



**MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

**2021/2022 ACADEMIC YEAR (REGULAR)
FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**MAIN EXAMINATIONS FOR CERTIFICATE IN GENERAL
AGRICULTURE**

COURSE CODE: CAG 014

COURSE TITLE: CROP PESTS, DISEASES AND WEEDS MANAGEMENT

DATE: 21ST APRIL, 2022

TIME: 3-5PM

INSTRUCTIONS TO STUDENTS

Answer all questions in section A

Answer any TWO questions in section B

Total Marks =70

MMUST observes ZERO tolerance to examination cheating

SECTION A 30 Marks

1. Define the following terms:(5 marks)
 - a) Crop Pests:
 - b) Crop Diseases:
 - c) Weeds:
 - d) Phytopathogens:
 - e) Telescopic development:

2. Name the pathogen causal agent of the following diseases in plants (6 marks)
 - a) Ralstonia wilt in tomato
 - b) Damping-off
 - c) Soft Rot disease
 - d) Early blight
 - e) TLCV
 - f) Gall disease

3. Name **THREE** field crop pests and briefly describe how they can be managed (9 marks)

4. Explain how you would know if a tomato plant is infected with Bacterial/Ralstonia wilt (10 marks)

Séction B 40 Marks

5. As an Agricultural Officer working with Ministry of Agriculture, a farmer has invited you to diagnose aphids' infection in his vegetable farm. Describe the signs and symptoms that would indicate/confirm the invasion by the pest (20 marks)

6. Name **FIVE** weeds and state how each can be controlled (20 marks)

7. State and explain the IPM programs (20 marks)

8. State and briefly explain the benefits of use of IPM Programs (20 marks)



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**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS
MAIN EXAMINATION**

**FOR THE
CERTIFICATE IN AGRICULTURE**

COURSE CODE: CAG 015

COURSE TITLE: FARM MANAGEMENT AND ACCOUNTS

DATE: 26TH APRIL, 2022

TIME: 12-2 PM

INSTRUCTIONS TO CANDIDATES

Total=70 Marks

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Answer ALL questions in section A and any TWO in section B

SECTION A: Answer all questions (30 Marks)

1. State THREE responsibilities of management. (3 marks)
2. Outline FIVE principles of record keeping. (5 marks)
3. List any FIVE physical records. (5 marks)
4. Name at least FIVE details contained in an order. (5 marks)
5. Describe steps in planning the farm layout (4 marks)
6. Distinguish between a formal and an informal farm plan. (4 marks)
7. Explain the features of a good farm plan. (4 marks)

SECTION B: Answer any two questions (40 marks)

8. Prepare a partial budget to find out whether or not Ms Nyaranga should buy a nuts' Sheller (20 marks)

Use the following information:

Ms Nyaranga grows 4 ha of groundnuts with an average yield of 900 Kg/Ha. The price of groundnuts is Kes 0.20 per Kg per entire nuts but only 8.5 cents per Kg for damaged ones.

She usually spends Kes 75 on casual labour to shell her groundnuts by hand and is considering buying a mechanical Sheller for Kes 90 which should last for five years. Ms Nyaranga could get a loan for this purchase over three years at 5 percent interest a year.

If the Sheller would produce 35 per cent damaged nuts instead of none that she now gets with hand labour, should she buy the Sheller?

9. Discuss the goals of farm management. (20 marks)
10. Describe the role of government in reducing risk and uncertainty in agriculture (20 marks)



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**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR (REGULAR)**

**FIRST YEAR SECOND SEMESTER MAIN EXAMINATIONS FOR
CERTIFICATE IN GENERAL AGRICULTURE**

COURSE CODE: CAG 018

COURSE TITLE: ANIMAL BREEDING WITH BIOTECHNOLOGY

DATE: 25TH APRIL, 2022

TIME: 12-2PM

INSTRUCTIONS TO STUDENTS

Answer all questions in section A and any TWO questions in section B

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SECTION A: ANSWER ALL QUESTIONS (30 Marks)

1. Define the following terms;
 - a) Close Breeding **(1 mark)**
 - b) Outcrossing **(1 mark)**
 - c) Grading-up **(1 mark)**
 - d) Inbreeding **(1 mark)**
 - e) Crossbreeding **(1 mark)**
2.
 - a) Define the term Animal Breeding **(2marks)**
 - b) State the importance of Animal breeding**(5marks)**
3.
 - a) Outline and explain the disadvantages of inbreeding **(5marks)**
 - b) Describe the signs of Heat in animals **(5marks)**
4. Describe the effects of Genetic Engineering on;
 - a) Environment **(3marks)**
 - b) Human and Animal Health **(5 marks)**

SECTION B: ANSWER TWO QUESTIONS (40marks)

