



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

SBT 303: PRINCIPLES OF PLANT PATHOLOGY

DATE: 29/11/2019

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)

- a) Explain FOUR economic importances of plant diseases (4 marks)
- b) Explain FOUR ways you can diagnose mollicutes infection in a plant (4 marks)
- c) Explain FOUR sources of primary inoculum of infectious plant diseases (4 marks)
- d) Explain THREE ways in which a pathogen gains entry into the host plant (3 marks)
- e) Explain FOUR host factors affecting the spread of plant diseases (4 marks)
- f) Explain FOUR methods aimed at eradicating plant diseases (4 marks)
- g) Describe the THREE strategies used in biological control of plant diseases (3 marks)
- h) Describe FOUR steps in pre-penetration stage in plant disease development (4 marks)

SECTION B: Answer any TWO Questions (40 Marks)

QUESTION TWO (20 MARKS)

- a) Discuss SIX strategies a pathogen utilizes during overwintering period (12 marks)
- b) Discuss FOUR pre-existing plant defense mechanisms which are chemical in nature that a plant may utilise in an effort to fight plant pathogens (8 marks)

QUESTION THREE (20 MARKS)

Discuss Late blight disease (*Phytophthora infestans*) of tomatoes under the following headings

- a) Signs and symptoms (3 marks)
- b) Transmission (3 marks)
- c) Host range (2 marks)
- d) Control/management (12 marks)

QUESTION FOUR (20 MARKS)

- a) Describe the procedure of conducting DAS-ELISA (10 marks)
- b) Discuss FIVE human factors affecting plant disease epidemiology (10 marks)

QUESTION FIVE (20 MARKS)

Discuss Bacterial wilt disease (*Ralstonia spp.*) of potatoes under the following headings

- a) Signs and symptoms (3 marks)
- b) Transmission (3 marks)
- c) Host range (2 marks)
- d) Control/management (12 marks)