



(University of Choice)

**MASINDEMULIROUNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**MAIN/WEBUYE CAMPUSES
UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR
SCHOOL BASED**

**THIRD YEAR FIRST SEMESTER
FOR THE BED (SCIENCE) STUDENTS**

COURSE CODE : ESM 323

COURSE TITLE : PHYSICS EDUCATION

DATE: 20/04/2022

TIME: 2:00-5:00PM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE compulsory carrying 25 marks and any other THREE questions each carrying 15 marks.

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE [25 MARKS]

- a) Describe the two types of scientists based on what they do
[4 marks]
- b) Think up a problem in the teaching /learning process which you may wish to solve using the scientific method
- i. Describe the problem exactly [1 mark]
- ii. Explain how you have noticed the problem [1 mark]
- iii. What are the variables [independent and dependent] you may wish to manipulate?
[2 marks]
- iv. Explain the qualitative and quantitative data that you may have to collect as you test your hypothesis
(2 marks)
- c) Explain five criteria used in choosing a suitable method for classroom instruction
[5 marks]
- d) Describe any five differences between formative assessment and summative assessment.
[5 marks]
- e) Explain any five responsibilities of the teacher during a physics practical lesson
[5 marks]

QUESTION TWO [15 MARKS]

- a) Explain any three functions of a scheme of work in the teaching / learning process
[3 marks]
- b) Prepare a sample scheme of work for two weeks on the topic 'MAGNETISM' under the following titles.
- Properties of magnets
 - Magnetic field properties
 - The domain theory
 - Magnetism
 - Demagnetization
 - Uses of magnets.

This topic is taught in form two.

[12 marks]

QUESTION THREE [15 MARKS]

- a) Explain the five roles of mathematics in the process of teaching physics. [5 marks]
- b) Explain how you can use technology to mitigate the effects of covid -19 pandemic on teaching and learning of physics. [10 marks]

QUESTION FOUR [15 MARKS]

- a) Explain any THREE disadvantages of an objective physics test [3 marks]
- b) Explain the implication of the process view for science teaching [4 marks]
- c) Explain FOUR characteristics of constructivism that enhances learning of physics [8 marks]

QUESTION FIVE [15 MARKS]

- a) Explain FIVE reasons why students do not fully excel in physics [5 marks]
- b) Explain any five advantages of the competency based curriculum [CBC] that is being currently rolled out in Kenya over the outgoing 8-4-4 curriculum (10 marks)