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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024**

COURSE NAME : ENVIRONMENTAL MANAGEMENT
TECHNOLOGY

COURSE CODE : BNS 21103

PROGRAMME CODE : BNS

EXAMINATION DATE : JULY 2024

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 TEST CONDUCTED VIA CLOSED BOOK

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

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Q1 Environmental Quality Act 1974 (EQA 1974) is an Act relating to the prevention, abatement, control of pollution and enhancement of the environment, and for purposes connected therewith.

(a) Based on EQA 1974, define the following terms.

- (i) Environment
- (ii) Waste
- (iii) Pollution

(6 marks)

(b) Explain **THREE (3)** specific pollutants or activities and the potential environmental and human health impacts associated with each prohibited pollutant or activity that are prohibited under the Part IV of Environmental Quality Act (EQA) 1974.

(9 marks)

(c) Identify **ONE (1)** of each environmental and public health implications of the Sungai Kim Kim pollution incident which include the causes of the contamination, immediate and long-term effects on the affected communities and ecosystems.

(5 marks)

(d) Sketch the **FIVE (5)** steps of continuous improvement of environment management system.

(5 marks)

Q2 Air pollution is defined as the presence in the outdoor atmosphere of one or more contaminants, such as dust, fumes, gas, mist, odor, smoke or vapor in quantities, of characteristics, and of duration, such as to be injurious to human, plant, or property, or which unreasonably interferes with the comfortable enjoyment of life and property.

(a) Identify **THREE (3)** air pollution control system in the industry.

(3 marks)

(b) List and elaborate **THREE (3)** gaseous pollutant and its potential sources that might be found in our environment.

(9 marks)

(c) Illustrate the greenhouse gas emissions effect.

(5 marks)

(d) Determine **FOUR (4)** air pollution control measures and practices that industrial plants must implement to minimize air pollution and uphold environmental standards outlined in clean air regulations based on Environmental Quality (Clean Air) Regulations 2014.

(8 marks)

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Q3 Environmental Quality (Industrial Effluents) Regulations 2009 and Environmental Quality (Sewage) Reg. 2009 both highlighted the importance of point of discharge to be clearly indicated by the owner of a premises on the layout plans and engineering drawings certified by a professional engineer.

(a) Define following terms.

- (i) Industrial Effluents
- (ii) Sewage
- (iii) Sludge

(6 marks)

(b) State the allocated "Schedule" in Environmental Quality (Industrial Effluent) Regulations 2009 for below conditions.

- (i) Acceptable Conditions for the Discharge of Industrial Effluent Other Than Parameter of Chemical Oxygen Demand (COD)
- (ii) Acceptable Conditions for the Discharge of Industrial Effluent for Parameter of COD
- (iii) Acceptable Conditions for the Discharge of Mixed Effluent for Parameter of COD

(3 marks)

(c) Differentiate the methods of Analysis and Sampling of Industrial Effluent or Mixed Effluent for the following methods.

- (i) Ex-situ analysis.
- (ii) In-Situ analysis.
- (iii) Grab sample.

(6 marks)

(d) Determine **FIVE (5)** specifications of point of discharge as below.

- (i) Sewage.
- (ii) Industrial effluent.

(10 marks)

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- Q4** Scheduled waste refers to waste materials that are classified as hazardous or potentially harmful to human health and the environment, as outlined in the Schedule 1 Environmental Quality (Scheduled Wastes) Regulations 2005 in Malaysia.
- (a) Categorize the wastes listed below to scheduled waste or general waste.
- (i) Contaminated container with oil waste.
 - (ii) Debris from construction waste.
 - (iii) Broken laptop.
 - (iv) Food waste.
 - (v) Sludge generated from Industrial effluents treatment plan.
- (5 marks)
- (b) Identify **THREE (3)** objectives of Environmental Quality (Scheduled Wastes) regulations 2005.
- (3 marks)
- (c) Differentiate the scheduled waste category based on schedule waste code (SW code) in Schedule 1 of Environmental Quality (Scheduled Wastes) regulations 2005.
- (i) SW 1
 - (ii) SW 2
 - (iii) SW 3
 - (iv) SW 4
 - (v) SW 5
- (5 marks)
- (d) Explain **SIX (6)** scheduled waste generator's responsibility based on Environmental Quality (Scheduled Wastes) regulations 2005.
- (12 marks)

- END OF QUESTIONS -

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