

UNIVERSITY OF SWAZILAND



FACULTY OF EDUCATION

DEPARTMENT OF CURRICULUM & TEACHING

EXAMINATION QUESTION PAPER

MAY 2016.

TITLE OF PAPER:       ADVANCED CURRICULUM STUDIES CHEMISTRY II

COURSE CODE:         EDC 647 / CTE 616

STUDENTS: M. Ed. Curriculum & Teaching.

TIME ALLOWED:       Three (3) Hours

INSTRUCTIONS: 1. There are five questions in this paper.

2. Answer any four questions

3. Each question has a total of 25marks.

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED  
BY THE INVIGILATOR TO DO SO.

## QUESTION 1

“The defining feature of Pedagogical Content Knowledge (PCK) is its conceptualization as the result of a transformation of knowledge from other domains. (Wilson, Schulman & Richert, 1988)

- a. Provide conceptual descriptions and illustrative examples to define the specific knowledge represented by each of the five components of PCK identified by Grossman (1990) and Tanner (1988). (15marks)
- b. Using a model of PCK distinguish between the interaction of the major domains of knowledge in the development of PCK in a B. Sc. Chemistry teacher and a B.Ed. chemistry teacher. (6marks)
- c. Explain two implications of theory and research on PCK for teacher education.(4marks)

## QUESTION 2.

Meaningful Conceptual learning should be a central goal of science teaching (Roth, 1985).

- a. Define Meaningful Conceptual Understanding (MCU) from :
  - i. The Scientists view (3marks)
  - ii. The Teachers Perspective (3marks)
  - iii. Perspective of Schema Theory. (9marks)
- b. Using the knowledge gained from Posner et. al. (1982) model, analyze the procedure you will follow to remove or reduce the conflict between students’ misconceptions or prior knowledge that is in conflict with scientists’ conceptions. (10marks)

## QUESTION 3

Metacognition is a psychological construct and a dimension of thinking with several virtues. (Marzano et al, 1987).

- a. Identify three persistent problems associated with the definitions of the term “Metacognition” (3marks)
- b. Summarize the virtues of metacognition as identified by (Marzano et al, 1987).(10marks)
- c. Critically examine Paris & Winograd(1990)’s perspective on Metacognition (12marks)

## QUESTION 4

- a. Describe the special features that define the ~~Problem Based Learning~~ Problem Based Learning (PBL) model of instruction. (10marks)

- b. Show how you will plan and use PBL to teach a chosen topic in SGCSE chemistry curriculum. (15marks)

### QUESTION 5

- a. Distinguish between Traditional, Performance and Authentic assessments. (6mks)

- b. Critically examine the effect of:

- i. Grading
- ii. Testing and feedback
- iii. Standardized testing

on students' motivation and learning. (9marks)

- c. Discuss how you would apply the four principles proposed by Gronlund (2005) to design an assessment system in your chemistry class. (12marks)

**END OF EXAMINATION!!!**