

**UNIVERSITY OF SWAZILAND**

**FACULTY OF EDUCATION  
FINAL EXAMINATION PAPER**

**May 2008**

**B. Ed. II AND PGCE F/T**

**TITLE OF PAPER :** Curriculum Studies in Physics

**COURSE NUMBER:** EDC 282

**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. Question 1 is worth 40 marks and all the other questions are worth 20 marks each.
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 BEEN GRANTED BY THE INVIGILATOR**

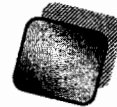
## Question 1. Compulsory [40 marks]

Discuss the pedagogic value of each of the following real life situations in physics teaching:

- a. A child discovers that she can control the television set by sending signals from the remote control to a mirror at an angle to it. She tried this from four different positions as shown in the diagram below. [8]



Television



Mirror at an angle to both TV and remote control



1



2



3



4

- b. A local business man donated ten used computers to your rural school and children are so fascinated, they come back to school in the afternoon to learn how to use them. The Physics teacher takes the 'Computer' classes. [8]
- c. Your school grounds are the selected site for a crash test of a new model of a car. Students from the Physics class are allowed to watch just after studying the topic on kinematics and dynamics. [8]
- d. A total eclipse of the sun is going to happen in your area. The Department of Public Health requests your school to design public information leaflets to explain the meaning of a total eclipse of the sun, precautions to be taken and atmospheric changes that happen in the nine minutes of total eclipse. [8]
- e. At a workshop for physics teachers, you are required to facilitate a session where you develop class activities about Experimental Accuracy and Precision under the theme 'Demonstrating the nature of science in physics lessons'. [8]

## Question 2

One of the aims IGCSE Physics 0625 is

*To promote awareness that:*

*5.2 the study and practice of science are subject to social, economic, technological, ethical and cultural influences and limitations;*

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Using selected areas of the Physics syllabus show the influences and limitations of **ANY TWO** of the five highlighted terms in the study and practice of science. [20]

## Question 3

For a term (three months) you teach a class of girls who have the general opinion that Physics is difficult and boring. Outline a possible plan of activities to motivate students' interest in the one term that you are teaching them. [20]

## Question 4

Critically analyze the purposes of practical work in school science. [20]

## Question 5

Similarities in physics must be exploited to develop a structure of the subject. Use the following pairs of phenomena to explain the underlying physics principles:

Pair 1	Cathode rays can be deflected by an electric or a magnetic field	A mass projected at an angle $\alpha$ to the horizontal in a gravitational field, will move in a parabolic path back to the ground.
Pair 2	Paper cone used as a megaphone	Pivoted beam used to move a heavy mass
Pair 3	Canvas water bag hanging outside moving vehicle cools water.	Refrigerant cools the food compartment of a fridge

[20]