



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR THE
POST-GRADUATE DIPLOMA IN EDUCATION ARTS**

CITY CAMPUS – SCHOOL BASED

ECT 525: SPECIAL METHODS IN BIOLOGY

Date: 20th December, 2016

Time: 11.00 - 2.00 pm

INSTRUCTIONS:

- Answer question ONE and any other THREE questions



QUESTION ONE

- a. Describe the steps followed in a scientific method for testing a hypothesis
(5 marks)
- b. Highlight any Three characteristics of a theory and a hypothesis in science education
(6 marks)
- c. Differentiate between empiricism and rationalism as philosophies in science education
(4 marks)
- d. Describe any three negative and three positive contributions of Biology to a school community
(6 marks)
- e. Give any Four reasons to explain why the teaching of traditional Biology prevailed in Kenya for a long time before the advent of the 844 curriculum
(4 marks)
- f. Highlight any Five science process skills used in the teaching of secondary school Biology in Kenya today.
(5 marks)

QUESTION TWO

- a. Discuss the key elements of any two innovative science projects that were piloted in secondary schools in Kenya in a bid to improve on the Biology curriculum.
(8 marks)
- b. Explain why the projects failed and as a result were abandoned (2 marks)

QUESTION THREE

- a. Describe the Two main approaches used in the teaching of Biology in secondary schools in Kenya today.
(4 marks)
- b. Discuss any Two methods of teaching secondary school Biology in Kenya that can be categorized under each of these approaches
(6 marks)

QUESTION FOUR

- a. Describe any Three apparatus that every secondary school Biology laboratory should have for effective teaching of the subject.
(6 marks)
- b. Discuss any Four materials that can easily be improvised in a secondary school Biology laboratory by highlighting the alternative material that can be used.
(4 marks)

QUESTION FIVE

- a. Describe any Three major areas that must be planned for in a well-designed secondary school Biology laboratory (6 marks)
- b. Discuss Four major hazards that could be experienced in any of these parts of the laboratory (4 marks)

QUESTION SIX

- a. Describe any Five factors a secondary school Biology teacher should consider when preparing a Biology examination (5 marks)
- b. Discuss any Five challenges teachers of secondary school Biology face in Kenya today and suggest possible solutions to these challenges (5 marks)