



# **MACHAKOS UNIVERSITY**

**University Examinations for 2021/2022 Academic Year**

**SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES**

**DEPARTMENT OF AGRICULTURAL SCIENCES**

**SECOND YEAR SPECIAL / SUPPLEMENTARY EXAMINATION FOR  
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION**

**BACHELOR OF EDUCATION (SCIENCE)**

**BACHELOR OF EDUCATION (SPECIAL NEEDS)**

**AGR 201: PRINCIPLES OF CROP PRODUCTION**

**DATE: 31/8/2022**

**TIME: 2.00-4.00 PM**

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## **INSTRUCTIONS:**

**Answer question ONE and any other TWO questions**

### **SECTION A: COMPULSORY: (30 MARKS)**

#### **QUESTION ONE (30 MARKS)**

- a) Differentiate between reproduction and propagation in crop production (2 marks)
- b) Explain four physiological disorders brought about by uneven watering of crops (4 marks)
- c) Describe the process of compound layering (4 marks)
- d) Explain four benefits of minimum tillage (4 marks)
- e) Explain four ways in which light affect crop production (4 marks)
- f) Explain four roles of ethylene in plant growth and development (4 marks)
- g) Describe the features of “zone II” agroecological zone according to FAO classification (4 marks)
- h) Explain four changes that occur on the seedling during hardening off (4 marks)

**SECTION B: Answer any TWO Questions (40 Marks)**

**QUESTION TWO (20 MARKS)**

- a) Explain five methods of cultural weed control (10 marks)
- b) Discuss FIVE strategies in biological pest management (10 marks)

**QUESTION THREE (20 MARKS)**

- a) Describe the process of whip grafting (10 marks)
- b) Discuss four factors to considered in designing a silo storage facility (10 marks)

**QUESTION FOUR (20 MARKS)**

With the aid of a well labelled diagram in each case, describe the following methods of layering as used in plant propagation

- a) Tip layering (5 marks)
- b) Mould layering (5 marks)
- c) Simple layering (5 marks)
- d) Air layering (5 marks)

**QUESTION FIVE (20 MARKS)**

- a) Discuss five effects of temperature on crop production (10 marks)
- b) Discuss five shortcomings of conventional tillage practice (10 marks)