



Technical University of Mombasa

Faculty of Engineering and Technology
DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME 112 Y2 S2)

EHL 2202
SANITATION & ENVIRONMENTAL MANAGEMENT

END SEMESTER EXAMINATIONS

SERIES: DECEMBER, 2013
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **FIVE** questions
 - Answer question **ONE COMPULSORY** and **ANY TWO** questions.
- This paper consists of **3 PRINTED** pages

QUESTION ONE (COMPULSORY)

- (a) (i) Sketch to describe the following methods of waste disposal:-
(I) open dumping
(II) land filling
(III) incineration
(IV) composting
(ii) State **ONE** advantages for each of the methods in 1 a (i) **(20 marks)**
- (b) Define the following terms:-
(i) Biomagnifications
(ii) Bio accumulation
(iii) Environmental pollution
(iv) Natural Eutrophication **(4 marks)**
- (c) Explain the function(s) of the following bacteria in the waste management:-
(i) Aerobic bacteria
(ii) Anaerobic bacteria
(iii) Facultative bacteria **(6 marks)**

QUESTION TWO

- (a) Differentiate between the following terms:-
(i) Primary and secondary pollutants
(ii) Carcinogenic and Teratogenic substances **(8 marks)**
- (b) (i) State any **FOUR** effects of ionizing radiation on human body
(ii) Outline the advantages and disadvantages of ventilated improved pit (VIP) latrine **(12 marks)**

QUESTION THREE

- (a) (i) State any **FIVE** effects of Acid Rain on environment.
(ii) Differentiate between re-use and recycling method when dealing with municipal waste. **(9 marks)**
- (b) (i) State **THREE** advantages and disadvantages of land fill system
(ii) Sketch to show a cross-section view of a modern landfill for disposal of waste. **(11 marks)**

QUESTION FOUR

- (a) (i) State any **FOUR** diseases caused by poor sanitation
- (ii) Outline any **FOUR** factors to be considered in determining the method of waste disposal **(8 marks)**
- (b) Explain the process of sewage treatment by waste stabilization ponds/lagoon. **(12 marks)**

QUESTION FIVE

- (a) Use sketch(s) to differentiate between a pit latrine and a composting latrine. **(6 marks)**
- (b) With aid of a block diagram, explain the conventional method of treating sewage. **(14 marks)**