



THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME

BOTANY – LEVEL 05

FINAL EXAMINATION – 2019/2020

BYU5301/BYE5301/BOU3101 – PLANT PATHOLOGY

DURATION: TWO (02) HOURS

Date: 07th January 2020

Time: 1.30 p.m. – 3.30 p.m.

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

ILLUSTRATE YOUR ANSWERS WITH FULLY LABELLED DIAGRAMS WHEREVER NECESSARY.

01. (a) Give three (03) economically important diseases of rubber (*Hevea brasiliensis*) commonly found in Sri Lanka.
- (b) For each of the diseases you mention in (a):
- Name the causative organism.
 - Describe the diagnostic symptoms.
- (c) For any one (01) of the diseases above:
- Classify the causative organism.
 - Outline the disease cycle.
 - Recommend suitable control measures.
02. Write short notes on the following:
- Bacterial soft rots.
 - Biological control of plant diseases.
 - Protectant fungicides and systemic fungicides.
03. (a) How would you investigate an unknown leaf disease in a flowering plant thought to be caused by a fungus?
- (b) If your investigations reveal that the causative organism is a Deuteromycetous fungus, diagrammatically illustrate the types of conidia-bearing asexual fruit bodies you could expect to see.

- (c) Name and classify one (01) probable genus for each of the types you illustrate.
- (d) If you do not observe the formation of any conidia-bearing asexual fruit bodies, name and classify two (02) genera which could be your causative organism.
04. (a) What is an inoculum?
- (b) List out the types of inocula produced by different groups of plant pathogens, giving examples for the types you mention.
- (c) Describe how viral inocula are dispersed.
05. (a) What is a blight?
- (b) Name two (02) blight diseases of economic importance on potato (*Solanum tuberosum*) in Sri Lanka.
- (c) Name and classify the causative organism of each of the diseases you mention in (b) and distinguish the diseases based on:
- Characteristic symptoms.
 - Asexual spores of the pathogens.
- (d) For any one (01) of the above diseases:
- Briefly outline the disease cycle.
 - Recommend suitable methods of disease management.
06. (a) What main functions are played by cell wall degrading enzymes during plant disease development?
- (b) Name the important types of cell wall degrading enzymes and describe the chemical action of each of these enzyme types.
- (c) How does cell wall degrading enzyme activity affect symptom development on diseased host tissue?