answer the questions that follow.

**Table 2**

| Time of planting | Yield (kg) |
|---|---|
| Early planting | 50 |
| Late planting | 20 |

(i) What was the aim of the experiment?

_____

_____

(1 mark)

EXAMINATION NO.: _____ M012/II

Page 8 of 8

2016

4. b. (Continued)

(ii) Explain any **two** causes for the difference in yield between the early and late planted maize.

_____

_____

_____

_____

_____

_____

(4 marks)

(iii) Give any **four** factors that must remain constant in the experiment.

_____

_____

_____

_____

(4 marks)

(iv) Explain **one** way in which results from this experiment can help to ensure food security.

_____

_____

_____

(2 marks)

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2017 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

(100 marks)

Subject Number: M012/I

Time Allowed: 2 hours
8:00 – 10:00 am

Monday, 26 June

## PAPER I

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **four** questions.
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EXAMINATION NO.: _____ M012/1

2017

Page 2 of 12

Section A (60 marks)

Answer all the ten questions in this section.

1. a. State any two disadvantages of biological weed control.

(i) It doesnt eliminate the weeds from root ie it is not effective

(ii) _____

(2 marks)

b. Give any two ways in which inoculation of legume seed is important.

(i) It reduce dormancy of seeds in the soil

(ii) provides nitrogen fixation in the soil

(2 marks)

2. A farmer who grows maize and groundnuts wants to start raising rabbits, in addition to the two crop enterprises. Use this information to answer the questions that follow:

a. Identify the farming system to be practiced.

mixed farming

(1 mark)

b. Name the type of budget the farmer should prepare for the proposed plan.

_____

(1 mark)

c. Give one condition that is necessary for coming up with the type of budget on this farm.

Availability of enough capital

(1 mark)

2. (Continued)

d. State how the budget named in 2 (b) is important to the farmer.

_____

_____ (1 mark)

3. Figure 1 is a diagram of irrigation systems labelled F and G. Use it to answer the questions that follow:

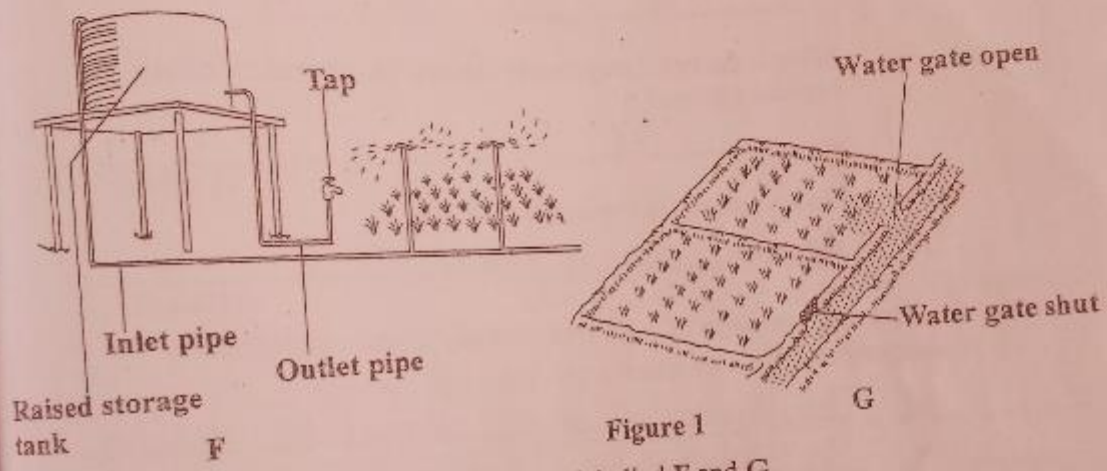


Figure 1

a. Name the irrigation systems labelled F and G.

F: Sprinkler

G: Flood (2 marks)

b. (i) Which irrigation system should a farmer use on steep slopes?

Sprinkler (1 mark)

(ii) Give any two reasons for the answer.

(1) It suits any type of land since it sprays water overhead

(2) It doesn't need gravity hence can still work on steep slopes (4 marks)

Continued/...

EXAMINATION NO.: _____ M012/1

2017 Page 4 of 12

4. Table 1 shows results of an experiment on the effect of temperature intensity on the survival rate of broiler chicks during the first week in a brooding house. Use it to answer questions that follow:

Table 1

| Temperature °C | Survival Rate % |
|---|---|
| 20 | 30 |
| 25 | 45 |
| 30 | 70 |
| 35 | 95 |
| 40 | 80 |

a. (i) What is the best temperature that can be recommended in a brooding house?

35°C

(1 mark)

(ii) Give a reason for the answer in 4 a (i).

Survival rate is higher

(1 mark)

b. State any two ways of achieving accuracy when conducting this experiment.

(i) The source of energy should be reliable to maintain the recomended Temperature

(ii) The brooding room should be well ventilated to avoid accumulation of other gases

(2 marks)

c. Name any two forms of farm energy that can be used in this experiment.

(i) Solar energy

(ii) Electricity

(2 marks)

d. Explain one way in which reporting this experiment can help to ensure high poultry production.

farmers will be able to regulate temperature in their brooding houses

2017 EXAMINATION NO.: _____ M012/II
Page 5 of 10

3. a. **(Continued)**

(iii) Calculate income obtained in day 3 if the milk was sold at K300/litre.

300 x 3

K900

**(2 marks)**

(iv) State any **one** reason for keeping such a record on the farm.

_____

**(1 mark)**

(v) State the **two** marketing channels which could be used by this farmer to sell the milk.

(1) One trio - Sell direct to the consumer

(2) Two trio - Sell at a whole sale to a wholesaler who then sell it at retail price

**(2 marks)**

Continued/...

3. (Continued)

b. Table 2 shows annual volumes of water that were lost from the dams in areas X, Y and Z. The volume of water in each dam was 24,000 $cm^3$. Use it to answer questions that follow:

Table 2

| Area | Annual Water Loss |
|---|---|
| X | 2200 |
| Y | 3400 |
| Z | 4000 |

(i) Which of the three areas lost most water?

area X

(1 mark)

(ii) If vegetation for catchment area for X was cleared, explain any one way in which the volume of water in the dam would be affected.

→ It will decrease because of siltation caused
• There will be some evaporation rate and by high run-off rate due to bare ground. Water will be lost by the evaporation and be cleared

(2 marks)

(iii) Which area had sandy soils?

area X

(1 mark)

(iv) Name any two factors that would cause water loss from the dams.

(1) Excess evaporation takes place due to high sunlight intensity

(2) Siltation which raises the dam bed and expose it to high evaporation

(2 marks)

Continued/...

2017 EXAMINATION NO.: _____

Page 7 of 12 M012/I

9. (Continued)

b. **Figure 2** shows a diagram of a structure of the reproductive system of a hen. Use it to answer the questions that follow:

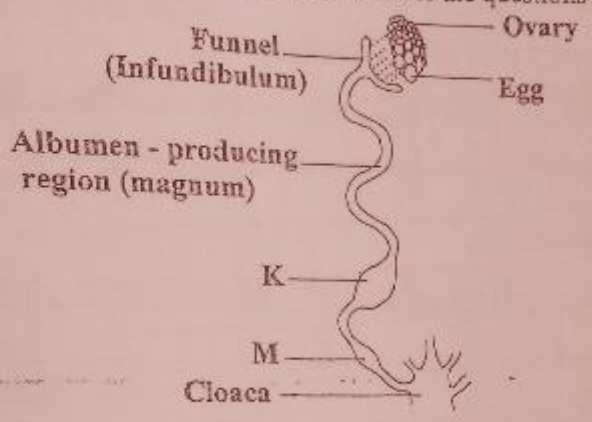


Figure 2

(i) Identify the parts labelled K and M.

K: uterus (1 mark)

M: Vagina (1 mark)

(ii) Give the **two** minerals that contribute to proper functioning of part labelled K.

(1) calcium

(2) (2 marks)

c. Give **two** ways in which docking in sheep is important.

(i) It makes easy when mating

(ii) prevents accumulation of dung which cause infection (2 marks)

Continued/..

10. a. State any one way in which each of the following can reduce risks and uncertainties on a farm:

(i) Selecting a more reliable enterprise.

Reduce ~~the~~ incuring of losses through low sales

(1 mark)

(ii) Input substitution.

Help diversification when one enterprise fail

(1 mark)

b. State any two ways in which trading at national level can ensure food security.

(i) _____

(ii) _____

(2 marks)

c. Give any two methods of advertising agricultural products in highly populated areas.

(i) _____

(ii) _____

(2 marks)

d. Explain one advantage of an indirect marketing channel to the farmer.

_____

(2 marks)

Continued/...

**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form **except** for **Question 12.**

11. Explain any **five** advantages of zero tillage in crop production.

**(10 marks)**

Continued/

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EXAMINATION NO.: _____



M012/1

2017

12. Draw a diagram of terrace cropping and label any six parts.

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13. Describe any five characteristics that farmers look for when selecting sheep for breeding.

(10 marks)

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14. Table 2 shows the number of men and women that were involved in various agricultural roles in a certain village.

Table 2

| | Accessing loans from commercial banks | Supplying labour to food crop's fields | Selling of tobacco at auction floors | Use of machine |
|---|---|---|---|---|
| Men | 180 | 47 | 65 | 150 |
| Women | 42 | 175 | 57 | 72 |

Identify four problems associated with the various agricultural roles and explain any one way of solving any of the three problems.

**Problems:**

(i) _____

(ii) _____

(iii) _____

(iv) _____ (4 marks)

**Solutions:**

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

(6 marks)

**END OF QUESTION PAPER**

**This paper contains 12 printed pages.**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2017 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

Thursday, 22 June

Time Allowed: $1\frac{1}{2}$ hour sessions
8:00 am onwards

## PAPER II

(60 marks)

**Practical**

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

Instructions

1. **This paper contains 10 printed pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, **tick** against the question number you have answered.
5. At the end of the examination, hand in your paper to the invigilator.

