

MACHAKOS UNIVERSITY 2020 EXAMINATIONS

ECT304/704: TEACHING METHODS-BIOLOGY (SCHOOL-BASED)

Answer Question One (Compulsory) and any Two Others.

SECTION A: COMPULSORY.

- Q1. (a) Justify any four (4) reasons as to **how Biology** should prepare a Secondary School student for a career in the Medical Sciences. (8 marks).
- (b) Given **two substrates** containing; **REDUCING SUGARS, and PROTEINS**. Discuss a practical design you would use to test **five key** practical skills in a Biology lesson on **Food tests**. (10 marks).
- (c) Prepare an 80minute Lesson Plan for a practical on the topic '**reproduction in flowering plants**'. (12 marks).

SECTION B: ATTEMPT TWO QUESTIONS FROM THIS SECTION.

- Q2. Discuss how the **three** phases of a learning cycle can be applied to the teaching of **Dichotomous Key for Classification through a practical**. (20 marks).
- Q3. (a) Critically contrast the **experimental** and **mathematical** components of Biology as a Science. (10 marks).
- (b) Choose a topic from the Biology Syllabus for Secondary Schools and use it to **describe** how you would implement the **project method of teaching**. (10 marks).
- Q4. Discuss the five critical steps involved in the process of constructing a balanced test in Biology. (20 marks).
- Q5. Write a **ten-point critical essay** on **one** of the following topics: (20 marks).
- (i) Biology in Pandemic times.
 - (ii) Metacognitive teaching in Biology.
 - (iii) Process-skills approach to the teaching of Biology.
 - (iv) Biology and Entrepreneurial investment.