



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR  
BACHELOR OF AGRICULTURE EDUCATION AND EXTENSION

SBT 305: PRINCIPLES OF PLANT PATHOLOGY

DATE:

TIME:

---

## Instructions

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

## SECTION A

Question 1. – Compulsory (30 marks)

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

## SECTION B

### Question 2

Discuss the various stages of disease cycle in plants

(20 marks)

**Questions 3**

Discuss the effects of pathogens on plant physiology (20 marks)

**Questions 4**

Discuss the various plant defensive mechanisms against pathogens (20 marks)

**Questions 5**

Discuss any three plant bacterial diseases, their prevention and control (20 marks)