



Second Semester Examination
2024/2025 Academic Session

July/August 2025

BET405 – Medical and Veterinary Helminthology
[Helmintology Perubatan dan Veterinar]

Duration: 2 hours
[Masa: 2 jam]

Please ensure that this examination paper contains FOUR (4) printed pages before you begin the examination.

[Sila pastikan bahawa kertas peperiksaan ini mengandungi EMPAT (4) muka surat yang bercetak sebelum anda memulakan peperiksaan ini.]

Instructions: Answer **FOUR (4)** out of **FIVE (5)** questions, in English or Bahasa Malaysia. Each question carries 25 marks.

[Arahan: Jawab **EMPAT (4)** daripada **LIMA (5)** soalan yang diberikan dalam Bahasa Inggeris atau Bahasa Malaysia. Tiap-tiap soalan bernilai 25 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.]

Should any candidate be caught cheating or in possession of materials not authorised to be brought into the Examination Hall during the examination, appropriate disciplinary action will be taken against the candidate concerned. In the event a candidate is found guilty of cheating, he/she can be expelled from the University.

[Sekiranya seseorang calon didapati meniru/menipu ataupun mempunyai bahan-bahan yang tidak dibenarkan dibawa ke dalam Dewan Peperiksaan semasa peperiksaan diadakan, tindakan disiplin yang sewajarnya akan dikenakan terhadap calon berkenaan. Jika seseorang calon didapati bersalah meniru/menipu beliau boleh disingkir dari Universiti.]

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1. [a] Describe the key morphological features, life cycle, and clinical features of cestode from the genus *Spirometra*.
[Terangkan ciri morfologi utama, kitar hidup, dan ciri klinikal bagi cestod daripada genus Spirometra.]

(10 marks / 10 markah)

- [b] A calf was found dead, and during the post-mortem, veterinarians observed frothy mucus and thin, white worms in the trachea and bronchi. Analyse the most likely parasite involved, its distinguishing morphological features, its life cycle, and the epidemiological factors that contributed to the infection.
[Seekor anak lembu ditemui mati, dan semasa bedah siasat, doktor veterinar mendapati lendir berbuih serta cacing putih yang halus dalam trakea dan bronkus. Berikan analisis parasit yang paling mungkin terlibat, ciri morfologi yang membezakannya, kitar hidupnya, serta faktor epidemiologi yang menyumbang kepada jangkitan tersebut.]

(15 marks / 15 markah)

2. [a] Explain the various parasitic adaptations exhibited by leeches that enable them to effectively survive within their ecological niches.
[Jelaskan pelbagai adaptasi parasit yang ditunjukkan oleh lintah yang membolehkan mereka hidup secara efektif dalam nic ekologi mereka.]

(10 marks / 10 markah)

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- [b] A blood sample from a patient was brought to the lab for the diagnosis of acanthocephaliasis. However, the blood smear technique failed to detect the presence of the agent that caused the infection.

Based on the statement above, identify and analyse the reasons for the failure of the diagnosis. Give suggestions for the improvement of the diagnosis.

[Satu sampel darah dari pesakit telah dibawa ke makmal untuk diagnosis akantosefaliasis. Walau bagaimanapun, teknik calitan darah gagal untuk mengesan kehadiran agen penyebab jangkitan.]

Berdasarkan pernyataan di atas, kenal pasti dan berikan analisis sebab kegagalan diagnosis. Berikan cadangan untuk penambahbaikan diagnosis.]

(15 marks / 15 markah)

3. [a] Describe the morphological adaptations and the complete life cycle of trematode X as shown in Figure 1.

[Terangkan adaptasi morfologi dan kitaran hidup yang lengkap bagi trematod X seperti yang ditunjukkan pada Rajah 1.]

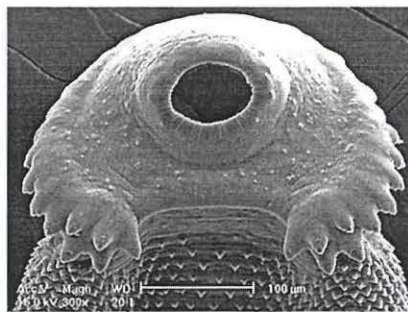


Figure 1: Trematode X
[Rajah 1: Trematod X]

(10 marks / 10 markah)

- [b] Analyse the diagnosis techniques for the lung trematode and the methods of species confirmation.

[Berikan analisis teknik diagnosis bagi trematod paru-paru dan kaedah pengesahan spesiesnya.]

(15 marks / 15 markah)

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4. [a] Describe the pathogenesis and epidemiology of accidental infection by animal hookworms in human.
[Terangkan patogenesis dan epidemiologi jangkitan tidak sengaja oleh cacing kerawit haiwan dalam manusia.]

(10 marks / 10 markah)

- [b] Compare between intestinal flukes and blood flukes which highlighting their differences in terms of classification, life cycle, transmission, clinical features, diagnosis, treatment and prevention.
[Bandingkan antara fluk usus dan fluk darah dengan menekankan perbezaan utama dari segi klasifikasi, kitaran hidup, penularan, ciri klinikal, diagnosis, rawatan dan pencegahan.]

(15 marks / 15 markah)

5. [a] Describe the morphology of the *Haemadyspa picta*.
[Terangkan morfologi Haemadyspa picta.]

(10 marks / 10 markah)

- [b] Discuss the challenges towards sustainable liver fluke control.
[Bincangkan cabaran terhadap kawalan yang mampan terhadap fluk hati.]

(15 marks / 15 markah)

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