



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR
THIRD YEAR SECOND SEMESTER**

**SCHOOL OF EDUCATION
B. ED (SCIENCE)**

**COURSE CODE: ECI 3117-1:
COURSE TITLE: SPECIAL METHODS IN
PHYSICS**

DATE: 14TH DECEMBER, 2022

TIME: 1430-1630

INSTRUCTIONS TO CANDIDATES

Question ONE is compulsory

Answer any other TWO questions

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Answer Question One and Any Other Two Questions

1 (a) Discuss any four reasons why Physics is an important component of the Secondary Education Curriculum in Kenya (8mks)

(b) Identify any suitable content area in the current secondary Physics syllabus for Form I or Form II. You plan to teach a concept in the identified area in a 40-minutes lesson.

- i. Identify the main topic and the lesson topic (1mk)
- ii. State two suitable objectives at different level of cognition for the lesson (2mks)
- iii. Complete the following sections of the lesson plan (9mks)

Step and Time	Content (Concept/Skill)	Teaching/Learning Activities	Teaching/Learning Resources
Introduction			
Development			
Conclusion			

2 (a) Discuss any five factors that have informed the reform in the education sector from the current knowledge-based to the envisaged competency-based curriculum for secondary school science in Kenya (10mks)

(b) Outline five curriculum-centered factors that led to the failure of the School Science Project (SSP) curriculum for Physics in Kenya in the 1970s from which the planned CBC can borrow (5mks)

3 (a) Fill the following table with respect to identification and assessment of science process-skills in Physics education (8mks)

Process-skill	Description	Example of item to assess
Prediction		
Applying		
Interpreting		
Inferring		

(b) Identify three curriculum-centered, two teacher-centered and two learner-centered factors that a Physics teacher should consider in selecting a suitable method of instruction (7mks)

4 (a) Highlight the five categories of human capabilities that a Physics teacher should aim to develop in planning for Physics instruction (5mks)

(b) Examine the demonstration method of teaching under the following aspects:

- i. Teacher preparation for the lesson (2mks)
- ii. Key teacher roles during the lesson (2mks)
- iii. Strengths (2mks)
- iv. Limitations (2mks)
- v. Improvements in the light of the limitations (2mks)

5 (a) Discuss the suitability of a Physics laboratory as an instructional resource under the following aspects:

- i. Location and design (3mks)
- ii. Basic components (4mks)
- iii. Safety in the laboratory (4mks)

(b) Explain any four factors a Physics teacher should consider in selecting and using models for teaching Physics (4mks)

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