5.
 - a) Define Animal Welfare **(2marks)**
 - b) Outline the benefits of Animal Welfare **(4marks)**
 - c) State and explain the advantages of Artificial Insemination **(14 marks)**
6.
 - a) Describe Artificial Insemination**(3marks)**
 - b) Outline the disadvantages of Artificial Insemination **(5 marks)**
 - c) Describe the five (5) freedoms of Animal welfare**(12 marks)**
7.
 - a) Define the term Cloning **(3marks)**
 - b) Outline the advantages of Cloning **(7 marks)**
 - c) State and explain the disadvantages of cloning **(10marks)**



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**2021/2022 ACADEMIC YEAR (REGULAR)
FIRST YEAR SECOND SEMESTER EXAMINATIONS**

MAIN EXAMS

CERTIFICATE IN GENERAL AGRICULTURE

COURSE CODE: CAG 016

COURSE TITLE: FARM LAYOUT AND SOIL CONSERVATION

DATE:

TIME:

INSTRUCTIONS TO STUDENTS

Answer all questions in section A

Answer any TWO questions in section B

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SECTION A

1. Differentiate between the following terms.
 - I. Soil and water conservation (2marks)
 - II. Soil erosion and water pollution (2marks)
 - III. Irrigation and drainage (2marks)
2. Outline any 5 methods of controlling soil erosion (5marks)
3. State 2 methods of drainage system in agriculture (2marks)
4. What are the importance of using a cover crop as a method of conserving soil (4marks)
5. Outline the causes of soil erosion (5marks)
6. State 5 factors that influences the crop water required (5marks)
7. Outline any 2 methods of irrigation systems used in Agriculture (3marks)

SECTION B

8.
 - a. what is a cover crop (2marks)
 - b. Explain any 3 effects of soil erosion (6marks).
 - c. Discuss 6 conservation measures of soil that are used today. (12marks)
9.
 - a. Explain the importance of water conservation for livestock and crop production (6marks)
 - b. Discuss the conservation measures that are used by farmers today (14marks)
10.
 - a. What is irrigation (2marks)
 - b. Explain any 3 criteria that are used for evaluation of water quality for irrigation purposes (6marks)
 - c. How is irrigation system important to farmers. Discuss. (12marks).



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2021/2022 ACADEMIC YEAR

**FIRST YEAR SECOND SEMESTER MAIN EXAMINATION FOR CERTIFICATE IN
GENERAL AGRICULTURE**

COURSE CODE: CAG 019

COURSE TITLE: AGRICULTURAL EXTENSION AND EDUCATION


DATE: 20TH APRIL, 2022

TIME: 12-2PM

INSTRUCTIONS TO CANDIDATES

- **Total Marks= 70**
- **TIME: 2 Hours**

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Answer all questions in section A and any TWO questions in section B.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

QUESTION ONE

- i. Differentiate between the terms agricultural education and agricultural extension (4 marks)
- ii. Discuss some of the objectives of an agricultural extension program (8 marks)
- iii. Define the term extension approach (2 marks)
- iv. Explain the three facets of agricultural extension (6 marks)
- v. Define the term feedback as used in agriculture extension and education (2 marks)
- vi. State and explain any four elements of communication process (8 marks)

SECTION B (ANSWER ANY 2 QUESTIONS)

QUESTION 2

Discuss different forms of communication in Agriculture Extension and education

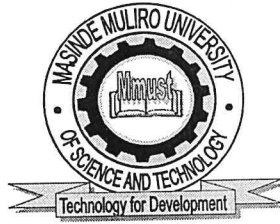
(20 marks)

QUESTION 3

- a) Discuss ways which can be used to effectively manage a communication process (12 marks)
- b) List and discuss any four categories of barriers of communication in extension (8 marks)

QUESTION 4

- a) Give three examples of method demonstration subjects in extension approach (3 marks)
- b) Discuss challenges facing agricultural extension (12 marks)
- c) Highlight some of the qualities of a successful extension agent (5 marks)



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**FIRST YEAR SECOND SEMESTER MAIN EXAMINATION FOR CERTIFICATE IN
GENERAL AGRICULTURE**

COURSE CODE: CAG 013

COURSE TITLE: CROP BREEDING AND SEED PRODUCTION

DATE: 20TH APRIL, 2022

TIME: 8-10AM

INSTRUCTIONS TO CANDIDATES

- Answer all questions in section A and any TWO questions in section B.

