



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

**DIPLOMA IN MEDICAL ENGINEERING**

: ECL 2203 OPERATING THEATRE EQUIPMENT

**END OF SEMESTER EXAMINATION**

**SERIES: AUGUST 2019**

**TIME: 2 HOURS**

**DATE: 12 Aug 2019**

## **Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

Scientific Calculator

This paper consists of **five** questions. Attempt any **THREE** questions.

**Do not write on the question paper.**

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## **QUESTION ONE**

- (a) Differentiate between Hospital and Medical Equipment giving an example in each case  
(4 marks)
- (b) Describe any **FOUR** possible causes for a surgical burn during a surgery procedure.  
(8 marks)
- (c) List any **FOUR** rooms of an operating theatre department, and outline for each, its uses.  
(8 Marks)

## QUESTION TWO

- (a) With the aid of sketches/formula describe the THREE effects of an electrical current as it passes through a biological tissue (8marks)
- (b) With the aid of sketches describe the THREE h/f surgical diathermy wave forms as they would appear on an oscilloscope. (12Marks)

## QUESTION THREE

- (a) With the aid of a sketch describe the working principles of an automatic changeover system of an operating theatre lamp. (10Marks)
- (b) Describe any FIVE factors that can influence the coagulation thickness K layer value during a surgical CUT procedure. (10 Marks)

## QUESTION FOUR

- (a) (i) List the SIX minimum legal surgical team member (12Marks)
- (ii) Describe the roles of each of the legal surgical team member (4 Marks)
- (b) With the aid of sketches differentiate between a single acting cylinder and a double acting cylinder, as applied in hydraulic table systems. (4Marks)
- (c) List any other FOUR names for the neutral plate. (4Marks)

## QUESTION FIVE

- (a) Describe an operating theatre safety report under following headings:
- i. Staff,
  - ii. Humidity,
  - iii. Electrical Equipment,
  - iv. Medical Gases , (12Marks)
- (b) Describe any FOUR selectable surgical procedures on a surgical diathermy machine (8Marks)