Turn over

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1. You are provided with two specimens labelled X and Y.

a. (i) Which of these specimens could be recommended in sandy soils?

_____

_____ (1 mark)

(ii) Give two reasons for the answer in 1 a (i).

(1) _____

_____

(2) _____

_____ (2 marks)

b. Describe how specimen labelled X is applied in a maize crop.

_____

_____

_____

_____ (3 marks)

c. (i) State any two factors that affect the quality of specimen labelled Y.

(1) _____

_____

(2) _____

_____ (2 marks)

Continued/...

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1. c. **(Continued)**

(ii) Calculate number of 50 kg bags of specimen **X** for 1 hectare of maize crop which requires 115 kg nitrogen per hectare given that 50 kg bag of specimen **X** supplies 23 kg nitrogen.

**(2 marks)**

2. You are provided with **two** leaves of weeds labelled **P** and **M**.

a. Give **two** characteristics on the leaves which can be used for classification.

_____

_____

**(2 marks)**

b. Why is it difficult to control weed **M** in a maize field using selective herbicides?

_____

_____

**(2 marks)**

c. State any **three** ways in which weed labeled **P** can reduce maize production.

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

**(3 marks)**

Continued/

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2. (Continued)

d. List any three cultural methods of controlling weed labelled M.

(i) _____

(ii) _____

(iii) _____

(3 marks)

3. a. Table 1 shows milk produced by three different cows kept by a farmer.

Table 1

| Cow No. | Milk Produced Per Day (Litres) | | | |
|---|---|---|---|---|
| | Day 1 | Day 2 | Day 3 | Day 4 |
| 1 | 5 | 3 | 6 | 8 |
| 2 | 6 | 4 | 5 | 2 |
| 3 | 2 | 5 | 3 | 6 |

(i) Name the type of record kept by the farmer.

_____

(1 mark)

(ii) Which of these cows should be culled? Show your working.

(4 marks)

Continued/...

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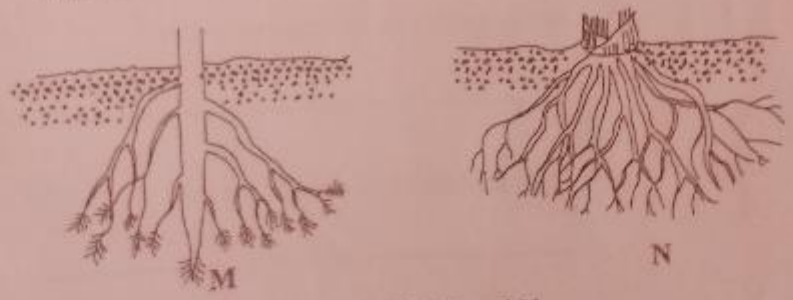
3. b. **(Continued)**

(v) If farmers in the area **Y** were to plant 220 seedlings with annual crop water requirement of 100 $cm^3$ per plant. Assess if water in the dam would be enough for irrigation.

Show your working.

**(4 marks)**

4. a. **Figure below** is a diagram showing two root systems labelled **M** and **N**. Use it to answer the questions that follow:




(i) Name root system labelled **M** and **N**.

(1) **M**: _____

(2) **N**: _____ **(2 marks)**

Continued/...

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EXAMINATION NO.: _____ M012/II

2017

Page 8 of 10

4 a. (Continued)

(ii) Which root system can cause soil degradation?

_____ (1 mark)

(iii) Give a reason for the answer to 4 a (ii).

_____

_____ (2 marks)

(iv) Which root system can reduce soil degradation?

_____ (1 mark)

(v) Give a reason for the answer in 4 a (iv).

_____

_____ (2 marks)

(vi) Which root system may require each of the following?

(1) Heavy application of irrigation water.

_____ (1 mark)

(2) Light application of irrigation water.

_____ (1 mark)

Drought
- The Soil is intentile as there is no rain to moisten it
- There is loss of Food (Famine) - because there is no water for the growth of plants or animals
- Death of plants, animals and humans

Continued...

4. b. Form 3 learners planned to conduct an experiment to find out the effect of organic manure on the yield of maize using three treatments **P**, **Q**, and **R** in two blocks.

(i) Design the experiment.

(4 marks)

Continued/...

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4. b. (Continued)

(ii) State any two reasons for producing a report on the findings of the experiment.

(1) _____

_____

(2) _____

_____ (2 marks)

(iii) Explain any one way in which the experiment would

(1) help improve food security.

_____

_____ (2 marks)

(2) reduce land degradation.

_____

_____ (2 marks)

END OF QUESTION PAPER

This paper contains 10 printed pages.

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

2018 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

(100 marks)

Subject Number: M012/I

Time Allowed: 2 hours
8:00 – 10:00 am

Monday, 25 June

## PAPER I

| Question Number | Tick if answered | Do not write in these columns | |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **four** questions.
3. Answer **all** questions in the spaces provided.
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.

Turn over

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**Section A** (60 marks)

Answer **all** the **ten** questions in this section.

1. a. Name any **two** uses of electrical energy on a farm.

(i) _____

(ii) _____

**(2 marks)**

b. State any **three** safety measures to be observed when using petrol as a source of energy.

(i) _____

(ii) _____

(iii) _____

**(3 marks)**

2. a. Explain any **one** way in which the following factors can help to reduce land degradation in Malawi.

(i) Agriculture policy.

_____

**(2 marks)**

(ii) Minimum tillage cropping system.

_____

**(2 marks)**

2018

2. **(Continued)**

b. Describe how litmus paper could be used to determine the pH of a given soil sample.

_____

_____

_____

_____

_____

_____

**(3 marks)**

3. **Figure below** is a diagram of management practice carried out in a cattle crush. Use it to answer the questions that follow:

a. Identify the livestock management practice.

_____

**(1 mark)**

b. Explain any **one** way in which the management practice can improve livestock production.

_____

_____

_____

**(2 marks)**

c. State any **two** disadvantages of the livestock management practice.

(i) _____

_____

(ii) _____

_____

**(2 marks)**

Continued/...

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3. (Continued)

d. List any **two** marketing agencies involved in marketing of milk.

(i) _____

(ii) _____

**(2 marks)**

4. a. Define the term "crop processing".

_____

_____

_____

**(1 mark)**

b. State any **three** ways in which drying of maize grains is important.

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

**(3 marks)**

c. State any **three** barriers to international trading of agricultural commodities.

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

**(3 marks)**

Continued...

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EXAMINATION NO.: _____ M012/I

Page 5 of 12

2018

5. a. Name any **two** tick borne diseases in goats.

(i) _____

(ii) _____ **(2 marks)**

b. Give any **two** preventative measures for tick borne diseases.

(i) _____

_____

(ii) _____

_____ **(2 marks)**

6. **Table below** shows analyzed results of an experiment on a legume pasture planted at three different spacings. Use it to answer the questions that follow:

| Spacing (cm) | % Yield |
|---|---|
| 10 | 68 |
| 15 | 22 |
| 25 | 10 |

a. Identify the following in the experiment:

(i) Treatment.

_____ **(1 mark)**

(ii) Method of analyzing results.

_____ **(1 mark)**

b. Give any **three** factors that could be held constant in the experiment.

(i) _____

_____

(ii) _____

_____

(iii) _____

_____ **(3 marks)**

Continued/

6. (Continued)

c. What could be the aim of the experiment?

_____

_____ (1 mark)

d. Explain **one** way in which this experiment can increase animal production.

_____

_____ (2 marks)

7. a. Name **one** example of an aquatic weed.

_____ (1 mark)

b. State any **two** ways in which aquatic weeds may increase the cost of water management.

(i) _____

_____

(ii) _____

_____ (2 marks)

8. a. Give any **two** examples of surface irrigation.

(i) _____

(ii) _____ (2 marks)

b. Explain any **one** way in which soil erosion can affect operations of surface irrigation system.

_____

_____ (2 marks)

Continued/...

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a. Explain any **one** way in which each of the following factors affects choice of enterprise:

(i) Profitability of the enterprise.

_____

_____

_____ **(2 marks)**

(ii) Comparative advantage.

_____

_____

_____

_____ **(2 marks)**

b. State any **two** principles for the formation of agricultural cooperatives.

(i) _____

_____

(ii) _____

_____ **(2 marks)**

**10.** a. Give any **two** types of experimental design.

(i) _____

(ii) _____ **(2 marks)**

b. Classify the following weeds as parasitic and non-parasitic weeds; pig weed, blackjack, witch weed, star grass and dodder.

| Parasitic weeds | Non parasitic weeds |
|---|---|
| | |
| | |
| | |
| | |

**(5 marks)**

(Continued)

c. State any two ways in which private land tenure system can be used to generate capital for investment in agriculture.

(i) _____

_____

_____

(ii) _____

_____

_____

_____

(2 marks)

Continued...

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**Section B** (40 marks)

Answer **all** the **four** questions in this section. Your answers should be in an essay form **except** for **Question 12**.

**11.** Describe any **five** factors that affect the quality of hay.

**(10 marks)**

Continued/..

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EXAMINATION NO.: _____ M012/I

2018 Page 10 of 12

12. Draw the reproductive system of a cock and label any **seven** parts.

**(10 marks)**

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EXAMINATION NO.: _____

2018 Page 11 of 12 M012/1

13. Explain any **five** causes of soil degradation.

**(10 marks)**

Continued/...

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14. A farmer has just leased a piece of bare land whose soil is degraded. The land is on a mountainous area with furrows already constructed across the slope.

The farmer has also acquired sweet potato vines and ground nut seeds.

Explain any **five** ways in which the farmer would use the available resources to reduce soil degradation.

(10 marks)

**END OF QUESTION PAPER**

**This paper contains 12 printed pages.**

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EXAMINATION NO.

