



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SBT 303: PRINCIPLES OF PLANT PATHOLOGY

DATE: 15/4/2019

TIME: 11.00-1.00 PM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and any two questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A

QUESTION ONE (30 MARKS) COMPULSORY

- a) Describe three ways through which pathogen cause diseases to plants (3 marks)
- b) Explain any three methods of pathogen penetration in plants (3 marks)
- c) Explain ways through which plant fungal pathogens survive adverse environmental conditions (3 marks)
- d) Explain the following terms (3 marks)
 - i. Phytoalexins
 - ii. Lignituber
 - iii. Appressorium
- e) Explain why diseased plant exhibits a high rate of respiration (3 marks)
- f) Outline the chemicals produced by pathogens on plants (3 marks)
- g) Explain why *Agrobacterium tumefaciens* is being used in genetic engineering (3 marks)
- h) Classify plant parasitic nematodes based on feeding mechanisms. (3 marks)
- i) Describe above ground symptoms seen in plants infested by Root Knot Nematodes (3 marks)
- j) States three examples of plants which live parasitically on other plants (3 marks)

SECTION B

QUESTION TWO (20 MARKS)

Discuss the various stages of disease cycle in plants

QUESTIONS THREE (20 MARKS)

Discuss the effects of pathogens on plant physiology

QUESTIONS FOUR (20 MARKS)

Discuss the various plant defensive mechanisms against pathogens

QUESTIONS FIVE (20 MARKS)

Discuss any three plant bacterial diseases, their prevention and control