



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2014/2015
DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF EDUCATION

ECT 306: PHYSICS SUBJECT METHODS

DATE: Saturday, 2nd May 2015

TIME: 2.00 p.m. – 4.00 p.m.

INSTRUCTIONS:

Do **Question 1** and any other **Two**

Question 1

- (a) Distinguish between the terms Theory and Model as applied in high school physics.
[4 Marks]
- (b) Explain, using Boyle's law, the various types of variables that may be considered in a high school physics investigation.
[5 Marks]
- (c) Give an example showing the steps in the deductive method in the study of high school physics.
[5 Marks]
- (d) What reasons made the school science project (SSP) curriculum not to be scaled up to all secondary school in Kenya?
[6 Marks]
- (e) Explain with examples, **three** reasons that would make "demonstration" a suitable teaching method for a physics teacher.
[6 Marks]
- (f) Identify experiment resources for illustrating the concept of pressure variation with depth in a fluid.
[4 Marks]

Question 2

- (a) Explain two examples of how physics knowledge and technology is applied in each of the following health matters.
- (i) Diagnosis of diseases/health conditions;
 - (ii) Management of health conditions. [8 Marks]
- (b) How is physics important for those whose education terminates at High School. [12 Marks]

Question 3

- (a) Describe any **four** basic science process skills inculcated through high school physics in Kenya. [8 Marks]
- (b) (i) Your Form 1 students are to make an inquiry into the heat transfer. Propose at least **four** inquiry questions you can expect from the learners. [4 Marks]
- (ii) Suggest an outline for carrying out an investigation based on any one of the inquiry questions in (b) (i) above, clearly indicating the resources necessary. [8 Marks]

Question 4

- (a) You are to teach the subtopic ‘Magnetic field patterns’. State **four** appropriate objectives for a 40-minute lesson in this area. [8 Marks]
- (b) Discuss suitable learning activities and the corresponding resources to achieve the objectives. [12 Marks]

Question 5

- (a) What does formative evaluation entail? [6 Marks]
- (b) In a test, your students are asked: “Explain how to conduct experiment to find the critical angle of glass”.
- (i) Describe the procedure you would expect from the students. [8 Marks]
 - (ii) Provide a marking scheme for the answer. [6 Marks]