THE MALAWI NATIONAL EXAMINATIONS BOARD

2018 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/II

Thursday, 21 June

Time Allowed: 1½ hour sessions
1:00 pm onwards

## PAPER II

(60 marks)

### Practical

**Instructions**

1. **This paper contains 10 printed pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, **tick** against the question number you have answered.
5. 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 | | | |
| | | | |

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Turn over

**EXAMINATION NO.:** _____

**Page 2 of 10**

1. You are provided with the following:

- 2 tablespoons air dried sandy soil
- 1 measuring cylinder or clear bottle
- 50 mls water
- 1 card board

a. Carry out an experiment using sedimentation method.

Draw and label the experiment based on your observation.

**(5 marks)**

b. State the aim of carrying out the experiment in **1(a)**.

_____

_____

**(1 mark)**

c. State any **four** ways in which the results of this experiment are important in crop production.

_____

_____

_____

_____

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EXAMINATION NO.: _____ 50012/II
Page 3 of 10

2. You are provided with **two** specimens labeled **P** and **M**. Use them to answer questions that follow.

a. Identify

(i) main food nutrient found in specimen **M**.

_____ **(1 mark)**

(ii) livestock feed suitable for lambs aged up to 6 months.

_____ **(1 mark)**

(iii) Give any **two** reasons for the answer to question **2 a (ii)**.

(1) _____

_____

(2) _____

_____ **(4 marks)**

b. Describe the marketing function that led to production of specimen labelled **M**.

_____

_____

_____ **(2 marks)**

c. State any **two** ways which can prolong storage time for specimen **P**.

(i) _____

_____

(ii) _____

_____ **(2 ma**

EXAMINATION NO: _____

Page 4 of 10

Figure 1 is a diagram showing students collecting data in a variety trial. Use it to answer the questions that follow:

**Figure 1**

a. (i) Identify **three** activities which are taking place in the diagram.

(1) _____

(2) _____

(3) _____

**(3 marks)**

(ii) List any **three** ways in which data collected in the experiment may be recorded.

(1) _____

(2) _____

(3) _____

a. **(Continued)**

(iii) Explain any **two** ways in which reporting this agricultural experiment could ensure food security.

(1) _____

_____

(2) _____

_____ **(4 marks)**

b. **Table 1** shows a record of feed consumed by two breeds of cattle, **Y** and **Z** for one week and the milk yield produced every day. The amount of feed given to each breed was the same. Use it to answer the questions that follow:

**Table 1**

| **Time in days** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|---|
| Feed (kg) | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Yield for **Y** (kg) | 5 | 7 | 8 | 8 | 9 | 9 | 9 |
| Yield for **Z** (kg) | 6 | 9 | 12 | 14 | 15 | 15.5 | 15.5 |

(i) Plot a graph of feed consumed against yield for each breed. **(5 marks)**

Continued/...

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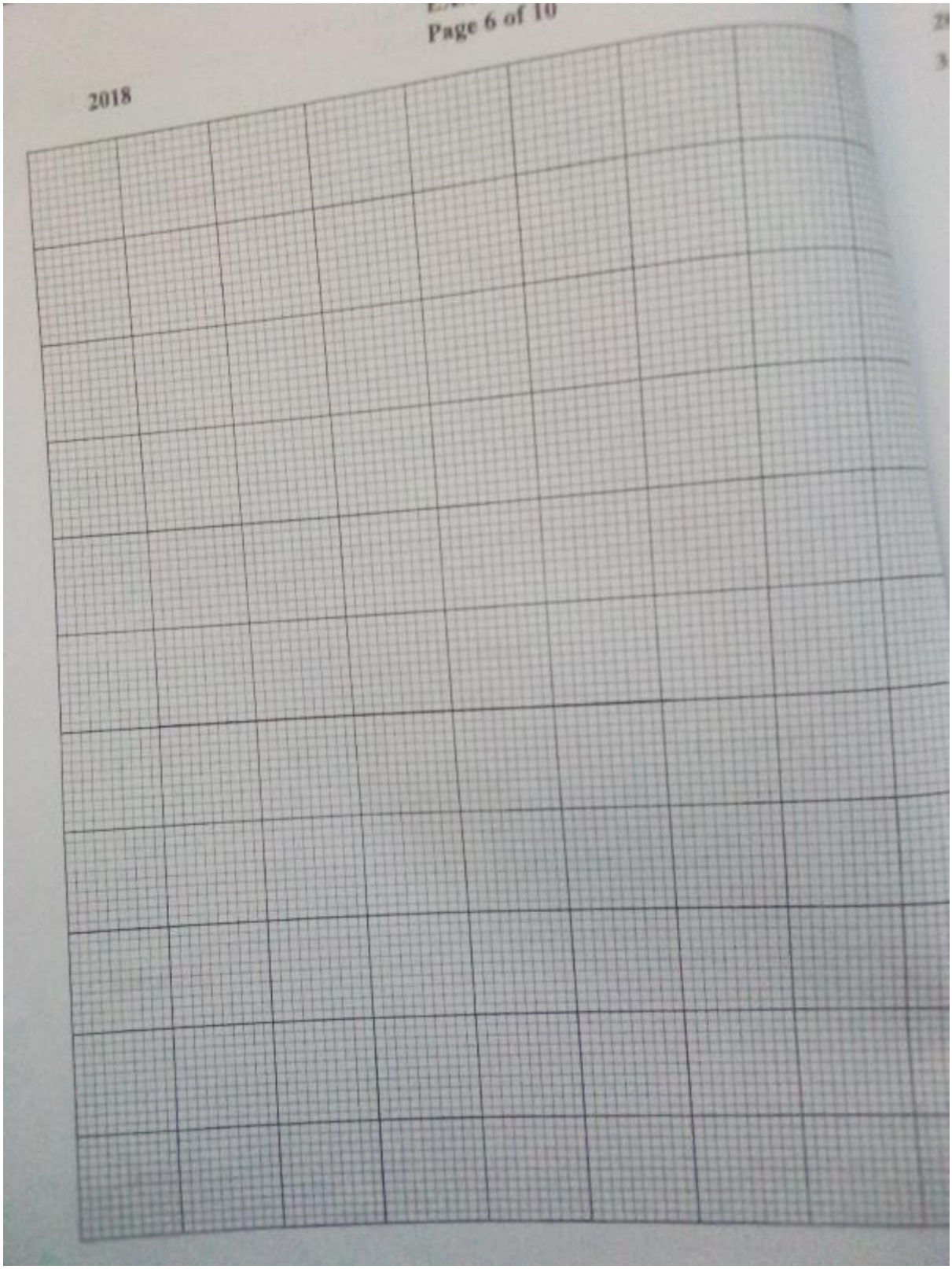


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018

b. **(Continued)**

(ii) State **one** importance of this record to the farmer.

_____

_____

**(1 mark)**

(iii) Calculate the difference in milk yield for breeds **Y** and **Z** on day 4.

**(2 marks)**

(iv) State any **two** factors which contributed to the difference in milk yield.

_____

_____

_____

_____

**(2 marks)**

Continued

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18

a. **Figure 2** is a diagram of a farmer controlling pests in a vegetable garden. Use it to answer the questions that follow:

**Figure 2**

(i) Identify the method of pest and disease control shown in the diagram.

_____

**(1 mark)**

(ii) Describe any **two** safety measures that have been observed by the farmer in the diagram.

(1) _____

_____

_____

**(2 marks)**

(2) _____

_____

_____

**(2 marks)**

(iii) Explain any **two** advantages of using this method of pest and disease control.

(1) _____

_____

_____

**(2 marks)**

Continued/

a. (iii) **(Continued)**

(2) _____

_____

_____

**(2 marks)**

(iv) Name the implement that is being used to control the pests and diseases.

_____

**(1 mark)**

b. **Table 2** shows income and cost of production of a certain farmer who grew **two** different types of crops. Use it to answer the questions that follow:

**Table 2**

| Type of crop | Total yield (Kg) | Total income (MK) | Total cost of production (MK) |
|---|---|---|---|
| Maize | 2000 | 300,000 | 200,000 |
| Beans | 2000 | 700,000 | 150,000 |

(i) Calculate the marketing margins for maize and beans.

Maize

**(2 marks)**

Continued/....

4. b. **(Continued)**

Beans

**(2 marks)**

(ii) If the farmer wanted to engage in only one enterprise in the following year, which crop should he choose?

_____

**(1 mark)**

(iii) Give a reason for the answer in **4 b (ii)**.

_____

_____

**(1 mark)**

(iv) Explain any **two** ways in which the farmer would increase the total income.

(1) _____

_____

_____

**(2 marks)**

(2) _____

_____

_____

**(2 marks)**

**END OF QUESTION PAPER**

**This paper contains 10 printed pages.**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

## SAMPLE PAPER

# AGRICULTURE

Subject Number: M012/I

Time Allowed: 2 hours

## PAPER I

(100 marks)

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has two sections. **A** and **B**. Section **A** has ten questions and Section **B**, three questions.
3. Answer **all** questions in the spaces provided
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 | | Marker's Name |
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Turn over

## SECTION A: 70 Marks

(Answer all the questions in the spaces provided)

1. a. Give any two forms of soil degradation.

(2 marks)

b. Explain any two ways in which poor farming practices encourage water loss.

(4 marks)

c. State any two ways in which deforestation causes climate change

(2 marks

d. Explain any two ways of modifying acidic soils to suit maize Production.

(4 mark

Continued

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a. List any three ways of randomizing the treatments in an experiments

_____

_____

_____

**(3 marks)**

b. Explain any two ways in which agricultural research help to support the growing population in Malawi.

