



First Semester Examination
2023/2024 Academic Session

February 2024

**BZT305 – Vertebrate Zoology
(Zoologi Vertebrata)**

Duration : 2 hours
(Masa : 2 jam)

Please check that this examination paper consists of THREE (3) pages of printed material before you begin the examination.

[Sila pastikan bahawa kertas peperiksaan ini mengandungi TIGA (3) 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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SULIT

1. [a] Determine the characteristics of vertebrate fossil records from the Mesozoic Era.
[Tentukan ciri rekod fosil vertebrata dari Era Mesozoik.]
- (10 marks / 10 markah)
- [b] Analyse the Pangaea movement and the and its effect on the vertebrate diversity and distribution.
[Berikan analisis pergerakan Pangaea dan kesannya ke atas kepelbagaian dan taburan vertebrata.]
- (15 marks / 15 markah)
2. [a] Discuss the characteristics of Order: Gymnophiona.
[Bincangkan ciri Order: Gymnophiona.]
- (10 marks / 10 markah)
- [b] Analyse the early amphibian like tetrapod transition in the context of early anatomical pre-adaptations and the environmental conditions under which the transition occurred.
[Berikan analisis transisi ikan-amfibia dalam konteks pra-adaptasi anatomi awal dan keadaan persekitaran di mana transisi berlangsung.]
- (15 marks / 15 markah)
3. [a] Differentiate the proteroglyphous and solenoglyphous fangs and their types of venom in snakes.
[Bezakan taring "proteroglyphous" dan taring "solenoglyphous" serta jenis bisanya pada ular.]
- (15 marks / 15 markah)
- [b] Explain four basic bird wing shapes and the function of each shape.
[Terangkan empat bentuk asas sayap burung dan fungsi setiap bentuk sayap.]
- (10 marks / 10 markah)

4. [a] Elaborate the role of the swim bladder in fish.
[Huraikan peranan pundi renang pada ikan.]
- (10 marks / 10 markah)
- [b] Differentiate the mechanisms of coloration in fishes and their contributions to survival and reproductive success in aquatic environments.
[Bezakan mekanisme pewarnaan pada ikan dan sumbangannya kepada kemandirian dan kejayaan pembiakan dalam persekitaran akuatik.]
- (15 marks / 15 markah)
5. [a] Discuss the ways of giving birth in monotreme and marsupial animals and give examples of animals for each group.
[Bincangkan kaedah melahirkan anak bagi haiwan monotrem dan marsupial serta berikan contoh haiwan bagi setiap kumpulan.]
- (10 marks / 10 markah)
- [b] Differentiate the various types of mammalian teeth and their respective functions. Give examples of mammalian species that showcase specialized dental adaptations emphasizing their dietary habits.
[Bezakan pelbagai jenis gigi mamalia dan fungsi masing-masing. Berikan contoh spesies mamalia yang mempamerkan penyesuaian pergigian yang khusus dengan menekankan tabiat pemakanan.]
- (15 marks / 15 markah)