THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME – BOTANY- LEVEL 05
FINAL EXAMINATION – 2024/2025
BYU5301/BYE5301 – PLANT PATHOLOGY
DURATION: Two (02) HOURS

Date: 29th November 2024 **Time: 9 30 a.m.- 11.30 a.m.**

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

ILLUSTRATE YOUR ANSWER WITH FULLY LABELED DIAGRAMS WHEREVER NECESSARY.

1. Describe the characteristic morphological symptoms and the causative organisms of the following diseases:

    a) Early blight of potato
    b) Club root disease of crucifers
    c) White root disease of rubber
    d) Rust of coffee
    e) Smut disease of sugar cane
    f) Blister blight disease of tea

2. a) Define the term "disease" with respect to plant pathology.

    b) Describe the effect of plant pathogens on the following host physiological processes:

    i. Respiration

    ii. Photosynthesis

    iii. Translocation of nutrients and water

    iv. Transpiration.

3. a) Describe diagnostic symptoms of the disease powdery mildew.

    b) Name and classify the causative organisms of the powdery mildew disease.

    c) Briefly explain how various genera of powdery mildews are differentiated based on the morphology of their reproductive structures (asexual and sexual).

    d) With the aid of fully labelled diagrams, briefly outline the disease cycle of powdery mildew in roses.

4. Write an essay on the use of non-chemical methods for disease management.

5. a) Name one common bacterial soft rot disease and provide the causative organism.

   b) Why is this disease named as 'soft rot'?

   c) List the types of cell wall degrading enzymes involved in the initiation and development of this disease.

   d) Explain the mode of action and function of **each** of the enzymes mentioned above.

6. Write a concise account on:

   a) The different types of spores produced by macrocyclic rusts.

   b) Wind/air and water as dispersal agents of plant pathogens.

   c) Induced structural barriers.