_____

_____

_____

_____

**(4 marks)**

**Table 1** shows results of an experiment on effect of fertilizer rate on maize yield. Use it to answer the questions that follow:

**Table 1**

| Fertilizer rate (kg/ha | Yield (kg) |
|---|---|
| 0 | 1000 |
| 100 | 1700 |
| 200 | 3000 |
| 300 | 5000 |
| 400 | 7000 |
| 500 | 7500 |
| 600 | 7600 |

(a) Plot a graph of yield against fertilizer rate on **page 4**. **(4 marks)**

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3. (Continued)

Continued/...

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**(Continued)**

b. From the graph what is the best fertilizer rate that can be recommended for growing maize?

_____

_____ **(1 mark)**

c. Give a reason for the answer in **5a**.

_____

_____

_____ **(2 marks)**

d. State the economic principle which has been illustrated on the graph.

_____

_____ **(1 mark)**

e. What is the importance of analyzing data in this experiment?

_____

_____ **(1 mark)**

Explain any **two** conditions necessary for setting up the following Irrigation systems:

a. Furrow irrigation

_____

_____

_____

_____ **(2 marks)**

b. Sprinkler irrigation

_____

_____

_____

5. **Table 1** shows different prices of tomato and their corresponding levels of demand. Use it to answer the question that follows:

| Price (Mk/tomato) | Quantity demanded |
|---|---|
| 5 | 120 |
| 10 | 100 |
| 15 | 80 |
| 20 | 60 |
| 25 | 40 |
| 30 | 20 |

Suppose the price for each tomato changed from K10 to K15

a. calculate price elasticity of demand

(4 marks)

b. List any three major factors of production.

(3 marks)

Continued

6. State any **two** advantages and **two** disadvantages of using vegetative planting materials.

**Advantages**

_____

_____

_____

_____ **(2 marks)**

**Disadvantages**

_____

_____

_____

_____ **(2 marks)**

7. A maize plant is showing chlorosis starting from the tip of the leaf and stunted growth. Use the information to answer the questions that follow:

a. Identify the nutrient that the maize plant is lacking.

_____ **( 1 mark)**

b. State any **two** ways of correcting the deficiency symptoms.

_____

_____

_____

_____ **(2 marks)**

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7. **(Continued)**

c. Give any **two** ways in which the nutrient is being depleted from the soil.

_____

_____

_____

_____

**(2 marks)**

8. a. List any **two** major plant nutrients.

_____

_____

_____

**(2 marks)**

b. Describe any **three** ways of maintaining soil fertility.

_____

_____

_____

_____

**(4 marks)**

9. **Figure 1** is a diagram of livestock parasite. Use it to answer the questions that follow:

**Figure 1**

a. Identify the parasite.

_____

**(1 mark)**

Continued...

**(Continued)**

b. Name any **two** farm animals that are affected by the parasite.

_____

_____ (2 marks)

c. State any **two** ways of controlling the parasite.

_____

_____

_____ (2 marks)

10. (a) Name any **two** types of broiler feed.

_____

_____

_____ (2 marks)

(b) List any **three** diseases of chickens.

_____

_____

_____

_____ (3 marks)

(c) Explain any **one** way of controlling wild cat.

_____

_____

_____ (4 marks)

Continued

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## SECTION B: (30 marks)

**Answer all the three questions in this Section**

11. Explain any five advantages of mixed cropping.

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EXAMINATION NO.: _____



12. Describe any five qualities of a good sheep house.

(10 marks)

Continued/...

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13. Explain any five challenges of running agricultural cooperatives.

(10 m

**END OF QUESTION PAPER**

**NB: This paper contains 12 printed pages.**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

**2019 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

# AGRICULTURE

(100 marks)

**Subject Number: M012/I**

**Monday, 24 June**

**Time Allowed: 2 hours**
8:00 – 10:00 am

## PAPER I

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **three** questions.
3. Answer **all** questions in the spaces provided.
4. Write your **Examination Number** on **all** pages.
5. At the end of the examination, hand in your paper to the invigilator.

| Question Number | Tick if answered | Do not write in these columns | |
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Turn over

2019

**Section A** (70 marks)

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

1. a. State any **two** ways in which supplying is important in crop production.

_____

_____

_____

_____

**(2 marks)**

b. Describe any **one** way of achieving the following in maize production:

(i) Selfing of parents

_____

_____

_____

_____

**(2 marks)**

(ii) Cross – pollinating of in- bred lines

_____

_____

_____

_____

**(2 marks)**

c. Explain any **two** ways in which living organisms help to maintain plant nutrients in the soil.

_____

_____

_____

_____

**(4 marks)**

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**1. (Continued)**

d. Name any **two** materials used as substrates in mushroom production.

_____

_____

**(2 marks)**

2. a Explain any **one** way in which each of the following farming technologies would improve food security:

(i) Irrigation

_____

_____

_____

_____

(2 marks)

(ii) Pest and disease management

_____

_____

_____

_____

(2 marks)

b Explain any **two** ways in which use of animal power increases food supply in Malawi.

_____

_____

_____

_____

_____

(4 marks)

3 a State any **one** way of controlling scales in a mango orchard.

_____

_____

**(1 mark)**

Continued/...

3. (Continued)

b. Using a well labelled diagram illustrate a **three** tire marketing channel.

**(3 marks)**

c. Calculate the number of maize seeds that will be needed for 3 hectares of land given that 3 seeds are planted per station. The distance between ridges and planting station is 0.9 metres.

**(2 marks)**

d. If a farmer planted 800 seeds in his field and only 200 seeds germinated, calculate the germination percentage.

**(2 marks)**

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4. **Figure 1** is a diagram showing a product of a human activity.

Figure 1

a. Give any **two** negative effects of the human activity on the environment.

_____

_____

_____

(2 marks)

b. Explain any **two** ways of overcoming the impact of the human activity on agricultural production.

_____

_____

_____

_____

_____

_____

(4 marks)

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2019

5. a In Mchere village the prices of maize were very high but the demand did not change.

(i) Name the degree of demand for maize in Mchere village.

_____

**(1 mark)**

(ii) Give a reason for the answer in 5 a (i).

_____

_____

_____

**(2 marks)**

b. State any two ways in which elasticity of demand is important.

_____

_____

_____

_____

**(2 marks)**

c. State any **one** way of improving output from each of the following sources of farm power:

(i) Drought animals

_____

_____

_____

**(1 mark)**

(ii) Solar

_____

_____

_____

**(1 mark)**

Continued/...

**6.** a. Explain any **one** way in which knowledge of "signs of heat" in a cow is important to a farmer.

_____
_____
_____
_____

(2 marks)

b. Name **two** diseases which cause lameness in sheep.

_____
_____

(2 marks)

**7.** a. State any **two** agricultural development agencies which provide credit Services in Malawi.

_____
_____

**(2 marks)**

b. Describe the first **two** stages in the scientific approach to agricultural research.

_____
_____
_____
_____
_____

(4 marks)

**8.** a. State any **three** conditions for getting a loan from commercial banks.

_____
_____
_____

**(3 marks)**

Continued/...

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8. ( Continued)

b. State the **three** stages of marginal yield in the law of "diminishing marginal returns."

_____

_____

_____

_____

**(3 marks)**

9. Figure 2 is a diagram showing the digestive system of a farm animal. Use it to answer questions that follow.

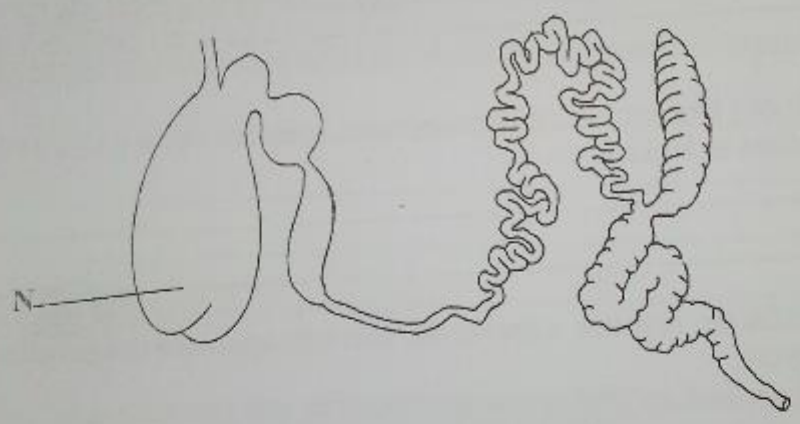


**Figure 2**

a. Name the type of farm animals which have this digestive system.

_____

**(1 mark)**

b. Mention any **two** nutrients digested in the part labelled **N**.

_____

_____

**(2 marks)**

9. **( Continued)**

c. Explain any **one** way in which the digestive system is suitable for grass as a feed.

_____

_____

_____

(2 marks)

d. Name **one** disease associated with the digestive system.

_____

(2 marks)

10. a State any **two** ways in which "steaming up" of the cow during the dry period is important.

_____

_____

(2 marks)

b. Explain any **two** ways in which Agricultural Research is important to the growing population.

_____

_____

_____

_____

_____

(4 marks)

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**Section B (30 marks)**

Answer all the **three** questions in this section

11. Explain any **five** ways in which mixed cropping increases food supply in Malawi.

**(10 marks)**

Continued/

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12. Describe any **five** factors that farmers should consider when harvesting mushroom.

(10 marks)

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13. Explain any five factors to consider when feeding poultry.

**(10 marks)**

**END OF QUESTION PAPER**

**This paper contains 12 printed pages.**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

**2019 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

# AGRICULTURE

**Subject Number: M012/II**

**Wednesday, 19 June**

**Time Allowed:** $1\frac{1}{2}$ hour sessions
10:00 am onwards

## PAPER II

(40 marks)

**Practical**

**Instructions**

1. **This paper contains 8 printed pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, tick against the question number you have answered.
5. At the end of the examination, hand in your paper to the invigilator.

| Question Number | Tick if answered | Do not write in these columns | |
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Turn over

2019

## Section A (20 marks)

1. Mr Zangazanga, a cabbage farmer kept the following record:

   1. Bought cabbage seeds at K2,000.00
   2. Paid casual labour for transplanting seedlings at K5,000.00
   3. Paid permanent labour for irrigating cabbages at k10,000.00
   4. Bought insecticides at K5,000.00
   5. Harvested 1000 heads of cabbages and sold them at K200.00 per

   Calculate :

   a. Total income for Mr Zangazanga.

