



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2015/2016**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF POSTGRADUATE DIPLOMA IN EDUCATION**

**(CITY CAMPUS-SCHOOL BASED)**

**ECT 526: SPECIAL METHODS OF TEACHING CHEMISTRY**

Date: 19<sup>th</sup> December, 2015

Time: 2.00 - 5.00 pm

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**INSTRUCTIONS:**

- Answer question ONE and any other TWO questions.

**QUESTION ONE: Compulsory (30marks)**

- a) i) Define the term "Chemistry". Give any two why chemistry as a subject is included in the secondary school curriculum (4marks)
- ii) Identify the variables in an experiment you would conduct to investigate a named factor affecting the rate of a chemical reaction (3marks)
- b) What are the main features of Francis Bacon's picture of science? Graphically illustrate your answer (6marks)
- c) Discuss any three factors that should guide you in preparing a secondary school form one chemistry scheme of work (6marks)
- d) i) What steps would you take to maintain an accident - free environment in a chemistry laboratory? (3marks)
- ii) How does school enrolment affect safety in the chemistry laboratory? (2marks)
- e) Use relevant examples from chemistry education to explain why:
- i. Assessment of learning should lay more emphasis on higher order (HO) rather than lower order (LO) cognitive skills (3marks)
- ii. It is important for the chemistry teacher to maintain students' progress records (3marks)

**QUESTION TWO**

- a) Give three reasons why lesson planning is considered fundamental for successful chemistry teaching (3marks)
- b) Construct a 40 minutes lesson plan to teach a unit from the topic: Acids, Bases and Indicators in a form one class (12marks)
- c) Explain how the term set induction may apply during the introduction and the conclusion phases of a lesson. (5marks)

### QUESTION THREE

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

- a) Summarize the procedures the teacher would follow during the planning and execution phases of the lesson. Include possible reagents and a sketch diagram of the apparatus used (12marks)
- b) State any two objectives the teacher would desire to achieve in this lesson (4marks)
- c) Justify the use of the demonstration strategy in this lesson (4marks)

### QUESTION FOUR

- a) Discuss the use of short answer (structured) type questions for assessing learning in chemistry, highlighting their characteristics, advantages and disadvantages (15marks)
- b) Comment on the view that examination in the Kenyan education system in its current form is a hindrance to effective teaching and learning of chemistry (5marks)

### QUESTION FIVE

Explain the importance of (a) literacy and (b) numeracy in the teaching and learning of chemistry. Illustrate your answer with relevant examples

(20marks)