



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : TERRESTRIAL ECOLOGY
COURSE CODE : BWJ 20503
PROGRAMME CODE : BWW
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

- Q1** (a) There are 3 types of ecosystems that can be found in the world which are terrestrial, interfacing and aquatic ecosystems. State **ONE (1)** characteristic and give **ONE (1)** example of terrestrial ecosystem. (2 marks)
- (b) Ideally, species with the same requirement and niche cannot co-exist at the same time. However, ecologists suggested that species can co-exist in two ways, competitive exclusion and character displacement. By using suitable example, analyze how character displacement led to the co-existence of the species. (10 marks)
- (c) Predation is one of the examples of the interspecific interaction, which involves the prey and its predator. Animal has evolved an anti-predator adaptation over time to reduce their chances of being eaten. Choose **ONE (1)** anti-predator adaptation and explain how this mechanism helps animal escape from its predator. (4 marks)
- (d) Global warming occurs because of the long-term rise in the global average temperature. The emission of green house gases particularly carbon dioxide (CO₂) contributes to global warming. Demonstrate how CO₂ is released to the atmosphere through the carbon cycle and eventually led to global warming. (9 marks)
- Q2** (a) State the elevation for lowland tropical rainforest in Malaysia. (1 mark)
- (b) Organisms living in highland tropical rainforest are unique as they are able to adapt to different environmental conditions than organisms living in lowland tropical rainforest. Explain **FOUR (4)** changes in environmental conditions that organism living on mountains experience, which are peculiar to high altitude. (8 marks)
- (c) Compare **TWO (2)** characteristics of flora in lowland, lower montane, upper montane and sub-alpine forest. (8 marks)
- (d) Limestone karst occurs as a result of the dissolution of carbonate rocks by natural water. Give **FOUR (4)** karst landscapes and compare **ONE (1)** characteristic of each chosen karst landscape. (8 marks)
- Q3** (a) One of the threats to peat swamp forest is fire. Analyze why peat swamp forest is more vulnerable to destruction by fire than any other forest type. (2 marks)
- (b) State another name for tropical deciduous forest. (1 mark)

- (c) Outline **FOUR (4)** differences of plants in tropical deciduous forest and tropical rain forest. (8 marks)
- (d) Tropical grassland or savannah has a very dry and hot climate. The frequency of fire is also prevalent in this ecosystem. Besides fire, overgrazing, desertification and soil erosion are also the problems of this ecosystem. Given that you are one of the authorities responsible for the management of the savannah ecosystem, propose **FIVE (5)** strategies of sustainable management of this ecosystem. (10 marks)
- (e) The plant that lives in the desert ecosystem has to adapt to the very hot and dry temperatures. Explain in details **TWO (2)** adaptations of plant in the desert ecosystem. (4 marks)
- Q4** (a) Classify **TWO (2)** types of ecosystem that can be found in the temperate regions. (4 marks)
- (b) Outline **FOUR (4)** physical characteristics of tundra ecosystem. (8 marks)
- (c) Differentiate **THREE (3)** characteristics of arctic and alpine tundra ecosystems. (6 marks)
- (d) Give **ONE (1)** example of interfacing ecosystem. (1 mark)
- (e) Explain how destruction of coral reef ecosystem threatened the mangrove ecosystem. (6 marks)

– END OF QUESTIONS –

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