



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**THIRD YEAR SECOND SEMESTER MAIN EXAMINATIONS FOR
THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE
AND BIOTECHNOLOGY**

COURSE CODE: AAH 302

**COURSE TITLE: ANIMAL DISEASES, PARASITES AND
HEALTH MANAGEMENT**

DATE: 26TH APRIL, 2022

TIME: 12-2 PM

INSTRUCTIONS TO CANDIDATES

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

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

SECTION A SHOERT ANSWER QUESTIONS (30 MARKS)

1) Describe various types of host/agent interactions in disease development (6 marks)

2) Explain mechanisms available for pathogens to establish themselves to cause disease

(6marks)

3) Highlight various methods used in disease eradication programmes (6 marks)

4) State the pathogen that causes each of the following diseases:

a) Foot and mouth disease (1 mark)

b) Coccidiosis (1mark)

c) East Coast Fever (ECF) (1mark)

d) Haemoncosis (1mark)

e) Tuberculosis (1mark)

f) Swamp fever (1mark)

5) Highlight the effects of parasites on their hosts (6 marks)

SECTION B ESSAY QUESTIONS (40 MARKS)

6) Discuss factors that may lead to vaccination failure (20marks)

7) Write an essay on aetiology, transmission, diagnostic signs and control of Brucellosis in cattle (20 marks)

8) Describe the life cycle of *Taeniasaginata* (20 marks)



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**MAIN CAMPUS
MAIN EXAMINATIONS**

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

**FIRST YEAR SECOND SEMESTER MAIN EXAMINATIONS FOR THE
DEGREE OF B.Sc. IN: FISHERIES AND AQUACULTURE, AND ANIMAL
PRODUCTION**

COURSE CODE: AAH124

COURSE TITLE: PRINCIPLES OF AQUACULTURE

DATE: 26TH APRIL, 2022

TIME: 12-2 PM

INSTRUCTIONS TO CANDIDATES

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

TIME: 2 Hours

Total marks=70

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SECTION A SHORT ANSWER QUESTIONS (30 MARKS)

1) Highlight four phyla of the Sub-kingdom Protozoa. Give one characteristic for each.

(6 marks)

2) Highlight the economic importance of the Phylum Cnidaria **(6 marks)**

3) State three characteristics of the Phylum Platyhelminthes **(6 marks)**

4) Explain why it is important to study arthropods **(6 marks)**

5) Outline four characteristics of the Phylum Chordata **(6 marks)**

SECTION B ESSAY QUESTIONS (40 MARKS)

6) Describe any four classes of the phylum Mollusca **(20 marks)**

7) Discuss physiological and morphological adaptations that enable amphibians to live both in water and on land **(20marks)**

8) Describe characteristics of the Class Mammalia **(20marks)**

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**MAIN CAMPUS
MAIN EXAMINATIONS**

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

**FIRST YEAR SECOND SEMESTER MAIN EXAMINATIONS FOR THE
DEGREE OF B.Sc. IN: FISHERIES AND AQUACULTURE, AND ANIMAL
PRODUCTION**

COURSE CODE: AAH124

**COURSE TITLE: *GENERAL ZOOLOGY*
~~PRINCIPLES OF AQUACULTURE~~**

DATE: 26TH APRIL, 2022

TIME: 12-2 PM

INSTRUCTIONS TO CANDIDATES

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

TIME: 2 Hours

Total marks=70

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

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE
OF B.Sc. IN: ANIMAL PRODUCTION & PROCESSING**

COURSE CODE: AAP 223

COURSE TITLE: DAIRY CATTLE PRODUCTION

DATE: 25TH APRIL, 2022

TIME: 12-2 PM

INSTRUCTIONS TO CANDIDATES

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

TIME: 2 Hours

Total marks=70

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SECTION A: Answer all questions (30 Marks)

Describe the characteristics and suitability of any ONE dairy breed that farmers can keep in

- (a) Semi-arid areas of Kenya (3 marks)
(b) Highland areas of Kenya (3 marks)

- (a) Outline THREE ways for detecting pregnancy in dairy cattle. (3 marks)
(b) Highlight THREE major causes of abortion in dairy cattle. (3 marks)

- (a) Describe pre-disposing factors that lead to mastitis infection in dairy. (2 marks)
(b) Outline FOUR prevention four control methods of mastitis. (2 marks)

- (a) Explain how to deal with a cow that has difficulties during and after calving. (5 marks)

- (b) Explain THREE functions of the alveolus (alveoli) of the mammary glands (3 marks)

Describe TWO genetic and FOUR management factors that contribute to low milk yield and quality (6 marks)

SECTION B: Answer any two questions (40 marks)

Discuss the management of cows on the following stages of lactation

- (a) Early lactation (5 marks)
(b) Mid lactation (7 marks)
(c) Late lactation (5 marks)
(d) Dry Period (3 marks)

Identify and explain management and policy factors affecting affect profitability of dairy enterprise in Kenya. (20 marks)

Many small-scale dairy farms farmers do not make optimum profits because of longer calving intervals. Describe how a farmer can reduce the calving interval. (20 marks)



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MAIN CAMPUS
UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**MAIN
THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN AGRICULTURE AND BIOTECHNOLOGY**

COURSE CODE: SBN 302

COURSE TITLE: PLANT TISSUE AND ORGAN CULTURE

DATE: 29TH APRIL, 2022

TIME: 8-10AM

INSTRUCTION TO CANDIDATES

Answer all questions in section A and 2 questions from section B.

