TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MARINE RESOURCE MANAGEMENT

BSMR 15S/YEAR 3/ SEMESTER 1

AES 4302 MARINE POLLUTION AND MANAGEMENT

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

Instructions to Candidates

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions.

This paper consists of two printed pages.

Mobile phones are NOT allowed in the examination room

QUESTION ONE

a) Define the following terms:
   - i. Eutrophication (1mk)
   - ii. Non-point sources of pollution (1mk)
   - iii. Hazardous-waste management (1mk)
   - iv. Radioactive waste (1mk)
   - **v.** Infectious agents (1mk)

b) State and explain the impacts of the following wastes in the marine environment.
   - i) Plastic debris (2mks)
   - ii) Sediments (2mks)

c) Differentiate between the two common approaches to waste management in the Marine environment (4mks)

d) State the Two basic methods of land disposal of hazardous waste (2mks)

e) Describe on-site remediation in hazardous waste management (2mks)

f) Full containment of waste provides an alternative to on-site remediation. Explain the process (4mks)

g) State the key functions of Kenya Maritime Authority plays a significant role in marine pollution management in Kenya. (5 marks)

h) Legislation is an important marine management tool. What are the objectives of the following frameworks in Kenya

i. Marine Pollution (Shipping Operations) Act, 2012 (3mks)

ii. National Marine Pollution Response Contingency Plan (3mks)

QUESTION TWO

a) Describe the Cradle to grave manifest system, outlining its advantages. (10 mks)

b) Hazardous waste can be treated by chemical, thermal, biological, and physical methods. Explain (10 mks)

QUESTION THREE

Discuss threats of marine pollution from land based sources (20mks)

QUESTION FOUR

a) Prior to land disposal, surface storage or containment systems are used as a temporary method. Explain (8 mks)

b) Describe land filling and underground injection methods of land disposal (12 mks)

QUESTION FIVE

a) Differentiate between point and non-point sources of pollution, citing clear examples (10 mks)

b) Discuss the categories of Pollutants based on ecosystem disruption and health implications. (10 mks**)**