MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016

THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE WITH INFORMATION TECHNOLOGY

MAIN CAMPUS

ECT 333: SPECIAL METHODS OF TEACHING CHEMISTRY

Date: 15th January, 2016 Time: 2.30 - 4.30 pm

INSTRUCTIONS:

- Answer question ONE and any other TWO questions.

QUESTION ONE: Compulsory (30marks)

a) Define the term science and explain the two basic views (characteristics) of science using reference from Chemistry education (6marks)

b) i) State any four general objectives of teaching chemistry as outlined in the current KCSE chemistry syllabus (4marks)

ii) Give any two reasons why the "curriculum" may hinder the achievement of these objectives (2marks)

c) Describe any two characteristics of each of the following three phrases of the chemistry lesson plan:

- Introduction (2marks)
- Lesson development (2marks)
- Conclusion (2marks)

d) Explain the difference between Diagnostic and Formative assessments in the teaching of chemistry (4marks)
Give a reason why assessment of learning should form part and parcel of the process of teaching chemistry (2marks)

e) Two of the ways of preparing for safety in the chemistry lab include:

- Risk assessment
- Rehearsing the planned experiment (6marks)

QUESTION TWO

a) Distinguish between Deductive reasoning and Inductive reasoning as sources of knowledge, giving one limitation of each (6marks)
Explain how both of these sources are incorporated in the scientific method (6marks)

b) Discuss any four benefits of using the process-based approach in chemistry teaching (8marks)

QUESTION THREE

a) Explain any four factors that would guide the chemistry teacher in the construction of a scheme of work (8marks)

b) Construct a suitable 2-week scheme of work to teach any topic of your choice in form one chemistry syllabus (12marks)

QUESTION FOUR

A chemistry teacher organized a practical lesson to prepare and investigate the properties of Chlorine gas in the laboratory

a) State any two specific objectives the teacher may have for this lesson (4marks)

b) Summarize the procedures that would be followed during the planning and execution phases of the lesson; include possible reagents and diagrams of apparatus used (12marks)

c) Discuss any two safety precautions that would be observed during the lesson (4marks)

QUESTION FIVE

Discuss the benefits and challenges of integrating the use of information technology (computers) in the teaching of chemistry in Kenyan secondary schools (20marks)