

UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

MAIN EXAMINATION PAPER 2007

B. Ed. III AND PGCE F/T

- TITLE OF PAPER** : Curriculum studies in Physics II
- COURSE NUMBER** : EDC 382
- TIME ALLOWED** : Three (3) hours
- INSTRUCTIONS** :
1. This paper contains five questions
 2. Question 1 is **COMPULSORY**. You may then choose **ANY THREE** questions from questions 2,3, 4, 5
 3. Each question is worth 25 marks
 4. Any piece of material or work which is not intended for marking purposes should be clearly **CROSSED OUT**
 5. Ensure that responses to questions are **NUMBERED CORRECTLY**

THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION HAS BE GRANTED BY THE INVIGILATOR

Section A

Question 1 is compulsory.

QUESTION 1

Practical physics skills are developed gradually throughout all the levels of education. Use the following to design learning activities that help learners to value accuracy in experiments.

- a. Measurement of lengths using a micrometer screw gauge [5]
- b. Treatment of random errors in measurement of the period of a pendulum. [10]
- c. Use of a graph to calculate rate of change of a variable. [10]

Section B

Answer any three questions.

Question 2

Analyse the extent to which physics education can empower people in Swaziland to develop a higher standard of living. [25]

Question 3

Discuss the influence of assessment practices in Swaziland on the purposes of physics education. [25]

Question 4

Students often believe that physics in the real world and in school science are not related. Use the following real world contexts to demonstrate physics principles to secondary school pupils.

- a. Cooking is very quick in a pressure cooker
- b. Doors and windows in air conditioned rooms should be kept closed
- c. Water spray from a hose pipe in sunshine produces a rainbow
- d. Microwave heats food in but not the ceramic dish containing it
- e. Lightning flashes are seen several seconds before the sound of thunder. [25]

Question 5

Demonstrate that it is possible to teach good physics using a small budget and materials from the environment, without sophisticated laboratories and equipment. [25]