



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2009/2010

INSTITUTION BASED PROGRAMME

APRIL SESSION EXAMINATION FOR THE DEGREE OF MASTER OF EDUCATION

ECT 527: METHODS AND TRENDS IN PHYSICS EDUCATION

DATE: Tuesday 2nd September, 2010

TIME: 9.00 a.m. – 12.00 p.m.

INSTRUCTIONS

Answer Question 1 and any other 2 questions.

Question 1 (30 marks)

- a) Outline six of the goals of teaching High School Physics in Kenya.
- b) Briefly discuss, citing at least three examples, the application of physics in management of health, and prevention and treatment of diseases.
- c) Give and explain four roles of high school physics project work that no other teaching method can play.
- d) Explain how technological innovations have influenced the teaching and learning of physics in the high school.

Question 2 (20 marks)

- a) What is physics?
- b)
 - (i) Identify the teaching approach that is most suitable for teaching physics and explain four characteristics that make the approach suitable.
 - (ii) Discuss three of the teaching methods that lean towards the approach identified in (i) above.

Question 3 (20 marks)

- (a) Explain the challenges that high school physics education is said to be experiencing in Kenya.
- (b) What is the importance and possible outline of teaching the topic ‘Testing and Evaluation in Physics’ to undergraduate physics education students?

Question 4 (20 marks)

- (a) Distinguish classical and quantum mechanics as they apply to high school physics.
- (b)
 - (i) Explain the meaning of ‘Model’ as applied in teaching physics.
 - (ii) Illustrate application of three models in teaching of physics.

Question 5 (20 marks)

- (a) Outline the historical development of physics.
- (b)
 - (i) Identify the reforms that have taken place in high school physics curriculum in Kenya since independence.
 - (ii) What factors influenced these reforms?
 - (iii) How did these reforms affect the teaching of physics in the schools?

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