



MAASAI MARA UNIVERSITY

SPECIAL/ SUPPLEMENTARY EXAMINATIONS

2020/2021

THIRD YEAR FIRST SEMESTER

**SCHOOL OF EDUCATION
BACHELOR OF EDUCATION**

COURSE CODE: ECI 3117

**COURSE TITLE: SPECIAL METHODS IN
PHYSICS**

DATE:

TIME:

INSTRUCTIONS TO CANDIDATES

*This paper consists of **THREE** printed pages. Please turn over.*

Answer Question **ONE** and any other **two** questions

QUESTION ONE (Compulsory)

- Q1. a) Briefly explain three basic elements of science citing relevant example for each **(6mks)**
- b) (i) Define the term scientific concept **(2mks)**
- (ii) Differentiate between an empirical concept and a theoretical concept in physics **(4mks)**
- c) Outline the main branches of physics **(6mks)**
- d) Briefly, explain the difference between *strategies, methods* and *techniques* of teaching physics **(6mks)**
- e) Distinguish the terms *teaching practice* and *micro teaching* as used in physics teachers' training. **(6mks)**
- Q2. a) Define the term marking scheme **(2mks)**
- b) Explain five points that need to be considered in preparing a marking scheme for a physics test. **(10mks)**
- c) (i) what is test item analysis? **(2mks)**
- (ii) Explain the importance of test item analysis **(6mks)**
- Q3. a) Differentiate between the terms *physics curriculum* and *physics syllabus* **(4mks)**
- b) Outline the four components of a physics curriculum **(4mks)**
- c) Explain briefly six factors that need to be considered when designing a physics syllabus. **(12mks)**
- Q4. a) What is a physics scheme of work? **(2mks)**
- b) Write and explain briefly six factors that should be considered when scheming for physics. **(12mks)**
- c) Explain briefly the salient features of a physics scheme of work. **(6mks)**

Q5. a) List and explain five factors that need to be considered in selecting teaching aids for teaching physics. **(10mks)**

b) Explain the general features of a modern physics laboratory design. **(10mks)**