   (2 marks)

   b. Gross margin for Mr Zangazanga.

EXAMINATION NO.: _____

2019 Page 3 of 8 M012/1

1. **(Continued)**

c. Profit / loss for Mr Zangazanga

(2 marks)

2. **Table 1** shows the amount of milk in litres produced by each of the two breeds of cattle per lactation. Use it to answer the questions that follow.

**Table1**

| | **Amount of milk produced per lactation** | |
|---|---|---|
| **Number of lactations** | **Breed A( local)** | **Breed B (Exotic)** |
| 1st | 70 | 120 |
| 2nd | 80 | 140 |
| 3rd | | 160 |
| 4th | 100 | |
| 5th | 110 | 200 |

Continued/...

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2019

2. (Continued)

a. Plot a line graph for each breed. (5 m

b. Using the graph calculate the amount of milk produced by breeds A and B for 3rd and 4th lactations respectively

(i) Breed A: _____

(ii) Breed B: _____

**(4 marks)**

Continued/...

EXAMINATION NO.: _____

2019 Page 5 of 8 M012/1

2. (Continued)

c. State any **one** way of improving milk production of breed A.

_____

_____

(1 mark)

**Section B (20 marks)**

3. You are provided with the following :

- Specimen labelled Q
- Scarpel / Knife
- Water in container
- Soil samples labelled **P** and **R**

**Procedure**

Using scarpel / knife, cut specimen Q longitudinally.

a (i) Draw a longitudinal section of specimen Q and label any two parts.

(3 marks)

Continued/...

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**EXAMINATION NO.:** _____



2019

3. a. **(Continued)**

(ii) Describe any **one** observable feature in specimen **Q** that would help survive in drought conditions.

_____

_____

_____

**(2 marks)**

b. Add a few drops of water to soil samples **P** and **R.**

(i) Using "feel method", determine the textural classes of the soil samples P and R.

P: _____

R: _____

**(2 marks)**

(ii) Which soil sample would be suitable for growing specimen **Q**?

_____

**(1 mark)**

(iii) Give a reason for the answer in 3b (ii)

_____

_____

**(2 marks)**

4. a. You are provided with the following:

- Two different types of fertilizer samples labelled **K** and **L**
- Distilled water in a wash bottle
- 2 leaves of litmus paper
- 4 beakers/ containers
- Sand soil
- Clay soil

**Continued/...**

a. **(Continued)**

**Procedure**

- Pour 50 mls of water into two beakers
- Add fertilizer labelled **K** in one beaker and fertilizer labelled **L** in the other beaker
- Shake/ stir the mixtures
- Observe as each fertilizer dissolves

(i) Which fertilizer dissolves faster?

_____ (1 mark)

(ii) Which fertilizer would be recommended in high rainfall areas?

_____ (1 mark)

(iii) Give a reason for the answer in a (ii).

_____

_____

_____ (2 marks)

**Procedure**

- Put sand soil in a beaker or container.
- Add distilled water to the soil in the beaker.
- Shake the contents in the beaker.
- Leave it to stand for 2 – 5 minutes.
- Dip litmus paper into the soil solution

Continued/...

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(Continued)

(i) Observe and record the colour change of the litmus paper in **Table 2.**

- Repeat the procedure using clay soil
- Observe and record in the appropriate spaces in **Table 2**

**Table 2**

| Soil sample | Colour change of litmus paper |
|---|---|
| Sand | |
| Clay | |

**(2 marks)**

(ii) Determine the pH for each of the soil samples based on the observation in b (i).

_____

_____

**(2 marks)**

(iii) State any one way in which each of the soil pH would be corrected to maximize crop production.

_____

_____

**(2 marks)**

**END OF QUESTION PAPER**

This paper contains 8 printed pages.

EXAMINATION NO.

THE MALAWI NATIONAL EXAMINATIONS BOARD

2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

(100 marks)

Subject Number: M012/I

Time Allowed: 2 hours
8:00 – 10:00 am

Monday, 29 June

## PAPER I

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **three** questions.
3. Answer **all** questions in the spaces provided.
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.

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**Section A** (70 marks)

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

1. a. Give any **two** causes of soilsalinity.

- poor drainage
- high evaporation

(2 marks)

b. State any **two** factors that affect cation exchange capacity of soils.

- Soil pH
- Amount of Organic matter in the soil

(2 marks)

c. Describe any **two** factors that affect the nutrient status of a soil.

- Parent material - Parent material affects the amount of minerals in the soil.
- Soil pH - Influences availability of soil nutrient.

(4 marks)

d. Mention any **two** mitigation measures of climate change in agriculture.

- Planting of trees
- Following good farming methods

(2 marks)

EXAMINATION NO.: _____ M012/1

2020 Page 3 of 12

2. a Explain any **one** way in which each of the following animal husbandry practices are important in pig production:

(i) clipping of teeth

It helps to prevent piglets from biting the mother

(2 marks)

(ii) castration

To prevent undesirable pigs from breeding.

(2 marks)

b Explain any **two** ways in which improved farming technologies increase food supply.

- Use of irrigation structures to help in improper growth of crops hence high crop production
- Use of pesticides to avoid pest and disease from crops hence high yields.

(4 marks)

3. a Mention **two** minerals responsible for the growth of bones in goats.

Iron

Calcium

(2 marks)

b State any **two** factors to consider when selecting breeds of sheep for a particular area.

Climate

quality

EXAMINATION NO.: _____

2020 Page 4 of 12 M012/1

3. **(Continued)**

c. State any **two** roles of middlemen as marketing agencies.

They link producers with consumers who may be far

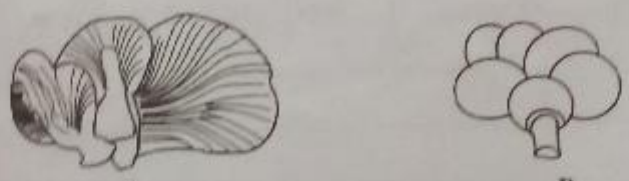
**(2 marks)**

d. Explain any **two** ways in which size of the land affects agricultural production.

- A small size of the land leads to low yields
- Since the land is small, a little crops will also be planted hence low yields.
- A very large land its difficult to maintain when pest and disease affect the land is very difficult to maintain at the same time.

**(4 marks)**

4. a. **Figure 1** shows a diagram of mushroom types grown in Malawi. Use it to answer the questions that follow:



A B

**Figure 1**

(i) Name the mushroom types labelled **A** and **B**.

A Oyster mushrooms

B Button mushroom

**(2 marks)**

(ii) State any **two** differences between mushroom type **A** and **B**.

- Oyster is easy to grow rather than button
- Oyster is more good and nutritious than button

2020

4. (Continued)

b. Describe radiation method of preserving mushroom.

(2 marks)

5. a. A farmer living in a valley has a reliable source of water from a nearby hilly area.

(i) Name the irrigation system the farmer should establish.

Overhead Irrigation

(1 mark)

(ii) Give a reason for the answer to **5.a(i)**.

Is suitable for hill higher hilly area

(2 marks)

(iii) Write down **two** problems that the irrigation system may face.

- Damaging
- difficult to maintain

(2 marks)

b. Explain any **one** way in which scarification may improve pasture establishment.

(2 marks)

State any **two** characteristics of a good seed.

It must be pure

It must be wholly

**(2 marks)**

The **table 1** below shows analyzed results of an experiment on seed germination rate of different varieties labelled **X, Y** and **Z**. Use it to answer the questions that follow.

**Table 1**

| Seed Variety | Germination % |
|---|---|
| X | 40 |
| Y | 90 |
| Z | 20 |

(i) Identify a control treatment.

20

**(1 mark)**

(ii) What is the aim of the experiment?

Germination rate for different seeds.

**(1 mark)**

(iii) Which of the seed variety would be recommended to a farmer?

Z

**(1 mark)**

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2020

8. **(Continued)**

b. Explain any **two** marketing problems facing vegetable farmers in Malawi.

- Transportation: farmers experiance lack of enough transport this maybe because they don't have enough money.
- Perishability: Some vegetables are easly to be perished at if they take abt of time it causes loss due to per

**(4 marks)**

9. **Figure 3** is a diagram of a crop storage structure. Use it to answer questions that follow.

**Figure 3**

a. Name the crop storage structure.

Granary

**(1mark)**

b. Explain any **two** ways of maintaining the crop storage structure.

- It must have strong poles.
- Maintaining the damaged part or linking part

**(4 marks)**

The **table 2** below shows types of land tenure and sizes of land that were held by farmers **W** and **Z**. Use it to answer the questions that follow.

**Table 2**

| | **Farmer W** | **Farmer Z** |
|---|---|---|
| Land tenure system | Customary | Private |
| Size of land (ha) | 2 | 65 |
| Family size | 15 | 3 |

a. Give any **two** ways in which farmer **W** may fail to contribute to agricultural development.

- Small piece of land
- has large family.

**(2 marks)**

b. Explain any **two** ways in which farmer **Z** can contribute to food security.

- Due to a large piece of land the farmer is likely to have high crop yields.
- There will be enough food because the farmer has a very small family.

