
UNIVERSITI SAINS MALAYSIA

First Semester Examination
2014/2015 Academic Session

December 2014 / January 2015

BVT 311/4 - Medical and Urban Entomology
[Entomologi Perubatan dan Bandar]

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].

- 2 -

1. [a] Name a species of subterranean termite that could be found in the following location:

[Namakan satu spesies anai-anai tanah yang boleh dijumpai di lokasi berikut :]

- [i] Under the piles of newspaper in the storeroom.
[Di bawah timbunan surat khabar lama di dalam stor.]
- [ii] Under a fallen tree trunk in the garden.
[Di bawah batang pokok yang tumbang di dalam taman.]
- [iii] Door frames of a house.
[Di bingkai pintu rumah.]
- [iv] Wooden book shelves of a professor's office.
[Rak buku kayu di dalam pejabat profesor.]

(4 marks / 4 markah)

- [b] Compare and differentiate the **FOUR** (4) common methods of control against subterranean termites.

*[Banding dan bezakan **EMPAT** (4) kaedah kawalan anai-anai tanah yang umum.]*

(16 marks / 16 markah)

2. Using suitable diagrams, compare and differentiate

[Dengan menggunakan gambarajah yang sesuai, banding dan bezakan]

- [a] the morphology of ants and termites.
[morfologi semut dan anai-anai tanah.]

(6 marks / 6 markah)

- [b] the life cycle of ants and termites (lower termites).

[kitar hidup semut dan anai-anai tanah (anai-anai peringkat bawah.)]

(14 marks / 14 markah)

3. [a] Describe the possible hypotheses for the recent resurgence of bed bugs world wide.

[Huraikan hipotesis yang berkemungkinan untuk resurgen terkini pepijat di seluruh dunia.]

(5 marks / 5 markah)

- [b] Compare and differentiate the **FIVE** (5) common methods of control against bed bugs.

*[Banding and bezakan **LIMA** (5) kaedah kawalan pepijat.]*

(15 marks / 15 markah)

4. [a] With the aid of diagram, outline the infection cycle of the malaria parasite.

[Dengan bantuan gambarajah, huraikan kitar jangkitan parasit malaria.]

(10 marks / 10 markah)

- [b] Outline the various control approaches that can be used for the elimination of *Anopheles* mosquitoes.

*[Huraikan pelbagai pendekatan kawalan yang digunakan bagi membasmi nyamuk *Anopheles*.]*

(10 marks / 10 markah)

5. [a] Compare the lifecycle and morphology of hard tick (Ixodidae) and soft tick (Argasidae).

[Bandingkan kitar hidup dan morfologi sengkunit (Ixodidae) dan tungau (Argasidae).]

(12 marks / 12 markah)

- [b] Researchers are responsible for the safe containment of arthropod vectors while working with the pathogenic organism. How can one minimize the risks associated with research using arthropod vectors?

[Penyelidik bertanggungjawab untuk pembendungan selamat vektor artropoda semasa bekerja dengan organisma patogenik. Bagaimana seseorang boleh meminima risiko yang berkaitan dengan penyelidikan menggunakan vektor artropoda ?]

(8 marks / 8 markah)

6. [a] Write notes on the medical importance of *Glossina* spp. and *Phlebotomus* spp.

[Tulis nota mengenai kepentingan perubatan Glossina spp. dan Phelebotomus spp.]

(10 marks / 10 markah)

- [b] *Musca domestica* can transmit pathogens to human being and pose a health risk.

[Musca domestica boleh mentransmisi patogen kepada manusia dan menimbulkan risiko kesihatan.]

- [i] List **THREE** (3) possible routes on how pathogens can be transmitted.

[Senaraikan TIGA (3) kemungkinan laluan bagaimana patogen boleh ditransmisi.]

(3 marks / 3 markah)

- [ii] Describe the control methods of *Musca domestica*.

[Terangkan kaedah kawalan Musca domestica.]

(7 marks / 7 markah)

