



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2018/2019**

COURSE NAME : SUSTAINABLE MANAGEMENT
NATURAL RESOURCES

COURSE CODE : BWJ 40303

PROGRAMME CODE : BWW

EXAMINATION DATE : DECEMBER 2018 / JANUARY 2019

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

TERBUKA

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

- Q1** (a) (i) Explain the concept of urban-rural gradient in a changing landscape. (4 marks)
- (ii) Demonstrate **FOUR (4)** types of replacement habitat in order of increasing habitability to most native species. (8 marks)
- (b) (i) How can we exploit religious values in promoting sustainable uses of natural resources? (8 marks)
- (ii) Discuss your understanding on environmental economics in determining the value of ecosystem. (5 marks)
- Q2** (a) Give **TWO (2)** management issues concerning marine and wildlife and propose appropriate solution for these issues. (6 marks)
- (b) (i) State **TWO (2)** characteristics of intentionally modified ecosystem. (2 marks)
- (ii) Based on your answer in **Q2(b)(i)**, evaluate **TWO (2)** possible side effects of human activity on ecosystem. (4 marks)
- (iii) Outline **THREE (3)** ripple effects of human impact to ecosystem, regional and global processes. (9 marks)
- (c) Outline the characteristics of sustainable agriculture. (4 marks)
- Q3** (a) List **FOUR (4)** sources of freshwater. (4 marks)
- (b) Differentiate all sources of freshwater listed in **Q3 (a)**. (8 marks)
- (c) Human activities within the last century have led to a dramatic rise in atmospheric concentrations of carbon dioxide and other gases that contribute to the greenhouse effect that eventually cause more serious environmental scenario known as climate change. This climate change will primarily affect the freshwater ecosystems through changes in water temperature, quantity, and quality as well as through changes in the timing and duration of the flows. One of the way to minimize the impact of the climate change to the ecosystem is by designing and managing the freshwater

reserve. By using your knowledge in the freshwater management, suggest **FIVE (5)** considerations when designing and managing the freshwater reserve.

(10 marks)

- (d) Impervious cover is defined as any surface in the landscape that cannot effectively absorb or infiltrate rainfall such as roads, parking lots, rooftops and etc. Explain how impervious cover influences the habitat quality of the streams.

(3 marks)

- Q4** (a) Sustainable management of natural resources is defined as the way natural resources are used at a rate that maintains and enhances the resilience of ecosystem so that the natural resources are still available for the use of the future generations. The sustainability of natural resources can be secured by using renewable energy resources rather than non-renewable energy resources. Although renewable energy resources are good, but it also has some weaknesses. Discuss **TWO (2)** pros and cons of having renewable energy resources.

(8 marks)

- (b) According to the International Union for the Conservation of Nature, IUCN (1994), Protected Area is defined as an area of land and/or sea dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or effective means. IUCN categorizes the Protected Areas into 6, which are Category I, Category II, Category III, Category IV, Category V and Category VI. Compare the purposes of each category and give example of established Terrestrial Protected Areas in each categories.

(12 marks)

- (c) Name **ONE (1)** Category II Marine Protected Area in Malaysia.

(1 mark)

- (d) Outline **TWO (2)** characteristics of 'No take' Marine Protected Areas (MPAs).

(4 marks)

– END OF QUESTIONS –