**(4 marks)**

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Answer all the **three** questions in this section

1. Explain any **five** cultural ways of controlling pests in crop production.

Spraying of plants with dacomil fu or applying sulphur dust in groundnuts

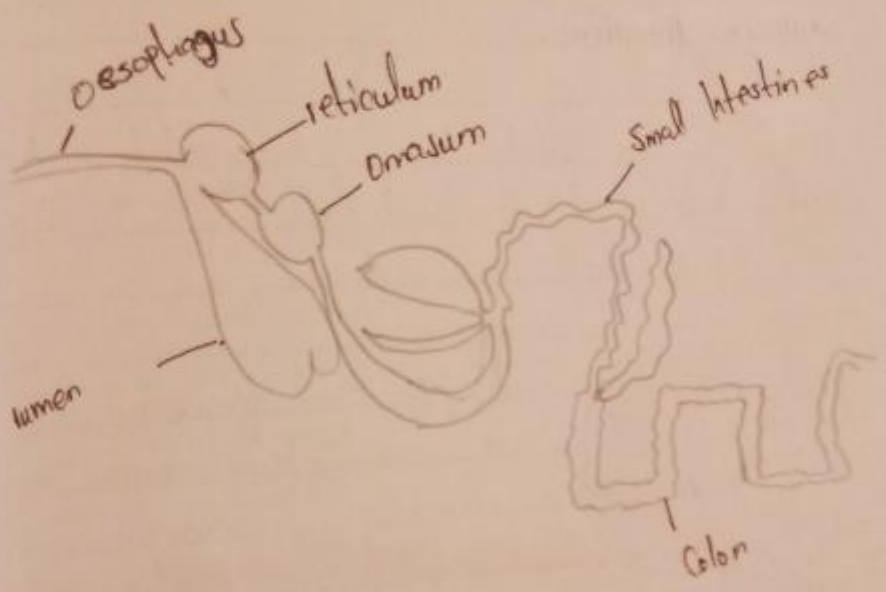
Correct spacing to control aphids which transmit the virus planting resistance varieties in groundnuts.

Avoiding banking in dry weather due to maize.

Using chemical recommended by extension worker.

Use the natural enemy to control them like cats in maize.

12. Draw the reproductive system of a cow and label any **five** parts.




(10 mark

13. Describe any **five** qualities of a suitable site for mushroom production.

Mushrooms are grown in a house which has suitable conditions.

- Firstly the site must have good ventilation. The house must have good doors and windows such that they will be free from any obstructions.

- Secondly the site must have good temperature. The surrounding of the house must have normal temperature which will not lead to perishability of mushroom.

- Thirdly the site should be away from livestock kraals, rubbish pits and latrines. This is due to avoidance of attraction of flies to the mushroom house.

- Fourthly, the house must have good moisture. The moisture ~~which will not~~ should be suitable for the mushroom whereby it cannot be affected by bacterials.

Lastly the site must have good humidity. The humidity which will suit with the house properly.

**(10 marks)**

**END OF QUESTION PAPER**

**This paper contains 12 printed pages.**

EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

**Subject Number: M012/II**

**Tuesday, 23 June**

**Time Allowed: 1½ hour sessions**
**10:00 am onwards**

## PAPER II

(40 marks)

**Practical**

**Instructions**

1. **This paper contains 7 printed pages. Please check.**
2. Answer **all** questions in the spaces provided. Marks are indicated against each part of the question.
3. Write your **Examination Number** on **all** pages.
4. In the table provided on this page, **tick** against the question number you have answered.
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020

## Section A (20 marks)

a. A farmer borrowed **K150,000** to buy agricultural inputs for maize producti
He was to pay back the loan at an interest rate of **50%** at the end of the yea
Calculate the total amount of money the farmer would pay back.

**(4marks)**

b. The farmer harvested **50 bags** of maize weighing **50kg** each. The maize was sold at **K100 per kg** and he spent **K15, 000** on casual labour. Calculate the profit or loss the farmer made. Show your working.

**(6 marks)**

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EXAMINATION NO.: _____ M012/II

Page 3 of 7

2020

2. a. **Table** below shows the result of a fertilizer trial on maize production carried out by form 3 students.

| Fertilizer rate (kg /plot) | 10 | 20 | 30 | 40 | 50 |
|---|---|---|---|---|---|
| Yield obtained (kg) | 4 | 15 | 25 | 15 | 2 |

(i) Plot a graph to show the effect of increase of fertilizer rate on yield.

**(4 marks)**

Continued/...

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2020

2 a. **( Continued)**

(ii) Name the principle shown in the graph.

_____

**(1 mark)**

(iii) Explain **one** way in which the principle stated in **2a (ii)** is useful to a farmer.

_____

_____

_____

**(2 marks)**

b. Design a **three** year crop rotation for maize, groundnuts and sweet potatoes.

| plot / year | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

**(3 marks)**

**Section B** (20 marks)

3. You are provided with the following :

- 3 containers labelled **1**, **2** and **3**
- 2 types of soil labelled **A** and **B**
- Specimens **W**, **J**, **K** and **Y**
- Spatual / table spoon

**Procedure**

- Put soil sample **A** in containers **1** and **3**
- Put soil sample **B** in container **2**
- Plant specimen **W** in all the containers
- In the same container labelled **2**, plant specimen **J**.

a (i) Identify the cropping system carried out in each container.

| Container | Cropping system |
|---|---|
| 1 | |
| 2 | |
| 3 | |

**(3 marks)**

(ii) Which container will require frequent application of water?

_____

**(1 marks)**

(ii) Give a reason for the answer in **a (ii)**.

_____

_____

**(2 marks)**

Continued/...

20

(Continued)

b. State any **two** benefits of planting specimen **W** and **J** in container labelled 2.

_____

_____

_____ **(2 marks)**

c. Classify specimen **K** and **Y** as feed for livestock.

**K:** _____

**Y:** _____ **(2 marks)**

You are provided with an animal product obtained from a cow.

a. (i) Observe and describe the condition of the product.

_____

_____ **(2 marks)**

(ii) What disease could have affected the cow to make the product in the condition it is?

_____ **(1 mark)**

(iii) Name the organism that caused the disease in **4a (ii)**.

_____ **(1 mark)**

(iv) Give **two** ways of controlling the disease.

_____

_____

_____ **(2 marks)**

Continued/...

(Continued)

b. You are provided with a crop pest. Use it to answer questions that follow.

(i) Draw the pest and label the mouth part.

**(2 marks)**

(ii) Explain any **one** way in which the pest reduces quality of crop produce.

_____

_____

_____

_____

**(2 marks)**

**END OF QUESTION PAPER**

**This paper contains 7 printed pages.**

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EXAMINATION NO.:

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

Subject Number: M012/I

Wednesday, 20th January 2021

Time Allowed: 2 hours
8:00 – 10:00am

## PAPER I

(100 marks)

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. **This** paper has two sections, **A** and **B**. Section **A** has **ten** questions and Section **B** has **three** questions.
3. Answer **all** questions in the spaces provided
4. Write your **Examination Number** on all pages.
5. 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 | | | |
| 5 | | | |
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| 9 | | | |
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| 12 | | | |
| 13 | | | |
| | | | |

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Turn over

**Section A** (70 marks)
Answer **all** questions in the spaces provided.

1. a. Name any **two** crops that use runners for propagation.

_____

_____

**(2 marks)**

b. Give any **two** advantages of drilling as a method of pasture establishment.

_____

_____

**(2 marks)**

c. Explain **one** way in which pelleting pasture seeds with rock phosphate is important in pasture establishment.

_____

_____

**(2 marks)**

d. Explain any **one** way in which agricultural cooperatives are important in agricultural production.

_____

_____

**( 2 marks)**

2. a. Name any **two** macro nutrients of crop plants responsible for protein formulation.

_____

_____

**(2 marks)**

b. A maize plant in a garden shows the following deficiency signs
- scorching of the leaf edges
- mottled chlorosis of leaves
- leaf curling

i. Mention the nutrient that is lacking in the soil.

_____

**(1 mark)**

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2. b. (Cont'd)

ii. Give any **two** ways of controlling the deficiency symptoms of the maize plant.

_____

_____

**(2 marks)**

c. **Figure 1** is a diagram showing a cropping system. Use it to answer questions that follow.

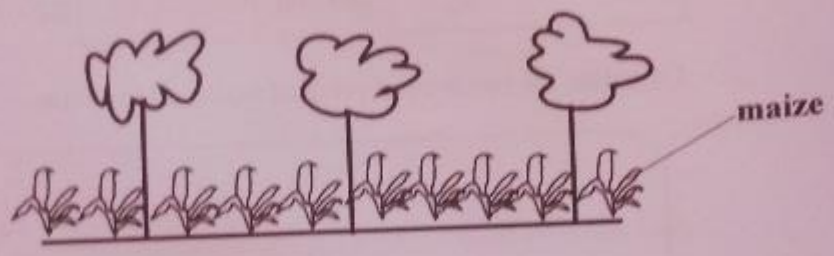


**Figure 1**

i. Identify the type of cropping system.

_____

**(1 mark)**

ii. State any **two** advantages of the cropping system.

_____

_____

_____

_____

**(2 marks)**

d. Describe any **two** effects of population distribution on marketing of agricultural produce.

_____

_____

_____

_____

**(4 marks)**

Continued/...

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3. a. State any **two** economic principles in farm business decision making.

_____

_____

**(2 marks)**

b. **Table 1** shows a record that was kept by a farmer. Use it to answer question 3(b).

**Table 1**

| Yield of maize (kg) | Variable costs (MK) | Fixed costs (MK) |
|---|---|---|
| 2000 | 180 000 | 220 000 |

Calculate the break-even price of maize on the farm.

**(3 marks)**

c. Classify the following pasture grasses into **indigenous** and **exotic** groups; star grass, rapoko grass and elephant grass.

**(3 marks)**

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4. **Figure 2** shows a diagram of a cow being milked. Use it to answer questions that follow.

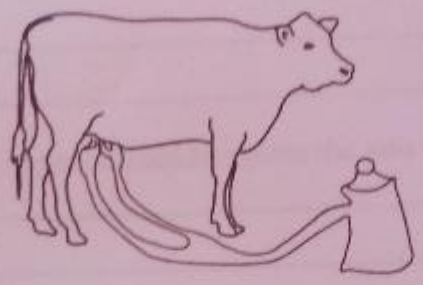

**Figure 2**

(i) State **one** advantage of using the machine to milk the cow.

