

UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
MAIN EXAMINATION PAPER 2008
B. Ed. III AND PGCE

Title of paper : Curriculum Studies in Chemistry II

Course number : EDC 379

Time allowed : 3 hours

Instructions :

1. This paper contains SIX questions
2. Question 1 is COMPULSORY. You may then choose ANY TWO questions from questions 2, 3, 4, 5.
3. Marks for each question are indicated at the end of the question.
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

IGCSE Physical Science (0652) syllabus (Chemistry section)

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

SECTION A

QUESTION 1

This question is compulsory

a) Explain why teachers should write out a detailed scheme of work before embarking on teaching chemistry. [20]

b) Below is a list of topics and sub-topics taken from the chemistry section of the IGSCCE-Physical Science syllabus (attached).

Suggest an order for teaching these topics and sub-topics, giving reasons for your answer

Periodic trends

Identification of ions

Characteristics properties of acids and bases

Preparation of salts

Molecules and covalent bonds

Bonding and the structure of matter

Group properties

Ions and ionic bonds

[20]

SECTION B

Answer any two questions

QUESTION 2

The girls and boys are both psychologically brainwashed into believing that girls cannot succeed in SMTE (Science Mathematics and Technology Education). This is done through the curricula, in addition to other discouragements by the schools and society in general. The girls fail to see the relevance of SMT in their lives and hence lose interest and perform poorly. (Mulemwa 2002:4)

Discuss Mulemwa's concerns regarding the "psychological brainwashing" of boys and girls and their implications for science teaching: [30]

QUESTION 3

The following alternative conceptions/misconceptions on “The particulate nature of matter” have been identified through research in science education.

- A *Matter is static and continuous*
 - B *There are no empty spaces in between the particles of matter since nature does not allow a vacuum*
 - C *Particles or molecules move because wind blows them*
 - D *Particles of a solid melt as the solid changes to liquid on heating*
 - E *Particles in a liquid are further apart than they are in solids*
- a) Explain why each of the ideas above are considered to be misconceptions. [10]
b) Why is it important that pupils develop an appropriate conception of the kinetic particle theory of matter? [5]
c) Describe classroom activities that could be useful in challenging and addressing each of the conceptions presented above. [15]

QUESTION 4

Discuss language use in the teaching of chemistry in Swaziland. [30]

QUESTION 5

- a) i) Besides the identification of objectives, what other **three** main processes take place in curriculum development? [3]
ii) Briefly describe what each of the three processes referred to in 6a) i) above involve, indicating how each is linked to the rest of the curriculum development process [15]
- b) Explain the importance of involving the following stakeholders when developing a school science curriculum:
i) teachers
ii) employers
iii) parents [12]