



# MACHAKOS UNIVERSITY

University Examinations 2022/2023

SCHOOL OF EDUCATION

DEPARTMENT OF EARLY CHILDHOOD EDUCATION COMMUNICATION AND  
TECHNOLOGY

THIRD YEAR ..... EXAMINATION FOR  
BACHELOR OF EDUCATION (EARLY CHILDHOOD EDUCATION)  
ECT 304: TEACHING METHODS IN BIOLOGY

DATE:

TIME:

---

**INSTRUCTIONS: Answer Question One and Any Other Two**

1.
  - (a) Justify four ways in which the teaching of biology in secondary schools of Kenya leads to development of the students' attitude. (8 marks)
  - (b) Given some seeds and fruits, prepare a double biology practical lesson plan (80 minutes) showing the key parts and content of the plan. (12 marks)
  - (c) Using specimens of insects collected from the field explain the steps you would use to go about before and during the teaching of the concepts of classification by demonstration method. (10 marks)
2.
  - (a) Discuss the steps followed when using the problem-solving method of teaching in Biology. (10 marks)
  - (b) Explain critically how the following influence the choice of a teaching method: (10 marks)
    - i. Subject matter.
    - ii. Number of students in a class.
    - iii. Learning styles.
3. Explain how the three phases of the learning cycle could be applied in the teaching of Osmosis in plant tissues using distilled water and concentrated salt solution.

4. (a) Critically contrast the experimental and the mathematical components of Biology as a Science. (10 marks)
- (b) Why is it true that heuristic teaching approach can be useful in the modern teaching of Biology? (10 marks)
5. Table of specification is a very important task during the planning of a standardized Biology test. Explain the four main steps considered when preparing the table. (20 marks)