_____

**(1 mark)**

(ii) Explain any **two** factors a farmer should consider before acquiring the farm machinery.

_____

_____

_____

_____

**(4 marks)**

5. a. A farmer cultivates maize on the same piece of land yearly. He however would like to plant maize and beans on the same rows the following year. Use the information to answer questions a (i) to a (iii).

(i) Name the type of budget the farmer will prepare in the following year.

_____

**(1 mark)**

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(ii) State any **one** use of the budget in 2a (i).

_____ **(1 mark)**

(iii) Explain any **one** way in which the cropping system would support crop production.

_____

_____ **(2 marks)**

b. State any **one** advantage of bio drainage.

_____

_____ **(1 mark)**

6. a. Describe any **one** characteristic to look for when choosing parents for cross-breeding beef cattle.

_____

_____ **(2 marks)**

b. (i) Name a disease which a cow is likely to develop when it is producing large quantities of milk.

_____ **(1 mark)**

(ii) State any **two** ways of controlling the disease.

_____

_____ **(2 marks)**

7. a. State any **two** main areas of an experimental report.

_____

_____ **(2 marks)**

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7. (Cont'd)

b. Explain any **two** ways in which agricultural marketing services are important.

_____

_____

_____

_____

**(4 marks)**

8. a. Give any **two** types of farm structures.

_____

_____

**(2 marks)**

b. Describe the way of irrigating tomato plants using **drip irrigation** given the following materials:- a hammer, nails, water and tins.

_____

_____

_____

_____

**(3 marks)**

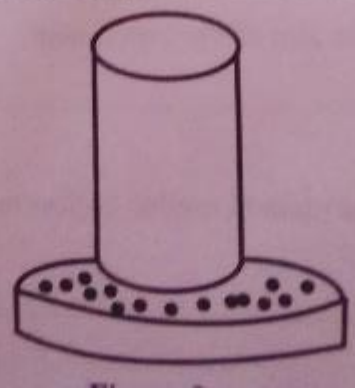
c. Give any **two** categories of marketing functions.

_____

_____

**(2 marks)**

9. **Figure 3** is a diagram of a farm equipment. Use it to answer questions 9a and b.



9. a. (Cont'd)

i. Explain any **one** reason for not using the equipment to feed chicks.

_____

_____ **(2 marks)**

ii. Explain **one** way in which the equipment should be taken care of to prevent transmission of disease.

_____

_____ **(2 marks)**

b. Explain any **one** way in which intensive management system would increase productivity of local breeds of chicken.

_____

_____ **(2 marks)**

**10.** a. **Table 2** shows results of an experiment on two animals of the same breed. Use it to answer questions 10 (i) to (iii).

**Table 2**

| Animal | Original weight at birth (kg) | Feed Type | Drug | New weight after 10 months (kg) |
|---|---|---|---|---|
| A | 4 | X | BCG vaccine 10mls | 7 |
| B | 4 | Y | BCG vaccine 10mls | 12 |

i. State the aim of the experiment.

_____ **(1 mark)**

ii. Write the method used to collect the information presented in the table.

_____ **(1 mark)**

10. **(Cont'd)**

iii. Outline any **two** factors that the farmer kept constant in the experiment.

_____

_____

_____

**(2 marks)**

b. A farmer has the following equipments: wire mesh, slasher, knapsack sprayer and a dipping tank.

Describe any **two** ways the farmer would control external parasites using the available resources.

_____

_____

_____

_____

**(4 marks)**

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**Section B (30 marks)**

Answer all the **three** questions in this section.

. Explain any **five** advantages of artificial insemination in livestock production.

**(10 marks)**

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EXAMINATION NO: _____ 3002/1
Page 11 of 12

Describe any five advantages of rotational grazing in pasture management.

(20 marks)
Continued

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3. A farmer has the following resources:
- maize and groundnut seeds
- 0.5 hectares of land which is degraded
- cattle
- fish pond
- woodlot of faldebia abida

Explain any **five** ways the farmer would use the available resources to mitigate climate change.

**(10 marks)**

**END OF QUESTION PAPER**

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**Section A** (70 marks)

Answer **all** the questions in this section

1. a. State any **two** principles used in formation of agricultural cooperatives.

_____

_____

**(2 marks)**

b. Explain any **one** way in which each of the following challenges of running agricultural cooperatives could be solved.

(i) lack of managerial skills

_____

_____

_____

**(2 marks)**

(ii) lack of capital

_____

_____

_____

**(2 marks)**

c. A farmer grows maize and beans in the same field in one growing season.

(i) Name the type of enterprise combination practiced by the farmer.

_____

**(1 mark)**

(ii) Explain any **two** ways in which the combination mentioned in (i) could improve maize yield.

_____

_____

_____

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2. a. State any **two** signs of Tuberculosis in sheep.

_____

_____

**(2 marks)**

b. Explain any **two** ways in which feeding goats is important.

_____

_____

_____

_____

_____

_____

_____

**(4 marks)**

c. State any **two** functions of proteins in the feed for sheep.

_____

_____

_____

_____

**(2 marks)**

3. **Table 1** shows information extracted on a farm. Use it to answer questions that follow.

**Table 1**

| | **Amount (K)** |
|---|---|
| Opening valuation | 150,000 |
| Cost of feed | 80,000 |
| Milk sales | 475,000 |
| Cost of veterinary services | 22,000 |
| Depreciation | 35,000 |
| Closing valuation | 394,000 |

**3. (Continued)**

(i) Prepare a profit and loss account.

**(6 marks)**

(ii) Explain any **one** way in which inclusion of opening valuation is important in a financial record.

_____

_____

_____

4. a. **Figure 1** shows **two** methods of land drainage for a farm. Use it to answer questions **(i)** and **(ii)**.

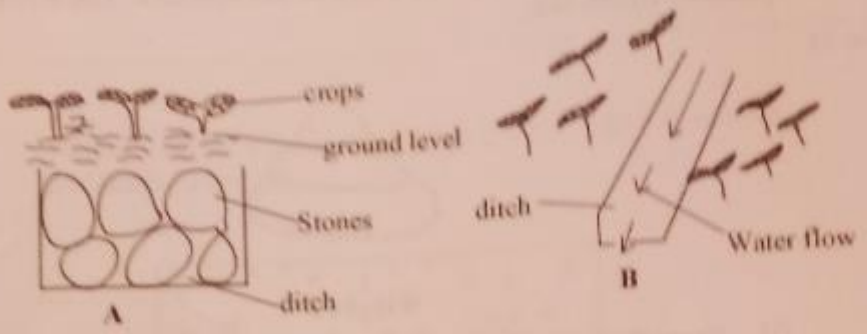


**Figure 1**

(i) Name the method of land drainage labeled **A** and **B**.

**A** _____ **(1 mark)**

**B** _____ **(1 mark)**

(ii) Give any **one** advantage of land drainage labeled **A**.

_____

_____ **(1mark)**

b. Give any **two** improved farm technologies that increase livestock production.

_____

_____

_____ **(2 marks)**

5. a. State any **two** ways in which soil pH could be decreased.

_____

5. **(Continued)**

b. **Figure 2** is a diagram showing a type of soil structure. Use it to answer questions **(i)** and **(ii)**.

**Figure 2**

(i) Name the type of soil structure.

_____

**(1 mark)**

(ii) Explain **one** way in which the type of soil structure mentioned in **(i)** is **not** ideal for crop production.

_____

_____

**(2 marks)**

c. State any **two** ways in which break-even analysis of financial records is important to a farmer.

_____

_____

**(2 marks)**

**6.** Goats showed the following signs of a disease attack:

- Abortions in nannies.
- Enlargement of scrotum and testes in billies.

Use the information to answer question **6 (i)** to **(iii)**.

(i) Name the disease that attacked the goats.

_____

**(1 mark)**

(ii) State any **two** ways of controlling the spread of the disease.

_____

_____

6. **(Continued)**

(iii) Name the causative agent of the disease.

_____ **(1 mark)**

7. a. **Figure 3** shows a livestock grazing system. Use it to answer questions **(i)** and **(ii)**.

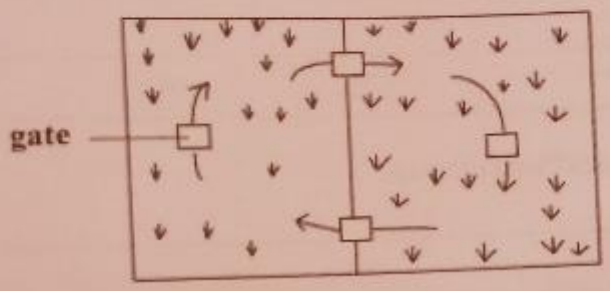


**Figure 3**

(i) Identify the grazing system.

_____ **(1 mark)**

(ii) Explain any **two** ways in which the grazing system is important in pasture management.

_____

_____

_____

_____

_____

_____ **(4 marks)**

b. Give any **one** advantage of differed grazing system.

_____

**7. (Continued)**

c. Describe any **two** ways through which nitrogen would be depleted from the soil.

_____

_____

_____

_____

_____

_____

**(4 marks)**

d. Define the term "land drainage".

_____

_____

_____

**(1 mark)**

**8.** a. Explain any **two** ways in which controlling burning of pasture in the dry season is important.

_____

_____

_____

_____

_____

_____

**(4 marks)**

b. Explain **one** way in which method of storing conserved pasture would affect its quality.

_____

_____

_____

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9. **Figure 4** is a flow diagram for biogas production. Use it to answer questions **(i)** to **(iii)**.

