THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
DIPLOMA IN SECONDARY EDUCATION EXAMINATION

733/1 **BIOLOGY 1**

Time: 3 Hours **Year: 2020**

Instructions

1. This paper consists of sections A, B and C with a total of **sixteen (16)** questions.
2. Answer **all** the questions in section A and **two (2)** questions from each of the sections B and C.
3. Sections A carries **forty (40)** marks and sections B and C carry **thirty (30)** marks each.
4. All communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your Examination Number on every page of your answer booklet(s).

SECTION A (40 Marks)

Answer **all** questions in this section.

1. What four features categorize mosses and liverworts in the same group?

2. How does aerobic differ from anaerobic respiration? Give four points.

3. With examples, give four disadvantages of modern methods of birth control.

4. Distinguish between;
   (a) sex determination and sex linkage.
   (b) co – dominance and incomplete dominance.

5. Give four situations where safe precaution measures should be observed by both students and teachers during teaching and learning of biology.

6. How does teacher's guide assist the teaching and learning process? Give four points.

7. Classify enzymes into four groups according to the type of reaction they catalyze.

8. In what ways do air, water and land pollution a threat to aquatic life? Give four points.

9. Construct one multiple choice item on plant and animal cells and use it to describe the following concepts:
   (a) Stem
   (b) Destructor
   (c) Alternatives

10. Why is it emphasized to use participatory methods in teaching and learning biology?

SECTION B (30 Marks)

Answer **two (02)** questions from this section.

11. In what ways do seed bearing plants adapted to life on land? Give six points.

12. Evaluate the usefulness of protein in human body. Give six points.

13. You are required to teach Form Three students about the Krebs cycle. Use the following guiding questions to enable students understand the topic:

(a) State two raw materials for the Krebs cycle.

(b) Draw the cycle to show eight major steps involved in energy production.

(c) Name the steps in which reduced NAD are used to produce ATP.

(d) How many molecules of ATP will be produced in the absence of oxygen?

(SECTION C (30 Marks)

Answer **two (02)** questions from this section.

14. (a) What will happen if one teaches without a syllabus? Give six points.

(b) Analyse three strengths of using the centralized syllabus in teaching and learning of biology subject.

15. Creating learning environment that promotes cooperative learning is among the principles of teaching and learning biology. As a specialist teacher, why should this principle be adhered during teaching and learning process? Give six reasons.

16. (a) Explain the following terms as used in assessment:
(i) Standard deviation of scores
(ii) Test item analysis
(iii) Difficulty index of a test item
(iv) Discrimination index of a test item

(b) A Form One student scored 80% in a midterm Biology test. If the standard deviation was 4 and the average mark was 60%, calculate:
(i) Z - score.
(ii) T - score.