

THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME - BOTANY - LEVEL 5

FINAL EXAMINATION - 2013/2014

BOU3101 - PLANT PATHOLOGY

BTU3102/BTE5102 - PLANT PATHOLOGY I



DURATION: TWO (02) HOURS

DATE: 23rd June 2014

TIME: 1.00 p.m to 3.00 p.m.

ANSWER ANY FOUR (04) OF THE FOLLOWING QUESTIONS.

ILLUSTRATE YOUR ANSWERS WITH FULLY LABELED DIAGRAMS WHEREVER NECESSARY.

1. (a) What are Koch's postulates?
(b) Why are the Koch's postulates modified for pathogens such as viruses?
(c) Outline the properties used in the identification and characterization of plant pathogenic viruses.
2. (a) Name two (02) economically important leaf diseases of rubber (*Hevea brasiliensis*), commonly found in Sri Lanka.
(b) For each of the diseases you mention in (a), name and classify the causative organism and describe the diagnostic symptoms.
(c) For any one (01) of the diseases you describe above:
(i) Outline the disease cycle.
(ii) Briefly describe the control measures taken to manage this disease.
3. Write short notes on:
(a) Protectant fungicides and systemic fungicides.
(b) Induced structural barriers in plants.
(c) Progress curve of disease.

4. (a) What are rusts and smuts?
- (b) Describe the type/s of spore/s produced by rusts and smuts.
- (c) With the aid of fully labeled diagrams, illustrate how the spores of these two fungal pathogens germinate to form basidiospores.
- (d) Give one (01) historically important rust disease in Sri Lanka, naming and classifying the causative organism.
- (e) Explain how the rust disease you mention in (d) spreads and recommend suitable control measures.
5. Briefly describe the following and their roles in disease development:
- (a) Toxins.
- (b) Cell wall degrading enzymes.
- (c) Growth regulators.
6. (a) How would you investigate an unknown leaf disease 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 structures you would 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 structures, name and classify two (02) other genera which could be your causative organism.

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