



Technical University of Mombasa

Faculty of Engineering and Technology
DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME Y2 S2)

EHL 2206
STEAM SYSTEM

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER, 2013
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- This paper consist of **FIVE** questions
 - Question **ONE** is **COMPULSORY**
 - Attempt any other **TWO** questions
- This paper consists of **3 PRINTED** pages

QUESTION ONE (COMPULSORY)

(a) Figure 01 shows a vertical autoclave. Name parts marked from 1 to 9 and state the functions of each part. **(18 marks)**

(b) With the aid of a neat sketch, explain the **THREE** methods used to remove/expel air from the autoclave. **(12 marks)**

QUESTION TWO

- (a) With the aid of a sketch/graph, explain porous load sterilization cycle. **(10 marks)**
- (b) (i) Explain the term “Disinfection”
(ii) Describe any **FOUR** methods of disinfection in the hospital. **(10 marks)**

QUESTION THREE

- (a) Explain the calorific value of a material **(3marks)**
- (b) Describe the **THREE** types of steam **(9 marks)**
- (c) Explain the **FOUR** causes of steam losses during steam transportation/distribution **(8 marks)**

QUESTION FOUR

- (a) (i) State any **ONE** advantage and any **THREE** disadvantages associated with Ethylene oxide sterilization.
(ii) State any **SIX** inspections and cleaning to be carried out in an Autoclave. **(10 marks)**
- (b) (i) Explain the **TWO** basic types of steam sterilizers on the basis of air evaluation/removal.
(ii) State the **FOUR** parameters for steam sterilization. **(10 marks)**

QUESTION FIVE

- (a) 200 litres of water has to be heated from 25°C to 50°C using steam heat energy, taking the specific heat capacity of water to be 4.2 kJ/kg/°C, calculate the amount of heat energy lost by steam. **(8 marks)**
- (b) Explain any **FOUR** reasons why steam is widely used for both heating and drying processes **(12 marks)**