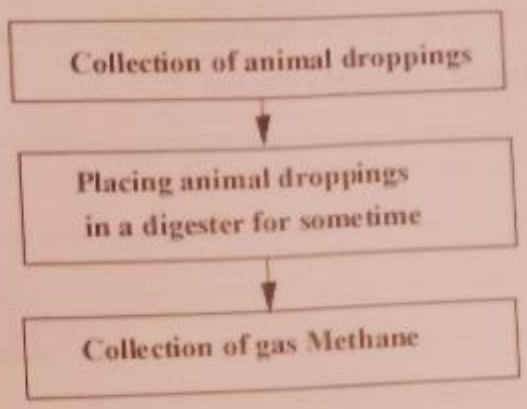


**Figure 4**

(i) Name the process that takes place in a digester.

_____ **(1 mark)**

(ii) Give any **one** advantage of collecting methane gas.

_____

_____ **(1 mark)**

(iii) Explain any **two** ways in which the biogas production mitigates climate change.

_____

_____

_____

_____ **(4 marks)**

10. Outline **four** steps involved in silage making.

_____

_____

_____

**Section B** (30 marks)

Answer all the **three** questions in this section.

**11.** With the aid of a well labelled diagram, describe the functions of any **four** parts of a digestive system of a chicken.

**(10 marks)**

Continued/...

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12. Explain any **five** effects of soil degradation on vegetable production.

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13. A certain village has the following development agencies at their disposal:
    - Credit and savings cooperative
    - Agricultural Development and Marketing Corporation (ADMARC)
    - Extension Service Unit

    Explain any **five** ways in which the farmers in the village would use the available resources to ensure food security.

(10 marks)

**END OF QUESTION PAPER**

This paper contains 12 printed pages.

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EXAMINATION NO. _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

**2022 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

# AGRICULTURE

**Subject Number: M012/I**

**Time Allowed: 2 hours**
**8:00 – 10:00 am**

**Monday, 5 September**

## PAPER I

(100 marks)

**Theory**

**Instructions**

1. **This paper contains 12 printed pages. Please check.**
2. This paper has **two** sections, **A** and **B**. Section **A** has **ten** questions and Section **B**, **three** questions.
3. Answer **all** questions in the spaces provided.
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 | | | |
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| 4 | | | |
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| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| | **Total** | | |

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**Section A** (70 marks)

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

1. a. Give any **one** limitation of solar power on a farm.

(1 ma

b. State any **two** ways in which agricultural infrastructure agencies support livestock farmers in Malawi.

(2 ma

c. State any **two** ways in which land drainage is important in crop producti

(2 m

d. State any **two** functions of living organisms in the soil.

(2

e. Explain any **two** ways in which trading of agricultural commodities community level is important.

2. a. Describe **one** way of achieving each of the following fruiting management in mushroom production:

(i) monitoring spawn

_____

_____

_____

**(2 marks)**

(ii) watering

_____

_____

_____

**(2 marks)**

b. Explain any **one** way in which soils with good consistency influences crop production.

_____

_____

_____

_____

**(2 marks)**

3. a. State any **two** factors that make a machine reach the scrap value earlier.

_____

_____

_____

_____

**(2 marks)**

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**(Continued)**

b. A farmer purchases a ridger amounting to K240,000 with a provisional annual depreciation of 20%.

(i) Calculate the value of the ridger after 3 years using reduced balance method.

(4 marks)

(ii) State any **two** benefits of knowing depreciation rate of the ridger to a farmer.

_____

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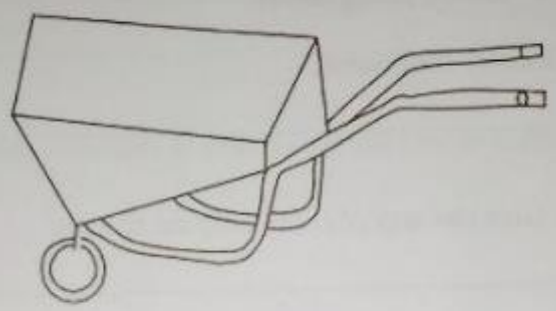
4. a. Describe the first **two** steps that are followed when establishing furrow irrigation.

_____

_____

_____ **(4 marks)**

b. The **figure below** is a diagram showing a farm implement.



(i) Name the farm implement.

_____ **(1 mark)**

(ii) Give any **one** use of the farm implement in crop production.

_____ **(1 mark)**

(iii) State **one** reason for commonly using the farm implement in Malawi.

_____

_____ **(2 marks)**

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5. a. State any **two** steps that are involved when preparing a site for tr mango seedlings.

_____

_____

_____

(2

b. A farmer observed the following symptoms of mango disease more weather than in dry weather.

- White powder growth on leaves and young fruits.
- Curled young leaves.

(i) Identify the disease.

_____

(1

(ii) Give **one** way of controlling the disease.

_____

_____

(1

(iii) Give **one** reason for the appearance of more symptoms of the di in wet weather than in dry weather.

_____

_____

(2 ma

6. a. Give any **two** aims of chicken improvement.

_____

_____

(2 m

b. Describe the relationship between demand and supply in a market.

_____

_____

_____

_____

7. a. Explain any **one** way in which farm budgeting is important.

_____

_____

_____

**(2 marks)**

b. State **one** disadvantage of inbreeding in livestock.

_____

_____

_____

**(1 mark)**

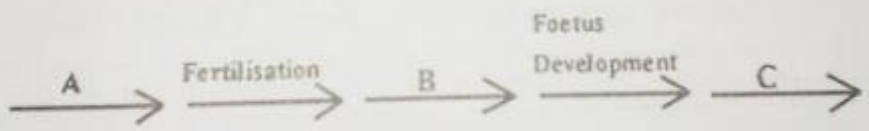
c. Name any **two** examples of goat breeds used for milk production.

_____

_____

**(2 marks)**

8. a. The **flow diagram below** shows some processes in the reproduction of cattle.




(i) Name the processes A and B.

A _____ **(1 mark)**

B _____ **(1 mark)**

(ii) State any **two** signs of process C in a cow.

_____

_____

_____

_____

**(2 marks)**

Continued/...

2022

8. (Continued)

b. State any **two** ways in which agro based industries encourage farmers to produce high quality produce.

_____

_____

_____

_____ (2 ma

9. a. The **Table below** shows results of an experiment on maize yield using different systems of irrigation.

| Plot | System of Irrigation | Maize Yield (kg) |
|---|---|---|
| 1 | overhead | 3500 |
| 2 | drip | 4000 |
| 3 | surface | 3200 |

(i) Identify the type of irrigation that would be recommended to a farmer.

_____ (1 ma

(ii) Give a reason for the answer in **b (i)**.

_____

_____ (1 ma

(iii) State any **two** variables that were kept constant in the experime

_____

_____ (2 ma

(iv) Explain **one** way in which results from the experiment would be evaluated.

_____

_____

_____ (2 ma

**(Continued)**

b. Explain any **two** factors to consider when feeding cattle.

_____

_____

_____

_____

**(4 marks)**

**10.** a. A farmer observed a sudden colour change of mycelium from white to green during mushroom fruiting.

(i) Give any **two** causes of the colour change of the mycelium.

_____

_____

_____

**(2 marks)**

(ii) Mention any **two** ways of controlling the situation.

_____

_____

_____

_____

**(2 marks)**

b. State any **two** activities which are done in crop improvement.

_____

_____

_____

_____

**(2 marks)**

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EXAMINATION NO.: _____

Page 10 of 12

2022

**Section B** (30 marks)

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

11. Explain any **five** characteristics of cows to be selected for breeding.

2022

EXAMINATION NO.: _____

Page 11 of 12

M012/I

12. Explain any **five** ways in which conservation agriculture would deal with climate change.

EXAMINATION NO.: _____

Page 12 of 12

2022

13. Describe any **five** factors that affect pasture seed rate.

**(10 marks each question)**

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EXAMINATION NO.: _____

# THE MALAWI NATIONAL EXAMINATIONS BOARD

## 2022 MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION

# AGRICULTURE

**Subject Number: M012/II**

**esday, 30 August**

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

## PAPER II

(40 marks)

**Practical**

**tructions**

- **This paper contains 5 printed pages. Please check.**
- This paper has two sections: A and B.
- Answer all questions in the spaces provided. Marks are indicated against each part of the question.
- Write your **Examination Number** on **all** pages.
- 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.

| Question Number | Tick if answered | Do not write in these columns | |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| | **Total** | | |

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EXAMINATION NO.: _____



2022

**Section A** (20 marks)

1. Describe a procedure to be followed when constructing a wooden vegetable garden fence. In the description include any **four** materials required.

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**EXAMINATION NO.:** _____ **M012/II**
**Page 3 of 5**

Form 4 students were provided with the following:

- sandy soil (50g)
- clay soil (50g)
- two funnels labelled **A** and **B**
- 2 beakers with known volume of water
- 2 measuring cylinders
- 2 filter papers

Describe an experiment the students would carry out to identify the two different textural classes of the soil. In the description include the **procedure**, and draw a setup of the experiment to show the expected results.

**Procedure**

_____

_____

_____

_____

_____

_____

_____

_____

_____

**Expected results**

2022

## Section B (20 marks)

3. You are provided with specimens: labeled **W, X, Y, Z.**

   a. Identify planting materials from the specimen.

   b. State any **three** observable characteristics that makes specimen **Y** differe from Specimen **Z.**

   c. Draw specimen **X** and label any **three** parts.

You are provided with specimen **A**.

a. Draw specimen **A** and label any **two** parts.

**(3 marks)**

b. Mention the class of livestock feed for specimen **A**.

_____

**(1 mark)**

c. State any **two** livestock feed nutrient that is found in specimen **A**.

_____

_____

**(2 marks)**

d. Explain any **two** ways in which using specimen **A** as a planting material is important.

_____

_____

_____

_____

**(4 marks)**

**END OF QUESTION PAPER**

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