

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

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2018/2019**

**YEAR I SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT/HEALTH INFORMATION AND RECORDS MANAGEMENT**

**ICH 2102/MLS 2102: MEDICAL PHYSICS/PHYSICS FOR MEDICAL SCIENCES**

**DATE: AUGUST 2019 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY ONE QUESTION IN SECTION B**

SECTION A (48 MARKS) COMPULSORY

1. a. Explain the following terms:

i. Energy storage

ii. Sensitive heat and intent heat. (2 marks)

iii. Specific heat and heat capacity. (2 marks)

b. Explain the three modes of heat transfer. (6 marks)

c. State Ohm’s law and express the equation. (6 marks)

d. Explain how heat is transferred in the human body. (8 marks)

e. State the laws of thermodynamics and explain them. (6 marks)

f. Briefly describe the human visual system. (6 marks)

g. Explain the laws of reflection. (3 marks)

h. Describe the working principles of an endoscope. (7 marks)

2. a. Explain how an ECG machine operates. (10 marks)

b. Describe the principle behind magnetic Resonance imaging. (12 marks)

3. a. Explain the various vision and eye defects. (12 marks)

b. Explain how lenses are used to correct impaired eyes. (10 marks)

4. Discuss the relationship between physics concepts and medicine. (22 marks)