



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR..... SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION

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) –

- a) Briefly explain any three methods of pathogen penetration in plants. (3 marks)
- b) State ways through which plant fungal pathogens survive adverse environmental conditions. (3 marks)
- c) Explain the following terms
 - i. Phytoalexins (1 mark)
 - ii. Pathovar (1 mark)
 - iii. Appressorium (1 mark)
- d) Explain why a diseased plant exhibits a high rate of respiration. (3 marks)
- e) Explain why *Agrobacterium tumefaciens* is being used in genetic engineering (3 marks)
- f) With respect to feeding mechanisms, classify plant parasitic nematodes. (3 marks)
- g) Highlight above ground symptoms seen in plants infested by Root Knot Nematodes (3 marks)
- h) With examples, describe three parasitic plants (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION TWO (20 MARKS)

Discuss control of parasitic higher plants

QUESTION THREE (20 MARKS)

Discuss the effects of pathogens on plant physiology

QUESTION FOUR (20 MARKS)

Discuss the various plant defensive mechanisms against pathogens

QUESTION FIVE (20 MARKS)

Discuss any three plant fungal diseases, their prevention and control