



Second Semester Examination
2023/2024 Academic Session

July/August 2024

**BET403 – Medical and Veterinary Protozoology
(Protozoologi Perubatan dan Veterinar)**

Duration : 2 hours
(Masa : 2 jam)

Please check that this examination paper consists of **FOUR** (4) pages of printed material before you begin the examination.

*[Sila pastikan bahawa kertas peperiksaan ini mengandungi **FOUR** (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 digunapakai].

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1. [a] Discuss the epidemiology, clinical manifestations and transmission of Chagas disease.
[Bincangkan epidemiologi, manifestasi klinikal dan penularan penyakit Chagas.]
- (10 marks /10 markah)
- [b] Determine the mechanisms and implications of *Trypanosoma brucei's* ability to exhibit variant surface glycoprotein (VSG) variation in immune evasion, antigenic variation and disease persistence.
[Tentukan mekanisme dan implikasi keupayaan Trypanosoma brucei untuk mempamerkan variasi glikoprotein permukaan varian (VSG) dalam pengelakan imun, variasi antigenik dan penyakit berterusan.]
- (15 marks /15 markah)
2. [a] Discuss the methods to diagnose *Naegleria fowleri* infection.
[Bincangkan kaedah untuk mendiagnos jangkitan Naegleria fowleri.]
- (10 marks / 10 markah)
- [b] Investigate the pathogenesis of *Entamoeba histolytica* infection in patients that went through colonic irrigation that suffers from both intestinal and hepatic amoebiasis.
[Siasat patogenesis jangkitan Entamoeba histolytica pada pesakit yang melalui irigasi kolon yang mengalami kedua-dua amoebiasis usus dan amoebiasis hepatic.]
- (15 marks / 15 markah)
3. [a] Explain clinical signs and symptoms of cryptosporidiosis in immunocompromised hosts.
[Terangkan tanda klinikal dan simptom kriptosporidiosis pada perumah terimunokompromi.]
- (10 marks /10 markah)

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- [b] A man was brought to the hospital because he experienced nausea, vomiting, abdominal pain, and diarrhea after eating a raw steak at the restaurant five hours prior. Further investigation of the steak sample in the restaurant revealed the presence of muscular cysts in the meat.
[Seorang lelaki telah dibawa ke hospital kerana mengalami mual, muntah, sakit perut, dan cirit-birit selepas makan stik mentah di restoran lima jam sebelumnya. Siasatan lanjut ke atas sampel stik di restoran itu mendedahkan kehadiran sista otot dalam daging tersebut.]

Based on the situation above, identify the disease and justify your answer. Offer recommendations for its treatment and control.

[Berdasarkan situasi di atas, kenal pasti penyakitnya dan justifikasikan jawapan anda. Cadangkan rawatan dan kawalannya.]

(15 marks /15 markah)

4. [a] Discuss the pathogen, clinical manifestations and transmission of Kala-Azar disease.
[Bincangkan patogen, manifestasi klinikal dan penularan penyakit Kala-Azar.]

(10 marks /10 markah)

- [b] Determine the latest methods of protozoan infection treatments.
[Tentukan kaedah terkini rawatan jangkitan protozoa.]

(15 marks /15 markah)

5. [a] Elaborate the different types of microsporidia transmission and the control of microsporidiosis.
[Huraikan jenis penularan mikrosporidia yang berbeza dan kawalan mikrosporidiosis.]

(10 marks /10 markah)

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- [b] Determine how gestational age influences fetal outcomes in congenital toxoplasmosis. Identify the clinical signs and symptoms of the infection.
[Tentukan bagaimana umur kehamilan mempengaruhi hasil janin dalam toksoplasmosis kongenital. Kenal pasti tanda klinikal dan simptom jangkitan tersebut.]

(15 marks /15 markah)

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