TOTAL MARKS= 70

TIME: 2 hours

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Section A: Answer ALL Questions (30 Marks)

Question One

Define the following terms

(10 Marks)

- | | | |
|--------------------------------|------------------------|------------------------|
| i. Totipotency, | iv. Organogenesis, | viii. Tissue culture, |
| ii. Explant, | v. Callus, | ix. Macronutrients and |
| iii. Somatic
embryogenesis, | vi. Stock solution, | Micronutrients. |
| | vii. Micropropagation, | |

Question Two

a) List the components used in nutrient media and their function

(10 Marks)

b) Briefly describe how the following materials are sterilized in the tissue culture laboratory:

- | | |
|--------------------|-------------------------|
| i. Water, | vi. forceps, |
| ii. Explant, | vii. nutrient media, |
| iii. paper towels, | viii. antibiotics, |
| iv. pipettes, | ix. laminar flow bench, |
| v. conical flasks, | x. Petri dishes. |

(10 Marks)

Section B Answer TWO Questions (40 Marks)

Question Three

a) List the importance of tissue culture in crop improvement

(10 Marks)

b) Why is the adoption of tissue culture technology slow in Kenya?

(5 Marks)

c) How can the problem in (b) above be addressed?

(5 Marks)

Question Four

a) Differentiate between macronutrients and micronutrients used in nutrient media

6 Marks)

b) List four vitamins used in nutrient media

(4 Marks)

c) List the steps used in the preparation of nutrient media

(10 Marks)

Question Five

a) Differentiate between protoplast culture and somaclonal variation

(2 Marks)

b) List the uses of protoplast culture

(5 Marks)

c) What are the limitations of protoplast culture

(3 Marks)

d) Prepare stock solution for 1mg/ml measuring up to 100ml

(5 Marks)

e) Explain $c_1v_1 = c_2v_2$

(5 Marks)



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MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR**

FIRST YEAR FIRST SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
MASTER OF SCIENCE IN SOIL SCIENCE**

COURSE CODE: AsL 804

COURSE TITLE: SOIL FERTILITY AND PLANT NUTRITION

DATE:

TIME:

INSTRUCTIONS TO CANDIDATES

Answer any **FOUR** questions

TIME: 2 Hours

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MASINDE MULIRO UNIVERSITY OF
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UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE
OF
MASTER OF SCIENCE IN SOIL SCIENCE

COURSE CODE: MS 301
COURSE TITLE: SOIL FERTILITY AND NUTRIENT MANAGEMENT

TIME:

DATE:

INSTRUCTIONS TO CANDIDATES

1. Write your name and registration number in the space provided.

2. Answer all questions.

3. The use of calculators is prohibited.

1. Soils in Kakamega County were taken for analysis. The results showed that most of the soils had a low pH and sandy. The farmers consulted a soil expert to determine the sources of the problems, their effects to soil fertility and long term solutions. Being an expert discuss what you could have told the farmers. **(15 Marks)**
2. Discuss the factors that need to be considered in calculating fertilizer recommendations in annual crops. **(15 Marks)**
3. Farmer in Makinduni wanted to know the problem with their crops. They collectively agreed to send the below photo (Fig. 1) to the horticultural experts for a solution. Discuss some of the factors that may contribute to wrong diagnosis of the problem. **(15 Marks)**

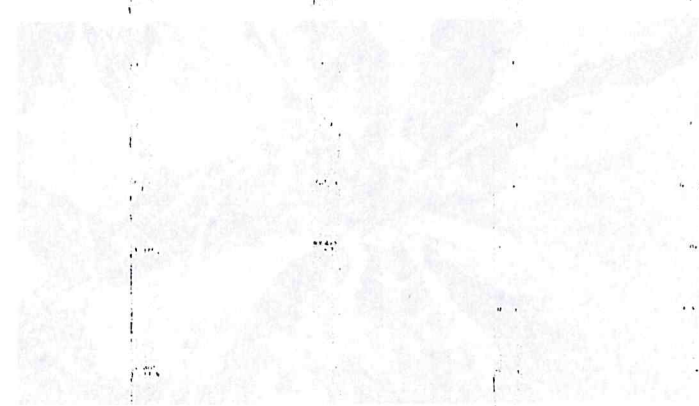


Figure 1: A photo showing spotted leaves of sukuma wiki with purple discoloration

4. Discuss the importance of soil organic matter and factors hindering their effective release of nutrients to plants. **(15 Marks)**
5. Discuss the advantages and disadvantages of either using Decision Support System for Agrotechnology Transfer (DSSAT) over NUTMON (NUTrient MONitoring) model. **(15 Marks)**

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The second part of the paper is devoted to the analysis of the...
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**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS
FOR THE DEGREE
OF**

MASTER OF SCIENCE IN PLANT HEALTH MANAGEMENT

COURSE CODE: APH 815

COURSE TITLE: ADVANCE WEED SCIENCE MANAGEMENT

DATE: _____ TIME: _____

Answer ALL questions

TIME: 2 hours

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QUESTION ONE

- a) What is a plant pest (2)
- b) Outline and briefly explain the principles of plant pest control (10)

QUESTION TWO

- A) What is a crop plant (2)
- B) With the help of named plant/plants, discuss parasitic plants indicating how they affect crop plants (10)

QUESTION THREE

Discuss use / benefits of a sod in the cultivation of fruit orchard (10)

QUESTION FOUR

Discuss selectivity of chemical weed control (10)

QUESTION FIVE

Outline and explain biological strategies used for weed management in crops (10)

QUESTION SIX

Explain hydroponic crop production as a strategy for weed management (10)

