



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

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

**(CITY CAMPUS-SCHOOL BASED)**

**ECT 527: SPECIAL METHODS OF TEACHING PHYSICS**

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Date: 17<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

- (a) State any **six** objectives of teaching Physics in secondary schools. (3 marks)
- (b) Describe the preparations that a teacher should undertake to implement group discussion method in a Physics lesson. (5 marks)
- (c) Outline the steps that a teacher may take to enhance the quality of demonstration of a Physics concept. (7 marks)
- (d) Briefly explain the relevance and limitations of inductive approach in the acquisition of scientific knowledge. (4 marks)
- (e) Give examples to illustrate the importance of Physics in the secondary education curriculum. (4 marks)
- (f) Explain four roles of assessment in Physics. (4 marks)
- (g) What would you do as a teacher to enhance the effectiveness of *lecture* as an instructional method in Physics? (3 marks)

### QUESTION TWO

- (a) Identify and explain five impediments to the teaching of Physics in secondary schools. (10 marks)
- (b) How would you as a teacher address the impediments in (a)? (10 marks)

### QUESTION THREE

- (a) Physics is considered as an important basis for technological development. Use suitable arguments to defend this view of Physics. (6 marks)
- (b) Show how the learning of Physics may promote:
- (i) Respect for other people's culture (2 marks)
  - (ii) Environmental consciousness (2 marks)

- (c) Explain the key issues that have motivated changes in Physics curriculum from independence to-date; and show how previous curriculum reviews have attempted to address them. (10 marks)

#### QUESTION FOUR

- (a) State and explain **three** issues to consider when preparing laboratory safety rules. (6 marks)
- (b) Identify **five** safety risks or main causes of accidents in a school physics laboratory. (5 marks)
- (c) Explain what you would do to enhance the safety of learners against the risks and accidents mentioned in (a). (5 marks)
- (d) Select any four Physics laboratory equipment or materials that require special care and handling and show how you would protect them from damage. (4 marks)

#### QUESTION FIVE

- (a) Formulate **three** instructional objectives in physics based on the sub-topic, *Transmission of Pressure in Liquids*. The objectives should target the levels of application, analysis and synthesis respectively. (3 marks)
- (b) Describe a suitable learning activity you would use to achieve these objectives [(in (a))] in a Form I class. (11 marks)
- (c) Construct **three** assessment items, one for each of the objectives stated in (a), and provide their sample answers. (6 marks)

