UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 6 Examination in Engineering: May 2026

Module Number: MN 6204 **Module Name: Environmental Pollution and Waste Management Systems (C18)**

[Three Hours]

[Answer any **Five Questions only,** each question carries **14** marks]

Q1 a) Briefly explain two sources of oil pollution in the Marine Environment.

[2.0 Marks]

b) List all MARPOL Annexures, clearly stating the type of pollution addressed under each Annex.

[6.0 Marks]

c) Provide a detailed explanation of the relevant MARPOL Annex applicable for oil pollution.

[6.0 Marks]

Q2 a) Describe the impact of plastic pollution on the marine environment.

[6.0 Marks]

b) Explain your understanding of the term "loss of biodiversity" in the marine ecosystem.

[4.0 Marks]

c) Explain the benefits of Phytoplankton in Marine Ecosystems.

[4.0 Marks]

Q3 a) Describe two mechanisms of transportation of pollutants in the marine environment.

[4.0 Marks]

b) Describe the impacts of heavy metal pollution on the marine ecology.

[4.0 Marks]

c) Explain the following with respect to Marine Waste Management ,

i. Waste Classification and Segregation

ii. Regulatory Compliance

iii. Waste Minimization and Recycling

[6.0 Marks]

Q4 a) State and describe the different phases of the Waste Management Process.

[6.0 Marks]

b) Explain the impacts of eutrophication.

[4.0 Marks]

c) Discuss the impact of pollution due to pesticides. Provide examples where relevant.

[4.0 Marks]

Q5 a) State four different marine structures that require end of life management.

[4.0 Marks]

b) Provide an explanation of the different ways in which the ship dismantling process may lead to pollution.

[4.0 Marks]

c) "Designing marine structures for reuse or recycling is an important strategy to minimize waste". Do you agree? Provide a detailed justification for your answer.

[6.0 Marks]

Q6 Explain the following in detail.

a) Marine Ecology.

[4.0 Marks]

b) Point source pollution.

[4.0 Marks]

c) Ocean Acidification.

[4.0 Marks]

d) Remediation and cleanup costs.

[2.0 Marks]