



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION AGR  
307: PRINCIPLES OF CROP PRODUCTION

DATE: 23/7/2019

TIME: 2.00-4.00 PM

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## INSTRUCTIONS:

Answer *ALL* questions from Section A and any other *TWO* from Section B:

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

#### QUESTION ONE

- Describe THREE key principles in a farming system (3 marks)
- What is DIF and how does it affect crop growth (3 marks)
- Giving examples, differentiate between positively photoblastic and negatively photoblastic seeds (4 marks)
- Define the term “vernillisation” and explain how it affects crop production (4 marks)
- Describe FOUR physiological disorders brought about by uneven watering (4 marks)
- Describe FOUR instances where hardening-off is done (4 marks)
- Explain the FIVE major groups of plant quarantine (5 marks)
- Describe the features of “zone II” agroecological zone according to FAO classification (3 marks)

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

#### QUESTION TWO

Describe the following farming systems giving their constraints (20 marks)

- The tea-based system

- b) The pyrethrum-potato system
- c) The group-ranching system
- d) The maize and dairy system

### **QUESTION THREE**

Citing relevant examples, describe the following methods of plant propagation (20 marks)

- a) Whip grafting
- b) Wedge grafting
- c) Layering
- d) T- budding

### **QUESTION FOUR**

Write short notes on the following methods of weed control (20 marks)

- a) Biological weed control
- b) Chemical weed control
- c) Cultural weed control
- d) Mechanical weed control

### **QUESTION FIVE**

Explain the role, deficiency symptoms and the role of the following plant nutrients(20 marks)

- a) Nitrogen
- b) Calcium
- c) Magnesium
- d) Zinc