

UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

SUPPLEMENTARY EXAMINATION PAPER 2010

B. Ed. II 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**

SPECIAL REQUIREMENTS

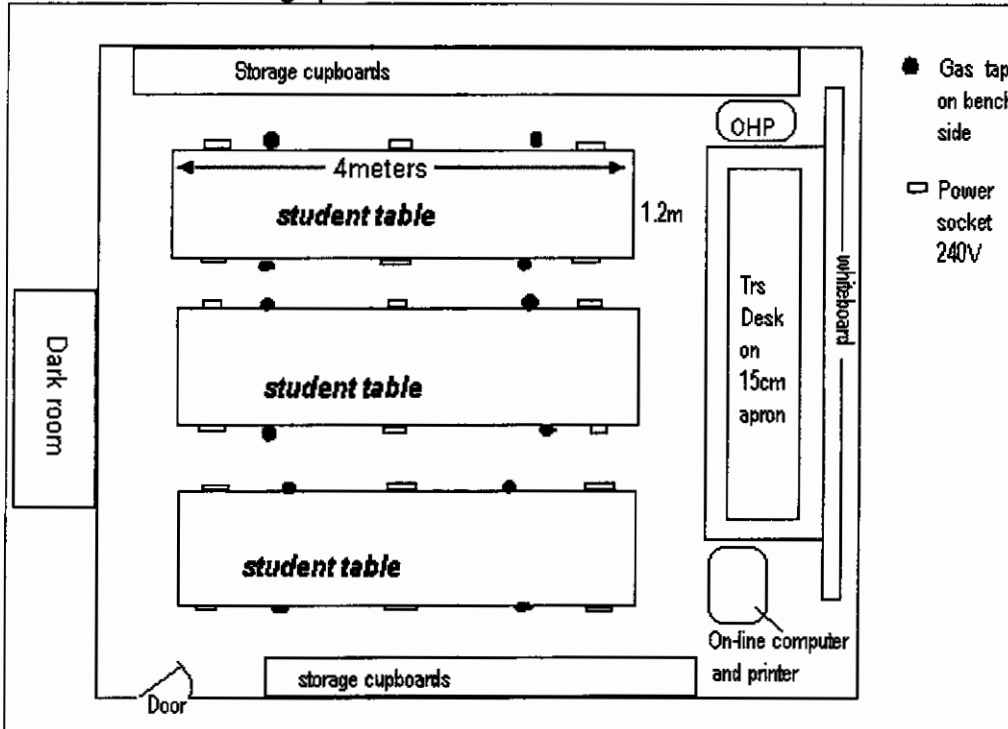
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Section A. Compulsory. 40 marks

Question 1.

Your Physics class has 24 students and the laboratory has a structural layout as indicated in the diagram below. Electricity sockets and gas taps are fitted to the dropping sides of the wooden tables such that the top surface is bare. You have four periods per week for practical physics. Carefully study the plan of the physics lab and answer the following questions.



- a. What are the advantages of having wooden tables in the laboratory? [4]
- b. Why is a whiteboard preferred instead of the traditional green board? [4]
- c. What four safety features do you recommend for the laboratory? [6]
- d. Why are the following necessary in the laboratory design:
 - i. Dark room,
 - ii. raised apron,
 - iii. bare table tops, [6]
- e. To what extent does the design of this laboratory facilitate learner-centered teaching methods? [10]
- f. Outline how you could use the following teaching aids
 - i. OHP to physically demonstrate Faradays laws of electromagnetic induction
 - ii. Computer to analyse current –voltage variation across a circuit component. [2x5]

Question 2

Demonstrate that it is possible to teach good physics using a small budget and materials from the environment, without sophisticated laboratories and equipment. [20]

Question 3

Discuss the use of mathematical tools in the teaching of physics in classes. [20]

Question 4

Design and describe a learning program for high school physics students going to any one of the following places for an education tour: [20]

- Lumphohlo Hydro Power Station
- MTN control room
- Medical laboratory
- Bridge construction site.

Question 5

Assessment should be viewed as part of the academic development of a learner rather than be feared as a selection tool. Discuss. [20]