TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL ENGINEERING

(DME 224 Y3 SII)

ECL 2307: ANAESTHESIA & RESPIRATORY EQUIPMENT

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date May 2016

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.
Do not write on the question paper.

Question ONE

a) Explain the function(s) of the following parts of anaesthetic machine:-

      i   Pressure Regulators

      ii   Gas cylinders

      iii   Carbon dioxide absorber

      iv   Flowmeters/Rotameters

      v   Vapouriser   **10 Marks**

b) With the aid of neat graphical sketches, explain the following gas laws:-

      i   Pressure Gas law

      ii   Charles' Gas law   **8 Marks**

c)   Explain the **FOUR** physical properties of gases   **12 Mark**

Question TWO

a) Explain the following terms as used in anaesthesia:-

      i   Local anaesthesia

      ii   General anaesthesia   **10 Marks**

b) Explain the following terms as used in human breathing:-

      i   Ventilation

      ii   Distribution

      iii   Diffusion

      iv   Perfusion

      V   Tidal volume   **10 Marks**

Question THREE

a) Explain any **TWO** types of Ventilators/Respirators   **5 Marks**

b) Differentiate the following:-

      i   Anaesthesia machine

      ii   Ventilator   **5 Marks**

c)Describe the following as used in anaesthetic machine
      i   Open circuit
      ii   Closed circuit   **10 Marks**

Question FOUR

a) Explain the following:-

      i   Atmospheric pressure
      ii   Gauge pressure
      iii   Absolute pressure   **6 Marks**

b)   i   State Boyles' gas law   **3 Marks**

      ii   With the aid of sketch(s), explain the relationship between

                 Boyles' gas law and the spontaneous human breathing   **11 Marks**

Question FIVE

Using block diagram, explain the technical parts of the anaesthetic machine   **20 Marks**