



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2013/2014

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF MASTER OF EDUCATION IN PEDAGOGY
(MAIN CAMPUS)**

EPB 802: BIOLOGY CURRICULUM

Date: 10th April, 2014

Time: 9.00 – 12noon

INSTRUCTIONS:

- Answer ANY FOUR questions.



Q1.a) The term curriculum has been conceptualized in several ways. State any two such ways and show how each one relates to the school Biology curriculum.

b) Outline the procedures involved in the design and development of Biology curriculum in Kenya (15 marks)

Q2. Summarize the trends and innovations that have characterized the developments in the Biology curriculum in Kenyan Secondary Schools since the launch of the Russian spaceship, Sputnik, in 1957. (15 marks)

Q3. Defend the justification for allocating Biology a slot in the school curriculum. (15 marks)

Q4. Discuss the design of the current secondary school Biology syllabus in terms of the following concepts:

- Scope
- Sequence
- Balance

(15 marks)

Q5. According to Judith Bennett (2003) an effective assessment system should give careful consideration to:

- The aspects of the curriculum to be assessed
- The ways in which assessment should be carried out
- How the results will be interpreted
- The uses to be made of the results

Evaluate our assessment practices of secondary school Biology in Kenya in the light of any two of these principles.

(15 marks)

Q6. Identify any three emergent issues in the field of Biology education and carefully examine how each of these issues is impacting Biology curriculum development.

(15 marks)



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EPB 804: BIOLOGY INSTRUCTION

Date: 10th April, 2014

Time: 2.00 – 5.00pm

INSTRUCTIONS:

- Answer ANY FOUR questions.



1. a) Establish the relationship between the following, with reference to biology education

- Curriculum
- Instruction
- Teaching
- Learning

b) Give a summary of essential teaching skills that are likely to contribute to a successful biology classroom practice (15 marks)

2. One of the characteristics of children's ideas from the constructivist studies is that they are stable and resistant to change

Describe a teaching model that has been developed to help change the ideas (15 marks)

3. Critically discuss the relevance of Piaget's theory of cognitive development to the teaching and learning of Biology (15 marks)

4. The state of practical work in Science in most of our public secondary schools in Kenya does not enhance meaningful learning.

Comment on this view in the light of the following factors

- The prescribed goals of practical work
- The organization and conduct of practical work
- The challenges facing practical work (15 marks)

5. Describe the principal elements of the model of a scientific approach to solving problems in biology teaching. Specify the higher order thinking skills likely to be developed through this approach (15 marks)

6. Identify any three topics from the biology syllabus whose teaching would raise controversial issues bearing on ethics and values. Discuss how you would successfully navigate around these issues in teaching each of the topics (15 marks)



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EPB 806: MEDIA IN BIOLOGY EDUCATION

Date: 9th April, 2014

Time: 9.00 – 12noon

INSTRUCTIONS:

- Answer ANY THREE questions.



QUESTION ONE

- a). Elaborate on the need to use a variety of instructional media when teaching Biology in secondary school. (10 marks)
- b). With the help of an example, describe how you can use any five commonly used classroom instructional media in the teaching of Biology. (10 marks)

QUESTION TWO

- a). Discuss how a teacher can use a botanical garden in the teaching of Biology. (10 marks)
- b). What challenges are Kenyan secondary schools facing that may be a barrier to setting up school botanical gardens. (10 marks)

QUESTION THREE

Analyse and illustrate using specific examples, the steps Kenya as a nation has taken to prepare secondary school Biology teachers to be ready for ICT integration in the curriculum. (20 marks)

QUESTION FOUR

- a). Discuss the circumstances that may force a Biology teacher to use improvised apparatus instead of the real apparatus. (10 marks)
- b). Discuss the advantages and disadvantages of using simulation in the teaching of Biology. (10 marks)

QUESTION FIVE

- a). With the help of examples specific to secondary school Biology instruction, discuss factors to consider when selecting media for classroom use. (10 marks)
- b). Devise a list of rules you would use in a school Biology laboratory to ensure proper management and security. Justify the inclusion of each rule in your list. (10 Marks)