

UNIVERSITY OF SWAZILAND**FACULTY OF EDUCATION****MAIN EXAMINATION PAPER 2005****B. Ed. II AND PGCE F/T**

- Title of paper** : Curriculum Studies in Chemistry
- Course number** : EDC 279
- Time allowed** : Three (3) hours
- Instructions** :
1. This paper contains SIX questions
 2. Question 1 is COMPULSORY. You may then choose ANY THREE questions from questions 2,3, 4, 5 and 6
 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

Chemistry Section of the O' Level Science (Physics/Chemistry) syllabus
O' Level Chemistry Textbook

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

QUESTION 1

This question is compulsory

Write short notes on the following:

- a) The need for extrinsic motivation for pupils. [6]
- b) The need to use behavioural objectives for science instruction. [6]
- c) The need to select the most appropriate method of teaching for a specified topic. [6]
- d) The need for lesson planning prior to instruction [7]

QUESTION 2

Science and teaching about science involves three dimensions that are important. These are the **body of scientific knowledge, processes of science and scientific attitudes.**

- a) Explain, with the help of at least **two** examples, what each of the dimensions above mean. [9]
- b) What might you suggest to a science teacher as strategies for enhancing the development of the three dimensions of science referred to above when teaching? [6]
- c) School science rarely deals with the philosophies of science, yet much of the current views of what science is and how progress in science is achieved are based on contributions from such philosophies. Discuss briefly the contributions made by the following philosophers to the development of an understanding of the nature of science.
 - i) Karl Popper [5]
 - ii) Thomas Kuhn [5]

QUESTION 3

- a) In his article entitled; *A critical look at practical work in school science*, Hodson (1990) expresses the following opinion about school science practical work:

“It is my own view, based on twenty years of teaching and teacher-training experience, that practical work is ill-conceived, confused and unproductive. It provides little educational value.” (p. 33).

Discuss the basis of Hodson’s view showing how school practical work might exhibit the characteristics expressed above. [10]

- b) Science is a compulsory component of the school curriculum. Discuss five points that may be used to justify the pupils’ study of science at school level. [15]

QUESTION 4

- a) Discuss the arrangements you might make in preparing to teach a lesson in a **chemistry topic** of your choice using the following two teaching methods:
- (i) Demonstration
 - (ii) Discussion [10]
- b) Explain what is meant by “wait time” logic control during questioning and explain its benefits for teaching. [5]
- c) Compare and contrast the standard practical and the guided discovery approaches to conducting practical work for a chemistry class. [10]

QUESTION 5

- a) i) Discuss **four** factors that might affect the motivation of pupils to learn chemistry. [8]
- ii) What appropriate strategies might a teacher apply to promote learner motivation? [7]

- b) Discuss **three** causes of management problems in a chemistry class or laboratory. In your discussion make suggestions on what a teacher might do to deal with management problems. [10]

QUESTION 6

- a) Assessing student learning is part and parcel of the teaching and learning process. Assessment can be performed through criterion referenced tests or norm-referenced tests or both.
 - (i) Why should teachers assess learning in their classroom? [6]
 - (ii) What is meant by “norm-referenced testing” and what is its significance in assessment? [7]
- b) The following assessment objectives are given in the O’ Level Science (physics /chemistry) syllabus:

B Handling Information and Solving Problems
Students should be able – in words or by using other written, symbolic, graphical and numerical forms of presentation – to

- . translate information from one form to another;*
- . use information to identify patterns, report trends and draw inferences*

With reference to the chemistry syllabus topic “Chemical Reactions” construct an assessment item that is worth 10 marks, that could be used for assessing learning involving the above two objectives. Construct a marking guide for your assessment item. [12]