University of choice

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)
SCHOOL OF AGRICULTURE, VETERINARY SCIENCES AND TECHNOLOGY (SAVET)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
FIRST YEAR FIRST SEMESTER 2023/2024 ACADEMIC YEAR

MAIN EXAMS
OF
BACHELOR OF AGRICULTURE AND BIOTECHNOLOGY/AGED/EDUCATION)

COURSE CODE: ACR 204

COURSE TITLE: PASTURES AND FODDER

DATE: 18.12.23 **TIME: 12-2PM**

INSTRUCTIONS TO CANDIDATES

This paper is divided into two sections, **A and B**. Answer ALL Questions in SECTION A and any Two in SECTION B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 printed Pages. Please Turn Over

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

Q1. State the differences between Napier grass (*Pennisetum purpureum*) and Lucerne (*Medicago sativa*) in terms of nature of roots, stem growth habit, the leaves and inflorescence. **(6 marks)**

Q2. Briefly explain FOUR positive and THREE negative impacts of grazing and/or defoliation in forage management **(7 marks)**

Q3. Sugarcane tops are major feed resources that has not been widely exploited in the sugar producing regions in Kenya.

(a) List FOUR characteristics that make the above feeds not suitable for dairy livestock. **(2 marks)**

(b) Briefly explain any ONE methods that can be used to improve their feeding value and also prolong the shelf-life of sugarcane tops. **(5 marks)**

Q4. State FOUR reasons why leguminous forages are important for inclusion in the grass or cereal by-products based diets when feeding a dairy cow. **(4 marks)**

Q5. Give SIX reasons to explain why majority of the smallholders have adopted improved forages in Kenya. **(6 marks)**

SECTION B: ASWER ANY TWO, 15 MARKS EACH)

Q7. County Government of Narok has contracted you to improve the quantity and quality of locally available natural pastures for farmers.

(a) List THREE of improved ley grasses and TWO forage legumes you will recommend for such climatic conditions. **(5 marks)**

(b) Describe in detail how such improved ley pasture can be oversown into the natural pasture. **(6 marks)**

(c) State the management/grazing practices that you will recommend to farmers so that pasture field remain productive throughout the 3 to 4 years. **(4 marks)**

Q8. Napier grass head smut disease caused by a fungus *Ustilago kameruniensis* is a threat to quality forage production on smallholder farms of Eastern Africa.

(a) Describe the disease symptoms that contribute to reduced forage productivity by the disease **(6 marks)**

(b) Discuss methods that farmers can use to minimize the impact of this disease on their farms. **(9 marks)**

Q9. Hydroponic fodder production is an emerging innovation to solve the problem of quality feed availability.

(a) State FIVE advantages of hydroponic fodder production when compared to convention methods **(5 marks)**

(b) List the types of fodder to be used and describe step by step how you can plant and manage hydroponic fodder. **(10 marks)**