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**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2019/2020**

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN PUBLIC HEALTH**

**MLS 2102: PHYSICS FOR MEDICAL SCIENCE**

**DATE: APRIL, 2020 TIME: 2 HOURS**

INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

**QUESTION ONE: 48 MARKS**

a. Explain the following terms. (6 marks)

 i. Energy efficiency

 ii. Sensible and latent heat

 iii. Specific heat and heat capacity

b. State Ohm’s Law and derive the equation. (6 marks)

c. Specific heat capacity is affected by various factors. Explain any three of these factors. (6 marks)

d. State the Laws of total internal reflection. (6 marks)

e. Explain the process of Homeostasis in a human body. (6 marks)

f. Describe how cones and rods function in vision. (6 marks)

g. Outline and explain any three temperature scales indicating their water freezing and boiling points. (6 marks)

h. Describe how an Artificial cardiac pacemaker works. (6 marks)

**QUESTION TWO: 22 MARKS**

Discuss the various eye-defects with their corrective measures.

**QUESTION THREE: 22 MARKS**

Describe the working principle, operational procedures and the advantages of a CT-

scanner over an x-ray machine

**QUESTION FOUR: 22 MARKS**

Discuss the working principle and interpretation of an ECG machine.