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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

- COURSE NAME : WASTE MANAGEMENT
- COURSE CODE : DAU 22102
- PROGRAMME CODE : DAU
- EXAMINATION DATE : JULY 2024
- DURATION : 2 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.

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- Q1** (a) (i) Define waste.
(1 mark)
- (ii) List three (3) physical types of waste and describe how these types are generated.
(6 marks)
- (b) (i) Describe hazardous waste.
(2 marks)
- (ii) List four (4) groups of hazardous waste and give an example of each group.
(8 marks)
- (c) List four (4) agencies responsible for waste management in Malaysia and their respective responsibilities.
(8 marks)
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- Q2** (a) (i) State the objective of solid waste management.
(1 mark)
- (ii) List five (5) importances of proper solid waste management.
(5 marks)
- (b) List 5 (five) characteristics of waste storage containers.
(5 marks)
- (c) (i) State two (2) facilities that can maximize waste value.
(2 marks)
- (ii) State two (2) facilities for solid waste final destination.
(2 marks)

- (d) Landfills are engineered waste disposal sites designed to bury and compact waste to minimize environmental impacts. List five (5) essential parts of a landfill that carry the purpose of minimizing environmental impacts and describe their function.

(10 marks)

Q3 Palm oil production is a major Southeast Asian industry, generating significant waste products.

- (a) Identify two (2) main palm oil mill waste types and describe their current disposal methods.

(4 marks)

- (b) Explain five (5) environmental concerns associated with these disposal methods.

(5 marks)

- (c) (i) Sketch the flow process in a palm oil mill.

(4 marks)

- (ii) Considering the chemical composition and physical properties of palm oil mill waste, plan two innovative ideas for new products that could be created from this waste.

(4 marks)

- (iii) For each idea, select the target market and potential applications of the product.

(4 marks)

- (iv) Predict two (2) potential challenges that might appear while developing the product.

(4 marks)

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- Q4** (a) (i) State two (2) categories of hazardous materials found in e-waste.
(2 marks)
- (ii) Identify the environmental and health risks associated with improper disposal of these materials.
(4 marks)
- (iii) List five (5) the challenges faced in managing e-waste effectively.
(5 marks)
- (b) Identify four (4) challenges and opportunities for implementing sustainable waste management practices in developing countries.
(8 marks)
- (c) Briefly explain the current state of global waste generation and how it impacts the environment and human health.
(6 marks)

- END OF QUESTIONS -

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