



# MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF AGRICULTURAL SCIENCES

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE IN  
AGRICULTURAL EDUCATION AND EXTENSION  
BACHELOR OF EDUCATION (SCIENCE)  
BACHELOR OF EDUCATION (SPECIAL NEEDS)**

**AGR 308: ANNUAL CROPS PRODUCTION**

**Date:**

**Time:**

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**INSTRUCTION:** Answer Question **One (Compulsory)** And any Other **Two** Questions.

**QUESTION ONE (30 MARKS)**

- a) With an example in each case, explain three reasons why the classification of crops is important in research (3 marks)
- b) Explain two uses of each of the following annual crops
- i) Green grams (2 marks)
  - ii) Barley (2 marks)

- iii) Linseed (2marks)
- iv) Cotton (2 marks)
- c) Explain four ways farmers can manage challenges in wheat production (4 marks)
- d) Giving specific crop examples in each, explain how the following factors affect annual crops
  - i) Altitude (2 marks)
  - ii) Rainfall (2 marks)
  - iii) Soil P<sup>H</sup> (2 marks)
- e) Explain why pigeon peas and pole beans are categorized as annual crop yet they are indeterminate (1 mark)
- f) Giving an example of crop infected, describe two symptoms of the following infestations in annual crops
  - i. Wire worm (2 marks)
  - ii. Bruchids (2 marks)
- g) Giving a specific crop example in each case, explain two reasons for the following practices in annual crops (4 marks)
  - i. Training
  - ii. Manuring

**QUESTION TWO (20 MARKS)**

- a) Describe the production of common beans under the given headings (10 marks)
  - i) Ecological requirements
  - ii) Anthracnose symptoms
  - iii) Planting
  - iv) Weeding
  - v) Harvesting
- b) Citing a specific disease example in each case, explain five strategies used in the management of diseases in finger millet (10 marks)

**QUESTION THREE (20 MARKS)**

- a) Explain the production of cassava under the following headings (10 Marks)
- i) Ecological conditions
  - ii) Planting
  - iii) Weeding
  - iv) Mealy bug damage
  - v) Harvesting
- b) Describe the production of Irish potatoes under the following headings (10 marks)
- i) Ecological requirements
  - ii) Chitting
  - iii) Hilling
  - iv) Fertilization
  - v) Post-harvest practices

**QUESTION FOUR (20 MARKS)**

- a) Citing specific goals, discuss seven roles of annual crop production in Kenya towards achieving Vision 2030 (14 marks)
- b) Discuss three management practices farmers can adopt in improving tobacco production in Kenya (6 marks)

**QUESTION FIVE (20 MARKS)**

- a) Describe paddy rice production under the following headings
- i) Ecological requirements (4 marks)
  - ii) Water Management (5 marks)
  - iii) Nutrient management (4 marks)
  - iv) Rice blast damage (2 marks)
- b) Describe how sunflower production can be improved under the following headings
- i) Planting (2 marks)
  - ii) Management of nematodes (3 marks)