

THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME – BOTANY – LEVEL 05
FINAL EXAMINATION – 2025/2026
BOU 5301 / BOU 3101 – PLANT PATHOLOGY
DURATION: TWO (02) HOURS



Date: 01st December 2025

Time: 9.30am – 11.30am

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

ILLUSTRATE YOUR ANSWER WITH FULLY LABELED DIAGRAMS WHEREVER NECESSARY.

1. a) Briefly outline the nature and composition of viruses
(20 marks)
- b) What are Koch's postulates?
(20 marks)
- c) Why are Koch's postulates modified for pathogens such as viruses?
(10 marks)
- d) **List out** the properties used to identify and characterize plant viruses
(50 marks)

2. Write a concise account on the following:
 - a) Structural barriers involved in host resistance against entry and spread of plant pathogens.
(50marks)
 - b) Macrocytic fungi and microcytic fungi
(50marks)

3. a) Explain how vascular-wilt pathogens block or damage the xylem tissue of the host plants.
(20 marks)
- b) Name and classify the causative organism of "vascular wilt of tomato".
(10 marks)
- c) Briefly describe the characteristics of the above-mentioned pathogen, emphasizing the types of spores it produces, their distinctive features, its mode of entry, and how its developed within the host.
(40 marks)
- d) Outline the diagnostic symptoms of this disease.
(12 marks)
- e) **List out** the measures taken to control this disease
(18 marks)

4 a) Define the terms disease epidemic and pandemic.

(10marks)

b) What are the **three (3) main** elements/factors that should be present in a favorable manner for the development of an epidemic.

(25marks)

c) Briefly explain the relationship between these factors and the typical progress curve of a plant disease epidemic.

(65marks)

5. With the aid of **fully labeled diagrams** describe the following:

a) The mycelia and sclerotia of *Rhizoctonia solani*

(20marks)

b) Structure of typical fungal haustorium

(25marks)

d) Morphology of the Sporangiophores and sporangia of the downy mildew

(30marks)

e) The diagnostic symptoms and asexual spores of the causative organism of early blight of potato

(25marks)

6. Give brief account of the **role/roles played** by each of the following to establish pathogen host relationship

a) Enzyme -Cellulases

(35marks)

b) Water

(35marks)

c) Appressoria

(30marks)

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