UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
(ONLINE)
SEMESTER I
SESSION 2020/2021

COURSE TITLE	:	WATER RESOURCES AND TREATMENT
COURSE CODE	:	BPF 41003
PROGRAMME	:	BPC
EXAMINATION DATE	:	JANUARY / FEBRUARY 2021
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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

Q1   (a)   **Figure Q1** below shows the demand for water in different sectors including domestic and industry, irrigation and others in Malaysia from 1980 to 2020.

Analyze the water demand in different sector in Malaysia.
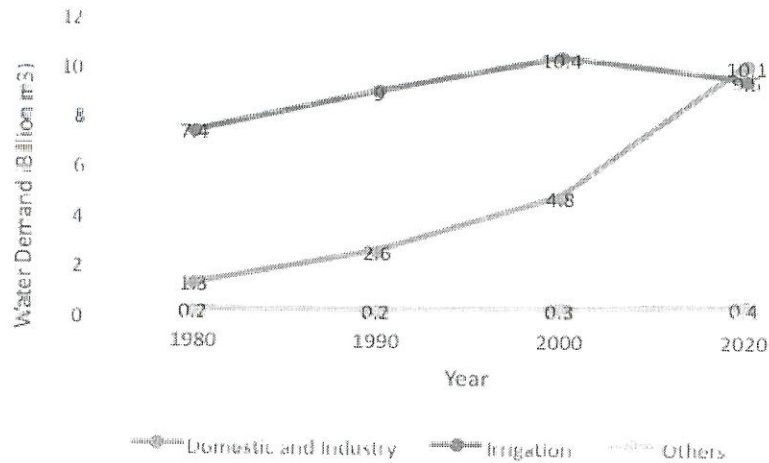
(15 marks)

Figure Q1: The demand for water in different sectors in Malaysia from 1980 to 2020.

(b)   Integrated River Basin Management (IRBM) is a coordination process in the conservation, management and development of water resources, land and related resources across all sectors within a river basin. IRBM aims to maximize the socio-economic benefits of water resources in a sustainable manner while at the same time preserving or restoring the natural ecosystem of water resources.

(Source: Global Water Partnership, 2002)

Discuss the Principles of IRBM Best Management Practices in preserving and restoring the natural ecosystem of water resources in Malaysia.

(10 marks)

Q2.   Raw water is fresh water found naturally such as rainwater, river water, lake water and groundwater. While the treated water is water obtained from raw water sources but undergoes certain treatments to make it safe for human use either for use in the bathroom, toilet, cooking or drinking. For that purpose, the treatment process must be done in a water treatment plant. This water treatment process consists of several stages.

Illustrate the water treatment process with a description of each stages.

(25 marks)

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Q3 The main causes of water pollution can be categorized into point sources and non-point sources. Point sources pollution refers to the release of resources or waste from pipes or drains directly into a body of water at a particular location. Meanwhile, non-point sources pollution is related to diffusion or scattering and has no specific emissions, for example agricultural activities and surface water runoff.

(Source: Department of Environment Malaysia, 2012)

Evaluate with examples the above statement.

(25 marks)

Q4 Rainwater Harvesting (RHW) system refer to a system collection and storage of rainwater that targets harvesting activities on the ground or underground to prevent water from evaporating as a result of any hydrological activity aimed at using water efficiently.

Propose the design of a rainwater harvesting system for a bungalow house that consist of both above and underground harvesting activities as well as activities involving the use of the water.

(25 marks)

- END OF QUESTIONS-

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