

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

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2020/2021**

**YEAR 1 SEMESTER 1 EXAMINATION FOR THE DEGREE OF BACHELOR OF SSCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT**

**ICH 2102: MEDICAL PHYSICS I**

**DATE: APRIL 2021 TIME: 2 HOURS**

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

**QUESTION ONE: 48 MARKS**

a. Explain the following terms:- (6 marks)

i. Heat

ii. Latent heat of fusion

iii. Latent heat of vaporization

iv. Temperature

v. Resistivity

vi. BMI

b. Describe the modes of heat transfer. (6 marks)

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

d. Explain the scales used for measuring temperature and indicate the freezing point in each. (6 marks)

e. Ice cubes of mass 50g at 00C is heated by a 50W heater. The ice takes 5 minutes to melt completely. What is the specific latent heat of fusion of ice? (6 marks)

f. State Kirchhoff’s Law and derive the equations. (6 marks)

g. Explain any three applications of Electrostatics in medical physics. (6 marks)

h. Use a diagram to explain the Laws of internal reflection. (6 marks)

**QUESTION TWO: 22 MARKS**

Discuss vision and eye defects with their corrections.

**QUESTION THREE: 22 MARKS**

Discus the principle and operation procedures of any one optical instruments used in the

medical field.

**QUESTION FOUR: 22 MARKS**

Discuss any two equipments used in medical imaging