



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION SEMESTER II SESSION 2022/2023

- COURSE NAME : BIOGEOGRAPHY
- COURSE CODE : BWJ 21402
- PROGRAMME CODE : BWW
- EXAMINATION DATE : JULY / AUGUST 2023
- DURATION : 3 HOURS
- INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 - Open book
 - Closed book
 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

TERBUKA

CONFIDENTIAL

- Q1**
- (a) Generally, the further we are from the equator and, thus the closer we get to the poles, the colder it gets. Explain why this happens.
(2 marks)
- (b) With the help of illustrations, explain why lush rainforests are often on the windward side of mountains while deserts are often found on the leeward side of mountains.
(8 marks)
- (c) Give **TWO (2)** examples of how plate tectonics can affect the distribution of life on earth.
(4 marks)
- (d) National Geographic would like you to conduct a study to understand what the climatic conditions were like in Malaysia 22,000 years ago during the last glacial maxima. Outline **ONE (1)** method that you can use to study the historical climate of Malaysia.
(6 marks)
- Q2**
- (a) Outline how deforestation affects global climate.
(4 marks)
- (b) The last Ice Age was characterized by multiple cycles of glacials and interglacials. Outline **THREE (3)** ways that glacials and interglacials affect plants and animals.
(6 marks)
- (c) Outline **TWO (2)** major changes that occurred in southeast Asia during the last Ice Age.
(4 marks)
- (d) Outline how the movement of Antarctica to the South Pole caused a major Ice Age.
(6 marks)
- Q3**
- (a) What is the definition of endemism? Discuss why Australia has so many endemic plants and animals.
(4 marks)
- (b) Give **THREE (3)** examples of barriers and elaborate on how each type of barrier can limit the distribution of organisms.
(6 marks)

- (c) Compare an undisturbed meadow with a meadow that experiences regular grazing by herbivores. Which meadow do you expect to have higher plant diversity? Explain.
(6 marks)
- (d) In terms of conserving species diversity, is it better to conserve one very large nature reserve from one biogeographical region or is it better to conserve multiple smaller nature reserves from different biogeographical regions? Explain the reasoning for your choice.
(4 marks)
- Q4** (a) With reference to the biological concept of species, explain why tigers and lions are considered to be separate species.
(4 marks)
- (b) Using an example, explain what is meant by a cryptic species.
(4 marks)
- (c) Using **ONE (1)** specific example, explain how prezygotic species barriers operate.
(4 marks)
- (d) Lake Tanganyika is a very large freshwater rift valley lake in Africa. Scientists believe that the lake was colonized by the river cichlid and freshwater pufferfish some 12 mya. However, while the river cichlid has evolved into 250 new species, the pufferfish has remained largely unchanged. Outline **TWO (2)** reasons why the cichlid has been so successful at evolving into different species.
(4 marks)
- (e) Many native birds on oceanic islands have become extinct due to the introduction of invasive rats, pigs and snakes to their islands. Outline why island birds are particularly vulnerable to invasive species.
(4 marks)

- Q5**
- (a) What is an edaphic vegetation formation? Give **TWO (2)** examples.
(4 marks)
 - (b) Why is sunlight necessary for coral reef formation? Give **TWO (2)** examples of coral reef types.
(4 marks)
 - (c) What combination of **FOUR (4)** unique traits distinguish mammals from other animals?
(4 marks)
 - (d) Compare placental mammals to marsupials. Give **ONE (1)** example of a placental and **ONE (1)** example of a marsupial and outline **THREE (3)** key differences between these two groups of mammals.
(8 marks)

- END OF QUESTIONS -