



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

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

**EHL 2203**  
HOSPITAL SERVICE SYSTEMS

**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 **FOUR** printed pages.

1a) Explain why kitchen and laundry departments are considered to be

Very important departments in the hospital

**10 Marks**

b) Differentiate between the following pair of terms:-

i) Pure water and clean water

ii) Hard water and soft water

i) PH scale and PH value

ii) Storage calorifier and non-storage calorifier

**12 Marks**

c) With the aid of neat sketches, explain the following types of water distribution systems:-

i) Branch or Dead –end system

ii) Gridiron system

iii) Ring system

**8 Marks**

2 a) Define the term “Pump”

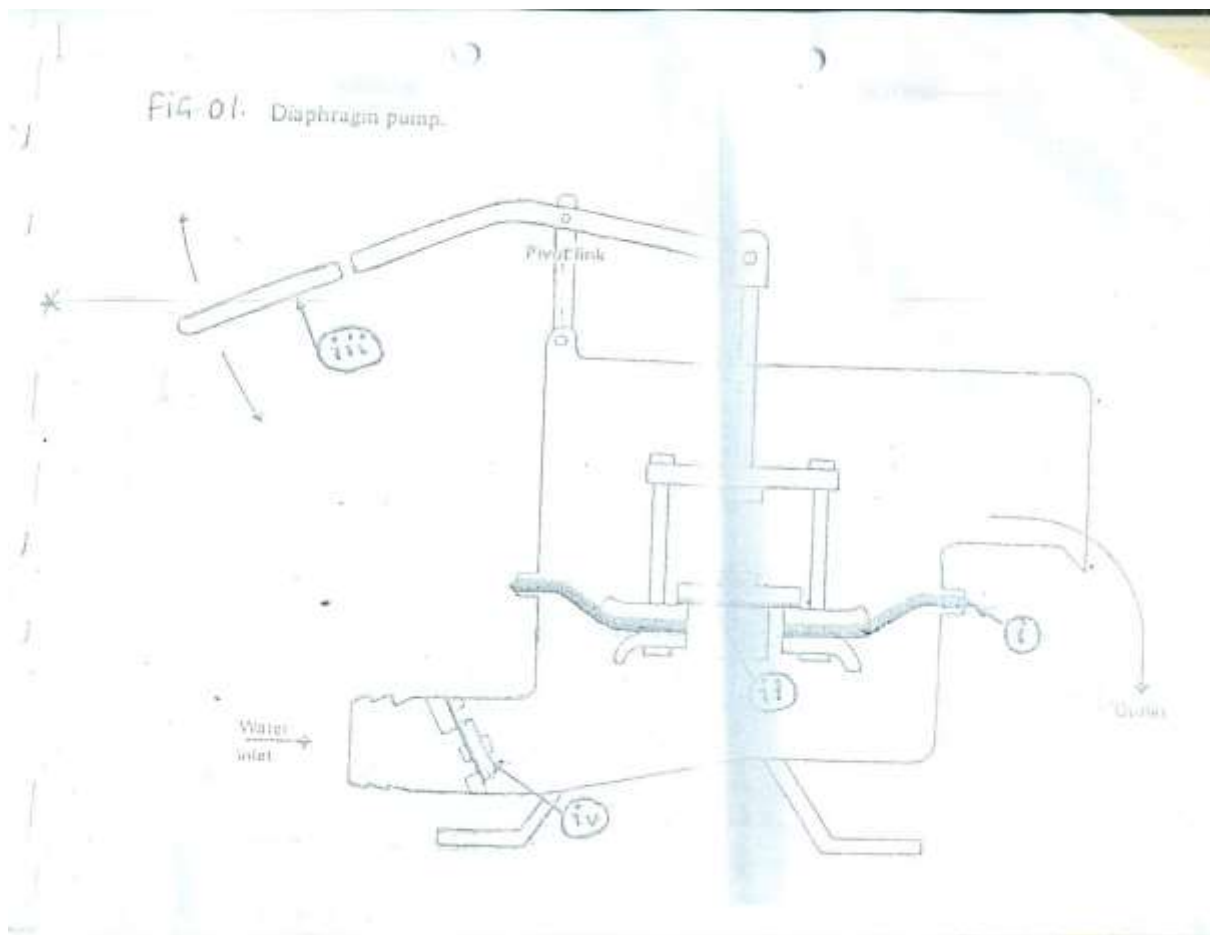
**2 Marks**

b) State **THREE** important technical parameters of a pump

**3 Marks**

c) Figure 01 shows a diaphragm pump. Name parts marked i), ii) ,iii) and iv)

**4 Marks**



d) Explain how the pump operates during pumping process

**11 Marks**

3 a) Explain any **THREE** main groups of kitchen equipment

**3 Marks**

b) Explain **FOUR** energy supplies to a standard kitchen set-up

**4 Marks**

c) Assume you are designing a kitchen for a county hospital, explain the important factors to be considered in the designing process

**13 Marks**

4 a) List **FIVE** materials from which residential and light commercial pipes and pipe fittings for plumbing are made from

**5 Marks**

b) Sketch in good proportions and state the use(s) of the following pipe fittings:-

i) Reducing coupling/socket  $\frac{3}{4} \times \frac{1}{2}$

ii) 90° Elbow

iii) Plug

iv) 1x3/4x1/2 reducing T

v) Cap

**15 Marks**

5 a) Explain the **THREE** main reasons of storing water

**9 Marks**

b) With aid of neat sketches, explain the **TWO** methods of determining the level/amount of water in storage tanks

**11 Marks**