



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRIBUSINESS MANAGEMENT AND TRADE

FOURTH YEAR SPECIAL/ SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

KST 302: PRINCIPLES OF PLANT PATHOLOGY

DATE: 20/01/2021

TIME: 2.00-4.00 PM

INSTRUCTIONS:

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

SECTION A: COMPULSORY: (30 MARKS)

QUESTION ONE

- a) Explain any FOUR human factors that contribute towards development of plant diseases (4 marks)
- b) Explain FOUR methods of diagnosing plant viruses (4 marks)
- c) Describe the FOUR steps in the pre-penetration stage of plant diseases (4 marks)
- d) Explain THREE methods aimed at preventing susceptible host tissue from coming in contact with the pathogen (3 marks)
- e) Explain any FOUR pathogen 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 ways of passive dissemination of plant pathogens (4 marks)

SECTION B: Answer any TWO Questions (40 Marks)

QUESTION TWO

- a) Describe any FOUR chemicals produced by pathogens in order to initiate a disease (8 marks)
- b) Discuss the SIX pre-existing structural plant defense mechanisms utilised by a plant in an effort to fight plant pathogens (12 marks)

QUESTION THREE

Describe Cyst nematode (*Globodera spp.*) of potatoes under the following headings

- a) Life cycle (10 marks)
- b) Symptoms (10 marks)

QUESTION FOUR

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

QUESTION FIVE

Discuss tomato spotted wilt virus (TSWV) infecting tomato under the following headings

- a) Transmission (10 marks)
- b) Control/management (10 marks)