



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

DIPLOMA IN AGRICULTURAL EDUCATION AND EXTENSION

AGR 201: PRINCIPLES OF CROP PRODUCTION

DATE: 6/5/2019

TIME: 2:00 – 4:00 PM

INSTRUCTION TO CANDIDATES:

Answer question one and any other two questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Describe THREE key principles in a farming system (3 marks)
- b) Explain what is DIF and how it affect crop growth (3 marks)
- c) Giving an example, in each case, differentiate between positively photoblastic and negatively photoblastic seeds (4 marks)
- d)
 - i) Define the term “vernisation” and explain how it affects crop production. (2 marks)
 - ii) Explain how it affects crop production (2 marks)
- e) Describe FOUR physiological disorders caused by uneven watering. (4 marks)
- f) Describe FOUR instances under which hardening-off is done (4 marks)
- g) Explain the FIVE major groups of plant quarantine measures. (5 marks)
- h) Describe three features of “zone II” agroecological zone according to FAO classification (3 marks)

QUESTION TWO (20 MARKS)

- a) Describe the following farming systems giving their constraints
- i) The tea-based system (3 marks)
 - ii) The pyrethrum-potato system (3 marks)
 - iii) The group-ranching system (3 marks)
 - iv) The maize and dairy system (3 marks)
- b) For each of the farming system in question 2 (a), explain their constraints. (8 marks)

QUESTION THREE (20 MARKS)

Citing relevant examples, describe the following methods of plant propagation

- i) Whip grafting (5 marks)
- ii) Wedge grafting (5 marks)
- iii) Layering (5 marks)
- iv) T- budding (5 marks)

QUESTION FOUR (20 MARKS)

Describe how a farmer can use the following methods of weed control

- i) Biological weed control (5 marks)
- ii) Chemical weed control (5 marks)
- iii) Cultural weed control (5 marks)
- iv) Mechanical weed control (5 marks)

QUESTION FIVE (20 MARKS)

- a) Describe the roles of the following plant nutrients
- i) Nitrogen (2.5 marks)
 - ii) Calcium (2.5 marks)
 - iii) Magnesium (2.5 marks)
 - iv) Zinc (2.5 marks)
- b) For each of the nutrients in question 5 (a), describe their deficiency symptoms in plants. (10 marks)