UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
(TAKE HOME)
SEMESTER I
SESSION 2020/2021

COURSE NAME	:	WASTE MANAGEMENT
COURSE CODE	:	BNJ 40103
PROGRAMME CODE	:	BNH
EXAMINATION DATE	:	JANUARY / FEBRUARY 2021
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

TERBUKA

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

Q1   (a)   Describe **TWO (2)** reasons for textile waste generation.

(5 marks)

(b)   Fast fashion leads to a mountain of clothing being thrown away each year and has a huge impact on the environment. Suggest **THREE (3)** ways to turn the unwanted garments into something useful.

(9 marks)

(c)   Water quality can be assessed by their physical, chemical and biochemical characterization. Select **TWO (2)** suitable assessment for wastewater generated from the dyeing process based on physical characteristics.

(6 marks)

Q2   (a)   Choose **THREE (3)** factors contributing to urban water demand.

(6 marks)

(b)   Compare the potential releases emitted in air and water due to fiber preparation and finishing processes in textile manufacturing.

(8 marks)

(c)   Explain water hardness and identify **TWO (2)** sources in groundwater.

(6 marks)

Q3   (a)   Compare between aerobic and anaerobic processes in wastewater treatment. Support your answer with a suitable mechanism illustration for each process.

(12 marks)

(b)   Distinguish the differences among pre-treatment, primary treatment, secondary treatment and tertiary treatment.

(8 marks)

Q4   (a)   (i)   Define environmental health hazards.

(2 marks)

(ii)   Discuss the impact of human made disasters on environmental health hazards.

(3 marks)

(b)   **Table Q4 (b)** shows the municipal solid waste for a typical city in Malaysia. Analyze the given data and calculate the average density, composition and moisture content of the municipal solid waste.

(15 marks)

Q5   (a)   Compare functional elements of solid waste management for urban and rural settings.

(8 marks)

(b)   Explain how the incineration of waste material contributes to air pollution. Choose suitable daily life activities to support your answer.

(8 marks)

(c)   Describe **FOUR (4)** laws and regulation that is important in hazardous waste management

(4 marks)

-END OF QUESTIONS –

TERBUKA

Table Q4 (b)

Description	Weight (%)	Typical density (kg/m³)	Moisture content (%)
Food wastes	39.5	290	70
Yard wastes	3.8	240	60
Paper	0.85	85	6
Plastic	0.7	65	2
Glass/Ceramic	0.5	195	2
Metal	0.65	160	2
Textile	2	65	8
Leather	2.5	160	10
Stones/bricks	40.5	480	10
Miscellaneous	9	240	8
Total	100.00		