



Technical University of Mombasa

Faculty of Engineering and Technology
DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME 213 Y2 S1)

EHL 2203
HOSPITAL SERVICE SYSTEMS

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 **4 PRINTED** pages

QUESTION ONE (COMPULSORY)

(a) With reference to construction and loading, explain the **THREE** main types of washing machines. **(10 marks)**

(b) Describe the following terms as used in water:-

- (i) Pure water
- (ii) Clean water
- (iii) Hard water
- (iv) Soft water
- (v) PH

(10 marks)

(c) Explain the function(s) of the following pipe fittings:-

- (i) Union
- (ii) T-Joint
- (iii) Nipple
- (iv) Socket
- (v) 90° Elbow

(10 marks)

QUESTION TWO

(a) Explain the **SIX** essential parameters of a pump. **(12 marks)**

(b) Figure 01 shows a semi-rotary pump or wing pump explain how the pump works/ operates during pumping process **(8 marks)**

QUESTION THREE

- (a) Outline the sequences involved in an automatic machine washing process. **(8 marks)**
- (b) Explain the following terms as used in washing machines:-
- (i) A process
 - (ii) Control
 - (iii) Automatic control. **(12 marks)**

QUESTION FOUR

- (a) Differentiate between the following pipe fittings:-
- (i) Valve
 - (ii) Tap **(4 marks)**
- (b) State **FIVE** materials from which pipes and pipe fittings are manufactured from outlining advantages in each case. **(10 marks)**
- (c) Classify any **THREE** examinations that may be carried out on drinking water. **(6 marks)**

QUESTION FIVE

- (a) Explain any **FIVE** main groups of plumbing tools. **(10 mark)**
- (b) Explain the following terms/components as used in machine washing process:
- (i) Tumbling
 - (ii) Spinning
 - (iii) Solenoid valve
 - (iv) Load
 - (v) Detergent. **(10 marks)**