
UNIVERSITI SAINS MALAYSIA

First Semester Examination
Academic Session 2009/2010

November 2009

BZT 212/3 – Vertebrate Zoology
[Zoologi Vertebrata]

Duration: 3 hours
[Masa: 3 jam]

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

[Sila pastikan bahawa kertas peperiksaan ini mengandungi LIMA 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. Write short notes about the following topics. Select **TWO** (2) from **THREE** (3) topics.

[a] Cretaceous/ Tertiary Mass Extinction.

(10 marks)

[b] Order Sphenodota: Tuatara.

(10 marks)

[c] Order Crocodylia: gharials, crocodiles and alligator.

(10 marks)

2. Discuss the species characteristics, ecology, reproduction and economic significance of hagfish.

(20 marks)

3. Write short notes about the following topics. Select **TWO** (2) from **THREE** (3) topics.

[a] Coelacanth (Class Osteichthyes).

(10 marks)

[b] Skin and bone characteristics of Osteichthyes.

(10 marks)

[c] Morphology and ecology of Batoidea (Elasmobranch) with one specific example.

(10 marks)

4. Write short notes about the following topics:

[a] Four arrangement of digits (fingers) in birds with complete diagrams.
(10 marks)

[b] Migration, migration routes and stimulus for migration in birds.
(10 marks)

5. Discuss about the following topics:

[a] Reproduction and life cycles of anuran (toads and frogs).
(10 marks)

[b] Amphibian-like tetrapods in the fossil record.
(10 marks)

6. Discuss the fossil history of vertebrates during the Paleozoic Era.

(20 marks)

1. Tuliskan nota ringkas tentang topik-topik berikut. Pilih **DUA** (2) daripada **TIGA** (3) topik.

[a] Kepupusan besar-besaran Kretaceous/ Tertiari.

(10 markah)

[b] Order Sphenodonta: Tuatara

(10 markah)

[c] Order Crocodilia: gharial, buaya dan aligator

(10 markah)

2. Bincangkan ciri-ciri spesies, ekologi, pembiakan dan kepentingan ekonomi "hagfish".

(20 markah)

3. Tuliskan nota ringkas tentang topik-topik berikut. Pilih **DUA** (2) daripada **TIGA** (3) topik.

[a] Coelacanth (Kelas Osteichthyes).

(10 markah)

[b] Ciri-ciri kulit dan tulang Osteichthyes.

(10 markah)

[c] Morfologi dan ekologi Batoidea (Elasmobranch) beserta satu contoh spesifik.

(10 markah)

4. Tuliskan nota ringkas tentang topik-topik berikut:

[a] Empat susunan digit (jari) pada burung beserta gambarajah lengkap.

(10 markah)

[b] Migrasi, arah migrasi dan ransangan migrasi dalam burung.

(10 markah)

5. Bincangkan tentang topik-topik berikut:

[a] Kitar hidup dan pembiakan anura (kodok dan katak).

(10 markah)

[b] Haiwan-haiwan berkaki empat menyerupai ambifia dalam rekod fosil.

(10 markah)

6. Bincangkan sejarah fosil vertebrata semasa Era Paleozoik.

(20 markah)