

**UNIVERSITY OF SWAZILAND  
FACULTY OF EDUCATION  
FINAL EXAMINATION QUESTION PAPER, MAY 2005**

**TITLE OF PAPER : CURRICULUM STUDIES IN BIOLOGY II**

**COURSE CODE : EDC 378/578**

**TIME ALLOWED : THREE (3) HOURS**

**INSTRUCTIONS : CHOOSE ANY FOUR (4) QUESTIONS**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN  
GRANTED BY THE INVIGILATOR**

1.
  - a) Science and technology are related. Explain [4]
  - b) Society has benefited from advances in science and technology. How has Swazi society in particular, benefitted from advances in biological sciences and technology? [15]
  - c) Swaziland, like the majority of African countries, is a consumer rather than a producer of technology. Why should Science, Technology, and Society issues be taught in Swazi schools? [6]
2.
 

Practicals, as written in traditional texts, are difficult to carry out in most schools in Swaziland due to the following (among others): lack of equipment, scarce financial resources and large class sizes. However, science concepts, principles, and theories can be successfully taught with practicals using relevant traditional technologies to explain science concepts if a relevant science curriculum is developed.

  - a) Outline the steps you would take to develop a relevant and affordable science curriculum for a rural secondary school. Include considerations you would make to plan, develop, and implement your curriculum. [15]
  - b) What is the pedagogical value of using local materials to provide learning experiences? [10]
3.
  - a) Over the years, women have been underrepresented in science professions. State causes for this seeming underrepresentation of women in science that have been reported across the globe. [15]
  - b) Apparent gender differences have been observed in many areas in physics for certain groups of children. What arguments have been used to account for these differences? [10]
4.
  - a) Explain how the following learning and instruction theories lead to effective teaching and meaningful learning.
    - i) Concept development and conceptual change.
    - ii) Ausubel's theory of meaningful learning and prior concepts.
    - iii) Constructivism. [15]
  - b) Explain how concept mapping facilitates meaningful learning. [10]

5. In most schools in Swaziland where electricity is available teachers use the following resources because they can be purchased with ease or are readily available:

Chart	worksheet
Textbook	overhead projector transparency

- a) Why are these resources important? [5]
- b) Explain how each one can be used as an effective teaching/learning aid for a particular topic in biology. [12]
- c) State the cognitive abilities and process skills that could be developed through the use of these resources in the topic chosen in b) above. [8]