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UNIVERSITI SAINS MALAYSIA

Second Semester Examination  
Academic Session 2007/2008

April 2008

**BGT 213/3 – Plant Pathology**  
***[Patologi Tumbuhan]***

Duration: 3 hours  
*[Masa : 3 jam]*

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Please ensure that this examination paper contains FIVE printed pages before you begin the examination.

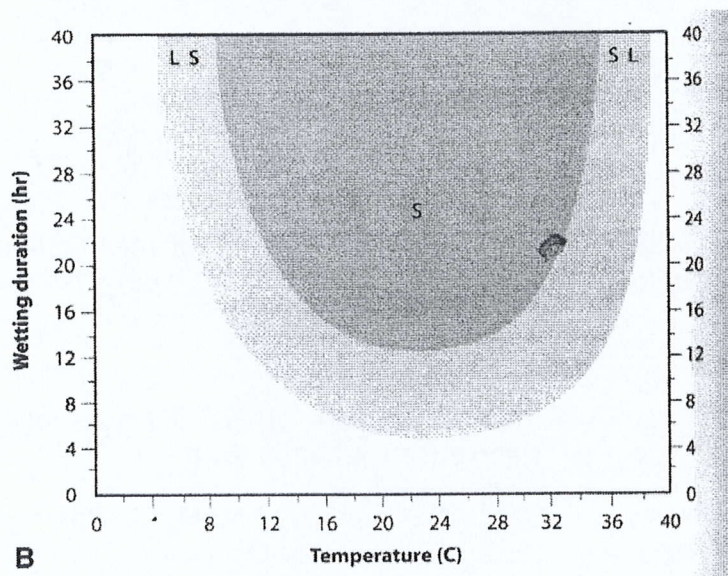
*[Sila pastikan bahawa kertas peperiksaan ini mengandungi LIMA muka surat yang bercetak sebelum anda memulakan peperiksaan ini.]*

**Instructions:** Answer **FIVE** (5) out of **SIX** (6) questions, in English or Bahasa Malaysia. Each question carries 20 marks.

**Arahan:** Jawab **LIMA** (5) daripada **ENAM** (6) soalan yang diberikan dalam Bahasa Inggeris atau Bahasa Malaysia. Tiap-tiap soalan bernilai 20 markah.]

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1. Explain the term 'disease cycle' by using suitable example. (20 marks)
  
2. By referring to the gene-for-gene theory proposed by Flor, discuss the the existence of 'true resistance' in plants against plant pathogens. (20 marks)
  
3. Figure 1 (taken from Agrios, 2005) shows the requirement of a plant pathogen, *Alternaria mali* to cause infection on apple leaves. Using this example, discuss the diease triangle in plant pathology by including suitable technical term. (20 marks)



**Figure 1.** Leaf wetness and temperature requirements for the leaf-spotting fungus *Alternaria mali*. To cause light (L) or severe (S) infection.

4. [a] The following are **FIVE** (5) common plant disease symptoms. Write a brief description of each symptom and provide illustration where ever possible.

[i] Blight

[ii] Damping-off

[iii] Anthracnose

[iv] Dieback

[v] Rust

(10 marks)

[b] Give a brief description on the disease infection caused by powdery mildew fungi.

(10 marks)

5. Write an essay on bacteria wilt disease caused by *Ralstonia (Pseudomonas) solanacearum*.

(20 marks)

6. [a] Virus diseases in plants are difficult to control. Describe possible methods that could be use in controlling these diseases.

(10 marks)

[b] A few higher plants are parasitic on other plants and cause diseases. Give an example of a hemi-parasite plant and write short notes based on this particular example.

(10 marks)