



Second Semester Examination
2024/2025 Academic Session

July/August 2025

BDE312 / BAT402 – Fisheries Management
[Pengurusan Perikanan]

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] Explain the need for the management of fisheries activities.
[Terangkan keperluan bagi pengurusan aktiviti perikanan.]

(10 marks / 10 markah)

- [b] Outline **FIVE (5)** fisheries management issues in Malaysia.
*[Gariskan **LIMA (5)** isu dalam pengurusan perikanan di Malaysia.]*

(15 marks / 15 markah)

2. [a] Explain the functions of the length frequency histogram in managing fisheries resources.
[Terangkan fungsi histogram frekuensi panjang ikan dalam menguruskan sumber perikanan.]

(10 marks / 10 markah)

- [b] Illustrate marine fishing zonation based on distance, fishing gears and vessel types according to Malaysia fisheries management.
[Lakarkan zon perikanan marin berdasarkan jarak, peralatan memancing dan jenis kapal mengikut pengurusan perikanan Malaysia.]

(15 marks / 15 markah)

3. [a] Compare the Stock-centered and Ecosystem-centered approaches to manage marine fisheries.
[Bandingkan pendekatan Berpusatkan Stok dan pendekatan Berpusatkan Ekosistem untuk mengurus perikanan marin.]

(10 marks / 10 markah)

- [b] Current length-based fisheries management recommends to selectively harvest the larger specimens to protect fish stocks from overfishing. Based on recent scientific literature, analyse the effectiveness of this practice in relation to an alternative strategy.

[Pengurusan perikanan semasa berasaskan panjang mengesyorkan penuaian spesimen yang lebih besar secara selektif untuk melindungi stok ikan daripada penangkapan berlebihan. Berdasarkan literatur saintifik terkini, lakukan analisis keberkesanan amalan ini berbanding strategi alternatif.]

(15 marks / 15 markah)

4. [a] Explain the emerging threats to fisheries activities posed by global climate change.

[Terangkan ancaman yang timbul terhadap aktiviti perikanan yang disebabkan oleh perubahan iklim global.]

(10 marks / 10 markah)

- [b] Analyse the societal factors permitting worldwide marine fishery declines.

[Berikan analisis faktor sosial yang membenarkan penurunan perikanan marin di seluruh dunia.]

(15 marks / 15 markah)

5. [a] Using **ONE (1)** example, explain the application of stock assessment in managing marine resources.

*[Menggunakan **SATU (1)** contoh, terangkan aplikasi penilaian stok dalam mengurus sumber marin.]*

(10 marks / 10 markah)

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- [b] Based on the following raw data of 2019's annual fish assessment (Table 1), scrutinize the issues and their potential solutions from all fisheries perspectives.

[Berdasarkan data mentah penilaian ikan tahunan 2019 berikut (Jadual 1), teliti isu dan potensi penyelesaiannya dari semua perspektif perikanan.]

Location: [Lokasi:]	Chenderoh Dam [Empangan Chenderoh]
Ecosystem type: [Jenis Ekosistem:]	Freshwater; Lotic (~ 40 river km) and lentic (21 km ²) [Air tawar; Lotik (~ 40 km sungai) dan lentik (21 km ²)]
Fishing Gear: [Peralatan menangkap ikan:]	Gill net (mesh size: 2.5" x 1 set); rented from local fisherman [Pukat insang (saiz jaring: 2.5" x 1 set); disewa daripada nelayan tempatan]
Gill net's size: [Saiz pukat:]	20 m long x 2 m vertical height [20 m panjang x 2 m labuh]
Setting gill net: [Pukat dilabuhkan:]	5 th July 2019 @ 5 pm [5 ^{hb} Julai 2019 @ 5 petang]
Retrieving gill net: [Pukat diangkat:]	6 th July 2019 @ 8.30 am [6 ^{hb} Julai 2019 @ 8.30 pagi]
Total number of registered fishermen: [Jumlah bilangan nelayan berdaftar:]	255

Table 1: Fish data.
[Jadual 1: Data ikan.]

Species [Spesies]	Local name [Nama tempatan]	n
<i>Barbodes schwanenfeldii</i>	Lampam sungai	13
<i>Osteochilus vittatus</i>	Terbul	12
<i>Hampala macrolepidota</i>	Sebarau	5
<i>Cyclocheilichthys apogon</i>	Temperas	8
<i>Mystacoleucus marginatus</i>	Sia	7
<i>Labiobarbus leptochilis</i>	Kawan	11
<i>Cichla ocellaris</i>	Ikan raja	15
<i>Oxygaster anomalura</i>	Lalang	20

Fish size range: 6.5 cm – 18.2 cm TL.
[Julat saiz ikan: 6.5 cm – 18.2 cm TL.]

(15 marks / 15 markah)