



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SBT 205: PHYTOPATHOGENS

DATE: 15/3/2022

TIME : 2:00 – 4:00 PM

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## INSTRUCTIONS

ANSWER ALL QUESTIONS IN SECTION A AND ANY OTHER TWO QUESTIONS IN SECTION B

### SECTION A (COMPULSORY)

1. Answer the following questions precisely
  - a. Explain the importance of studying plant pathogens (3 marks)
  - b. Highlight the common methods and mechanisms used by plant pathogens to infect their hosts (3 marks)
  - c. Distinguish between biotrophic and necrotrophic fungal plant pathogens (3 marks)
  - d. Briefly describe the significance of *Fusarium* as a plant pathogen (3 marks)
  - e. Explain how fungal pathogens are transmitted from one host to another (3 marks)
  - f. Distinguish between basidiomycetes and ascomycetes as significant plant pathogens (3 marks)
  - g. Outline how *Puccinia graminis* leads to losses in crop yields (3 marks)
  - h. State three structural adaptations of *Verticillium* species to survive in the environment (3 marks)
  - i. Describe the main types of known bacterial pathogenicity factors (3 marks)
  - j. Describe plant pathogens belonging to the mollicute group (3 marks)

## **SECTION B**

### **ANSWER ANY TWO QUESTIONS IN THIS SECTION**

2. Describe the modes of transmission of viruses between plant hosts (20 marks)
3. Discuss the plant pathogenic fungus *Sclerotinia sclerotiorum* and the disease it causes in plants (20 marks)
4. Discuss plant pathogenic basidiomycetes (20 marks)
5. Discuss the major infectious plant diseases caused by phytopathogens on Kenyan agricultural crops and their management (20 marks)