



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME Y2 S2)

ECL 2203
OPERATING THEATRE EQUIPMENT

SPECIAL/SUPPLEMENTARY EXAMINATIONS

SERIES: JULY, 2014

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

-Answer the **COMPULSORY** question No. 1 and any other **TWO** questions.
This paper consists of **3 PRINTED** pages

QUESTION ONE (COMPULSORY)

- (a) (i) List any **SIX** operating theatre equipment. (12 marks)
- (ii) Outline uses of these **SIX** operating theatre equipment. (12 marks)
- (b) By tabulation indicate any **FIVE** differences between major and minor Operating Theatres. (10 marks)
- (c) List any **EIGHT** requirements of an Operating Theatre Lamp. (8 marks)

QUESTION TWO

- (a) Describe the **THREE** factors that contribute to a surgical cut. (6 marks)
- (b) Describe any **FIVE** factors that influence the coagulation layer thickness (K) (10 marks)
- (c) List any other **FOUR** names of Neutral Plate of a surgical RF machine. (4 marks)

QUESTION THREE

- (a) Describe **THREE** key points for considering RF/HF components in the design of a surgical machine. (6 marks)
- (b) Sketch to show Faradic effects curve varies with frequencies. (4 marks)
- (c) During a certain surgical procedure a current of 1.42 Amperes passed through a biological tissue of 200Ω in 0.6 seconds. Calculate temperature rise at the active electrode cutting field of 0.12 cm^3 (10 marks)

QUESTION FOUR

Describe any **TEN** constructional recommendation of an Operating Theatre Hall. (20 marks)

QUESTION FIVE

- (a) Describe any **THREE** selectable surgical procedures on a surgical machine. (6 marks)
- (b) List the **SIX** minimal surgical staff/team. (6 marks)

(c) Sketch and label an Automatic Change over system of an Operating theatre Lamp. **(8 marks)**