



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF EDUCATION

DEPARTMENT OF EARLY CHILDHOOD EDUCATION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF AGRICULTURAL, EDUCATIONAL AND EXTENSION

ECT 304: TEACHING METHODS-BIOLOGY

DATE: 15/4/2019

TIME: 2:00 – 4:00 PM

INSTRUCTIONS: Answer Question One and Any Other Two

1.
 - a) Explain **four ways in which** Biology is important for a student who will pursue a Medical career. (8 marks)
 - b) Given the pictures of *Tortoise, Earthworm, Housefly and Cockroach*, explain the steps you would use to demonstrate to learners how to use the *Dichotomous Key*. (10 marks)
 - c) Prepare an 80 minute Lesson Plan on the topic *Structure and function of the Human Heart*. (12 marks)
2.
 - a) Using a named topic, illustrate the difference between Experimental Biology and Mathematical Biology. (8 marks)
 - b) Discuss any *four values of Science* promoted through the teaching of Biology. (12 marks)
3. Choose a topic from the Biology Syllabus for Secondary Schools and describe how you would teach it using the **Field-trip Method** with emphasis on:
 - i) Prior preparations before the Field-trip. (5 marks)
 - ii) Resources you would require to facilitate learning. (5 marks)
 - iii) Orientation points and guidelines for learners' readiness. (5 marks)
 - iv) Follow-up activity to consolidate learning points. (5 marks)
4. *Explain and illustrate any four* reasons why Biology is classified as a Science. (20 marks)

5. Write a brief essay on **one** of the following topics: (20 marks)
- i) The stages of Experimentation in Biology.
 - ii) Class Demonstration as a method of teaching Biology.
 - iii) Practical Test on Mammalian Bones.
 - iv) Metacognitive tools in learning Biology.
 - v) Constructivist approach to the teaching of Biology.
 - vi) The use of ICT in teaching Biology.