



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME 213)

EHL 2206
STEAM SYSTEMS

SPECIAL/SUPPLEMENTARY EXAMINATIONS

SERIES: JULY, 2014

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- Question **ONE** is **COMPULSORY**
- Attempt any other **TWO** questions
- This paper consists of **2 PRINTED** pages

QUESTION ONE (COMPULSORY)

- (a) Figure 1 shows an open Top Bucket Steam Trap. Describe parts marked A, B, C, D, E and F. **(12 marks)**
- (b) Explain how the Steam Trap operates during the process. **(18 marks)**

QUESTION TWO

- (a) Explain any **FOUR** methods used for testing the efficiency of an Autoclave. **(8 marks)**
- (b) Describe the principle operation of “Little Sister” Sterilizer using a labeled diagram of the component layout. **(12 marks)**

QUESTION THREE

- (a) Explain any **FOUR** reasons why steam is widely used for both heating and drying processes **(12 marks)**
- (b) 300 liters of water has to be heated from 27° to 55° 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)**

QUESTION FOUR

- (a) Explain the **THREE** factors which should be considered when selecting/choosing the appropriate steam trap. **(9 marks)**
- (b) In many cases the condensate is returned or recycled to the boiler. Explain the advantages of doing so. **(11 marks)**

QUESTION FIVE

- (a) With 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)**