THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME - BOTANY - LEVEL 05

FINAL EXAMINATION – 2006

BTU 3102/BTE 5102 – PLANT PATHOLOGY I

DURATION : TWO AND A HALF (2 ½) HOURS

DATE : 13th November 2006 **TIME: 9.30 a.m. – 12.00 noon**

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

ILLUSTRATE YOUR ANSWER WITH FULLY LABELLED DIAGRAMS WHEREVER NECESSARY.

01. (a) Briefly describe the nature and composition of viruses.

(b) Outline the properties used in the identification and characterization of plant pathogenic viruses.

02. (a) What are signs and symptoms of disease?

(b) Citing examples, describe the following terms with reference to plant diseases.

i. Anthracnoses

ii. Hyperplasia

iii. Mosaics

iv. Phyllody

v. Wilts

03. (a) What are (i) downy mildews and (ii) powdery mildews?
Briefly describe the taxonomic group of the causative organism/s and the diagnostic symptoms for each of these diseases in your answer.

(b) With the aid of labelled diagrams, explain how you would identify the different pathogenic genera based on:

i. Sporangiophore morphology of the downy mildews.

ii. Sexual reproductive structures of the powdery mildews.

(c) Illustrate how the downy mildews and the powdery mildews colonize the host tissue.

04. (a) What roles do cell wall degrading enzymes play in disease development?

(b) Briefly describe the different types of cell wall degrading enzymes involved in pathogenesis.

(c) What effect is brought about by the activity of cell wall degrading enzymes on host tissue?

05. (a) State three (03) economically important diseases of rubber (Hevea brasiliensis) in Sri Lanka.

(b) For each of the diseases you mention in (a):
i. Name and classify the causative organism.
ii. Describe the diagnostic symptoms.

(c) For any one (01) of these diseases:
i. Outline the disease cycle.
ii. Briefly describe the control measures taken to manage this disease in Sri Lanka.

06. Write short accounts on:

(a) Microcyclic rusts and macrocyclic rusts.

(b) Insect vectors of plant pathogenic viruses.

(c) Biological control of plant diseases.