



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

DEPARTMENT OF MEDICAL ENGINEERING
DIPLOMA IN MEDICAL ENGINEERING (DME 315)

EHL 2202
SANITATION & ENVIROMENTAL MANAGAMENT

END OF SEMESTER EXAMINATIONS

YEAR 2 SEMESTER 1

SERIES: DECEMBER, 2015

TIME: 2 HOURS

INSTRUCTIONS:

1. You should have the following for this examination:
 Answer Booklet
2. This paper consists of **FIVE** questions
3. Question **ONE** is **COMPULSORY**; attempt any other **TWO** Questions.
4. Do not write on the question paper.
5. This paper consist of **THREE** printed pages.

- 1 a) i) Define the term “sanitation” **2 Marks**
- ii) State any **THREE** reasons why sanitation is very important in health institutions **3 Marks**
- iii) Explain the **FOUR** categories of diseases that are as a result of poor sanitation **8 Marks**
- b) With aid of a well labelled diagram, explain incineration as a method of waste disposal **9 Marks**
- c) Define the following :-
- I) Sewage **4 Marks**
- II) Environment **4 Marks**
- ii State any **TWO** advantages and **TWO** disadvantages of sheet metal dust bin **4 Marks**
- 2 a) i) Define Environmental Science **2 Marks**
- ii) list **FIVE** main facets of the man-environment relationship **5 Marks**
- b) Describe pollution as a problem in environment in the following areas:-
- i High technology agriculture
- ii Nitrate and phosphate fertilizers
- iii Industrial and Municipal effluent **9 Marks**
- c) State any **FOUR** main purposes of sanitary appliances **4 Marks**
- 3 a) i) With the aid of a diagram, explain Trickling filter as a conventional biological Sewage treatment **6 Marks**
- ii State any **FIVE** classifications of solid waste **5 Marks**
- b) Describe any **THREE** problems/challenges arising from irregular emptying of dustbins **6 Marks**
- c) With the aid of diagram, distinguish between the open trench and pit latrines as types of sewage systems **3 Marks**
- 4 a) i) List **FIVE** factors that contribute to destruction of pathogens **5 Marks**
- ii) Explain why resulting effluent has to be further treated **6 Marks**
- b) Describe stabilisation ponds as a method of sewage treatment **5 Marks**

- c) Describe the following:-
- i) Environmental Audit (EA)
 - ii) Environmental Impact Assessment (EIA) **4 Marks**
- 5 a) i) With the aid of a diagram, explain the principle operation of an automatic flushing cistern **6 Marks**
- ii) Draw a labelled diagram of a slope hopper combination **6 Marks**
- b) Describe the composition of organic matter in natural sewage purification **6 Marks**
- c) Explain why pit latrine contents are not safe to handle at any time before further treatment. **2 Marks**