

**UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
DEPARTMENT OF CURRICULUM AND TEACHING
FINAL EXAMINATION QUESTION PAPER, MAY 2009**

TITLE OF PAPER : **CURRICULUM STUDIES IN BIOLOGY I**
COURSE CODE : **EDC 278**
STUDENTS : **BEd. II, PGCE**
TIME ALLOWED : **THREE (3) HOURS**

INSTRUCTIONS:

- 1. This examination paper has six (6) questions. Answer any four (4) questions**
- 2. Each question has a total of 25 points.**
- 3. There is an attachment (Mackean, D. G., 2001, pages 31-32) for one question**

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1. The philosophers, Karl Popper and Thomas Kuhn hold certain views on *demarcation in science*. Discuss how their views impact on how scientific progress is made. [25]
2. Peter Medawar does not seem to like 'the scientific paper'. Critically examine this statement. [25]
3. a) The assessment standards from the National Science Education Standards identify characteristics of *fair* and *accurate* student assessment. Suggest how science teachers can ensure fair and accurate assessment. [10]
 b) Discuss the impact of formative assessment on teaching and learning. [15]
4. The learning cycle, is composed of 5 phases, that is, engagement, exploration, explanation, elaboration, and evaluation. Explain how each phase engages the learner, citing instances in biology instruction. [25]
5. Select a topic in Biology. Illustrate how it can be used in an inquiry based discussion in a Form IV biology class [25]
6. The following is the curriculum content for the topic *photosynthesis* from the SGCSE biology syllabus, 2009-2010.

Topic	Core	Extended
Osmosis	<p>All learners should be able to</p> <p>- define osmosis as the passage of water molecules from a region of their higher concentration to a region of their lower concentration, through a partially permeable membrane</p> <p>- describe the importance of osmosis on the uptake of water by plants, and its effects on plant and animal tissues</p>	<p>- understand the concept of a water potential gradient</p>

Use the attached information on osmosis and your own knowledge of the topic to answer the following questions.

- a) i) Write four (4) objectives you would want to achieve in teaching the topic on osmosis. [8]
 ii) Identify the ABCD's (Audience, Behaviour, Condition, Degree of accuracy) for each objective [4]
- b) Name two (2) process skills you would want to develop and explain how you would develop them in the lesson. [6]
- c) Identify an appropriate teaching strategy and briefly explain how you would use it, and why this strategy is suitable. [7]