



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2023/2024

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION, BACHELOR OF EDUCATION SCIENCE (AGRICULTURE/BIOLOGY; MATHS/BIOLOGY)

AAA 3200: PRINCIPLES OF CROP PRODUCTION

DATE: DECEMBER 2023

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Explain how deep tillage enhances crop production in Arid and Semi-Arid Lands (ASALs) in Kenya (4 marks)
- b) Analyse the concept of agro-ecological zoning in relation to crop production in Kenya (5 marks)
- c) Discuss three (3) soil chemical properties that influence crop production (6 marks)
- d) List examples of non-soil materials that can be used as growth media during soilless crop production (5 marks)
- e) Describe two (2) simple rapid field methods of determining soil physical or chemical properties (4 marks)
- f) Outline the interventions necessary to increase productivity in the following farming systems (6 marks)
 - (i) Irrigated farming systems



MUST is ISO 9001:2015 and



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- (ii) Rainfed systems
- (iii) Root crop system

QUESTION TWO (20 MARKS)

- a) Outline the key differences in practices between organic and conventional crop production (10 marks)
- b) Design an organic production system for a named field crop (10 marks)

QUESTION THREE (20 MARKS)

- a) Outline the challenges to horticultural crop production for the export market (10 marks)
- b) Design a greenhouse system for commercial vegetable production (10 marks)

QUESTION FOUR (20 MARKS)

- a) Identify the challenges that face crop production in Arid and semi-arid areas of Kenya (10 marks)
- b) Outline the mitigation strategies for the identified challenges above (10 marks)

