
UNIVERSITI SAINS MALAYSIA

First Semester Examination
2014/2015 Academic Session

December 2014 / January 2015

BST 313/3 – Ecology and Management of Weeds
[Ekologi dan Pengurusan Rumpai]

Duration: 3 hours
[Masa : 3 jam]

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

[Sila pastikan bahawa kertas peperiksaan ini mengandungi EMPAT 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.]*

In the event of any discrepancies, the English version shall be used.

[Sekiranya terdapat sebarang percanggahan pada soalan peperiksaan, versi Bahasa Inggeris hendaklah diguna pakai].

1. Describe the differences and the similarities between Integrated Weed Management (IWM) and Integrated Biological Management (IBM).

[Jelaskan perbezaan dan persamaan antara Pengurusan Rumpai Bersepadu (PRB) dan Pengurusan Biologi Bersepadu (PBB).]

(20 marks / 20 markah)

2. Name **TWO** (2) noxious grassy weeds in rice fields. With a diagram describe the life cycle of one of the named grassy weed.

*[Namakan **DUA** (2) rumpai jenis rumput di sawah padi. Dengan gambarajah jelaskan kitar hidup satu rumpai jenis rumput yang telah dinamakan.]*

(20 marks / 20 markah)

3. *Mimosa pigra* is one of the most noxious weeds in Malaysia. Provide **FOUR** (4) reasons why populations of the species are successfully colonizing the new habitats. Explain the control and management of this weed from invading new habitats.

*[Mimosa pigra merupakan antara rumpai paling noksius di Malaysia. Berikan **EMPAT** (4) sebab populasi rumpai ini berjaya menakluki habitat baru. Terangkan pengawalan dan pengurusan rumpai daripada merebak ke habitat baru.]*

(20 marks / 20 markah)

4. Describe the characteristics and provide **TWO** (2) examples each for the following groups of aquatic weeds :

*[Huraikan ciri-ciri dan beri **DUA** (2) contoh untuk setiap kumpulan rumpai akuatik berikut :]*

- [a] Submerged weeds
[Rumpai tenggelam]
- [b] Emergent weeds
[Rumpai emergent]
- [c] Floating weeds
[Rumpai terapung]
- [d] Algae
[Alga]

(20 marks / 20 markah)

5. Aquatic algae are considered a nuisance when excessive growth interferes with water quality. Discuss factors which could trigger blue-green algal (Cyanobacteria) blooms and its negative impacts to the freshwater lentic ecosystem.

[Alga akuatik dianggap satu masalah apabila pertumbuhan yang berlebihan menjejaskan kualiti air. Bincangkan faktor yang menyebabkan ledakan alga biru hijau (Cyanobacteria) dan kesan negatifnya terhadap ekosistem air tawar lentik.]

(20 marks /20 markah)

6. Aquatic weeds have caused serious problems in many water bodies. Elaborate and provide suitable examples for the following effects of aquatic weeds on aquatic organisms

[Rumpai akuatik telah menyebabkan masalah yang serius di dalam pelbagai persekitaran akuatik. Huraikan dengan contoh kesan rumpai akuatik terhadap organism akuatik.]

[a] Habitat destruction.

[Kemusnahan habitat.]

(10 marks / 10 markah)

[b] Reduction in aquatic food resources.

[Pengurangan sumber makanan akuatik.]

(10 marks / 10 markah)