TIME: 2 Hours

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SECTION A (ANSWER ALL QUESTIONS 30 MRKS)

1. Define the following terms

- (i) Plant breeding (2mrks)
- (ii) Breed (2mrks)
- (iii) Seed (2mrks)
- (iv) Inbreeding (2mrks)
- (v) Germplasm (2mrks)
- (vi) Hybrid vigour(2mrks)

2. Name any two pathogens that can cause diseases in plants (2mrks)

3. State four ways in which one can develop resistance to pests in plants (4 mrks)

4. Define the term biofortification and state four objectives for the biofortification breeding program (6mrks)

5. Discuss any three factors influencing seed vigor (6mrks)

SECTION B (ANSWER ANY TWO QUESTIONS)

6. Discuss different methods of hybridization in self and cross pollinated crops (20mrks)

7. (a) Define the term polyploidy (2mrks)

(b) Name one chemical that is used to induce polyploidy in plants (1mrk)

(c) Discuss any five benefits of polyploidy (10mrks)

(d) List any two disadvantages of polyploidy plant (2mrks)

(e) Define the term mutation and list the four groups of mutations (5mrks)

8. Discuss the different biotechnological methods used in plant breeding (20 mrks)



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COURSE CODE: CAG 019

COURSE TITLE: AGRICULTURAL EXTENSION AND EDUCATION


DATE: 20TH APRIL, 2022

TIME: 12-2PM

INSTRUCTIONS TO CANDIDATES

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- **TIME: 2 Hours**

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Answer all questions in section A and any TWO questions in section B.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

QUESTION ONE

- i. Differentiate between the terms agricultural education and agricultural extension (4 marks)
- ii. Discuss some of the objectives of an agricultural extension program (8 marks)
- iii. Define the term extension approach (2 marks)
- iv. Explain the three facets of agricultural extension (6 marks)
- v. Define the term feedback as used in agriculture extension and education (2 marks)
- vi. State and explain any four elements of communication process (8 marks)

SECTION B (ANSWER ANY 2 QUESTIONS)

QUESTION 2

Discuss different forms of communication in Agriculture Extension and education (20 marks)

QUESTION 3

- a) Discuss ways which can be used to effectively manage a communication process (12 marks)
- b) List and discuss any four categories of barriers of communication in extension (8 marks)

QUESTION 4

- a) Give three examples of method demonstration subjects in extension approach (3 marks)
- b) Discuss challenges facing agricultural extension (12 marks)
- c) Highlight some of the qualities of a successful extension agent (5 marks)



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COURSE CODE: CAG 019

COURSE TITLE: AGRICULTURAL EXTENSION AND EDUCATION

DATE: 20TH APRIL, 2022

TIME: 12-2PM

INSTRUCTIONS TO CANDIDATES

- **Total Marks= 70**
- **TIME: 2 Hours**

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Answer all questions in section A and any TWO questions in section B.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

QUESTION ONE

- i. Differentiate between the terms agricultural education and agricultural extension (4 marks)
- ii. Discuss some of the objectives of an agricultural extension program (8 marks)
- iii. Define the term extension approach (2 marks)
- iv. Explain the three facets of agricultural extension (6 marks)
- v. Define the term feedback as used in agriculture extension and education (2 marks)
- vi. State and explain any four elements of communication process (8 marks)

SECTION B (ANSWER ANY 2 QUESTIONS)

QUESTION 2

Discuss different forms of communication in Agriculture Extension and education

(20 marks)

QUESTION 3

a) Discuss ways which can be used to effectively manage a communication process (12 marks)

b) List and discuss any four categories of barriers of communication in extension

(8 marks)

QUESTION 4

a) Give three examples of method demonstration subjects in extension approach (3 marks)

b) Discuss challenges facing agricultural extension (12 marks)

c) Highlight some of the qualities of a successful extension agent (5 marks)

CAG 012



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2021/2022 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS
MAIN EXAMINATION FOR
CERTIFICATE IN GENERAL AGRICULTURE**

COURSE CODE: CAG 012.

COURSE TITLE: ANNUAL AND PERENNIAL CROPS

DATE: 26TH APRIL, 2022

TIME: 8-10 AM

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in section A and any TWO in section B

Time: 2 hours

Total Marks=70

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SECTION A: ANSWER ALL QUESTIONS (30 MARKS))

1. Differentiate between annual and perennial crops stating their importance(3marks)
2. State the ecological requirements of beans(4marks)
3. Discuss 5 nutritional benefits of cowpea (5marks)
4. Name 10 factors affecting cane quality(5marks)
5. State symptoms of any banana disease(5marks)
6. Discuss the steps followed in the establishment of kales(8marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

7. Discuss the steps followed on establishment of tea (20marks)
8. Discuss the major pest and diseases that attack coffee (20 marks)
9. Discuss maize production under the following sub-headings;(20 marks)
 - a) Major pest and their control measures
 - b) Major weeds and their control measures
 - c) Major diseases, symptoms and their control measures