



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRIBUSINESS AND TRADE

AGR 307: PRINCIPLES OF CROP PROTECTION

DATE: 4/12/2019

TIME: 8.30-10.30 AM

INSTRUCTIONS;

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

SECTION A: COMPULSORY: (30 MARKS)

QUESTION ONE (30 MARKS)

- Explain the THREE major cause of yield loss due to weeds in crop production (3 marks)
- State and Explain the THREE types of identification methods of pest and disease species (6 marks)
- Explain the THREE steps followed in pest damage assessment (6 marks)
- Explain FOUR advantages of Integrated Pest Management (IPM) over all other control methods (8 marks)
- Giving two examples of known major pests or diseases, explain the economic impact on the production of the following SIX crop types; cowpea, cassava, maize, beans, cabbage and tomato (6 marks)
- Explain meaning of production constraint in crop enterprise in biophysical terms (1 mark)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION TWO (20 MARKS)

- Explain the FOUR emerging crop loss mitigation ways of compensating farmers as a result of increased climate variability or change in crop production systems (12 marks)

- b) Referring to current input production costs, calculate the cost of tomato production on an acre-plot showing the inputs required with estimate value in Kenya Shillings (KES) (8 marks)

QUESTION THREE (20 MARKS)

- a) Explain FIVE control methods of pests on crops in different production systems, giving percentage use in consumer market in Kenya (10 marks)
- b) Explain TWO examples of indigenous knowledge technology (ITK) of FIVE crop pests applied in Kenya (10 marks)

QUESTION FOUR (20 MARKS)

- a) Give TWO examples of insect pollinator in mango production in Kenya, giving information on their hives and availability (8 marks)
- b) Given that one of the above (a) pollinators contributes 90% of bean pollination, calculate actual grain yield loss of four 90kg-bags if the crop (bean) is grown in a greenhouse where no access by pollinators (12 marks)

QUESTION FIVE (20 MARKS)

- a) Explain FIVE mandate roles of Pesticide Control Products Board (PCPB) in Kenya (10 marks)
- b) Describe the FOUR steps of agro chemical product licensing procedure in Kenya (10 marks)