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

733/1

BIOLOGY 1

Time: 3 Hours

Friday, 09th May 2014 a.m.

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A, **two (2)** questions from section B and **two (2)** questions from section C.
3. Section A carries 30 marks, section B carries 30 marks and section C carries 40 marks.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (30 Marks)

Answer **all** questions in this section.

1. Describe briefly Zwitterions formation in amino acids.

2. State where the following processes occur in a living cell:
   (a) Glycolysis.
   (b) Kreb's cycle.
   (c) Oxidative Phosphorylation.

3. Differentiate between Ribonucleic acid (RNA) and Deoxyribonucleic acid (DNA).

4. Outline three factors that may lower body immunity.

5. Explain briefly how energy is lost in the ecosystem from one trophic level to another.

6. State how the members of the class osteichthyes differ from the members of the class chondrichthyes.

7. Describe briefly any three objectives of learning Biology Pedagogy for a student teacher.

8. Identify three importance of organizing laboratory apparatus and chemicals.

9. Why are Biology teachers urged to standardize test/examination scores.

10. Give three factors that may affect validity of a Biology test.

SECTION B (30 Marks)

Answer **two (2)** questions from this section.

11. With support of a diagram describe the main stages of glycolysis which lead to t release of energy from one molecule of glucose.

12. (a) Using cross diagrams predict the possible blood groups of children sired fro man of blood group **A** and a woman of blood group **AB**.
    (b) Using a punnet square, work out possible phenotypes of offspring, if a carri woman with X^HX^h married a haemophilic male.
    (c) Explain why;
        (i) There are no carrier males.
        (ii) Some of the females are healthy although they carry the defective gen

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13. (a) With examples categorize human diseases basing on their origin/nature.
(b) Suggest five preventive measures against HIV and AIDS.

14. With support of illustrations, analyze the factors affecting the rate of enzymatic reaction.

SECTION C (40 Marks)

Answer **two (2)** questions in this section.

15. (a) If you were to draw a Biological diagram on a manila sheet, what considerations could you take so as to make your diagram a good and effective teaching aid.
(b) Comment on the statement that "improvisation of biological teaching and learning resources is essential".
(c) Suppose you are planning for microteaching, what considerations would you put forward during preparation?

16. (a) Recommend two assessment tools in Biology other than tests and examinations and elaborate four advantages for each.
(b) Explain six importance of giving tests to students in teaching and learning Biology.

17. Ms Makini has covered the following sub-topics on "Gaseous exchange and respiration" to a Form Two class:
(i) The concept of gaseous exchange.
(ii) Gaseous exchange in animals.
(iii) Gaseous exchange in plants.
(iv) Aerobic respiration.

(a) Construct a Table of Specification based on all levels of cognitive domain. The total number of questions should be 20.
(b) Explain the procedures you have used to construct the Table of Specification in (a) above.

18. (a) With the aid of diagrams explain the following Biological terminologies;
(i) Longitudinal section.
(ii) Transverse section.

(b) Describe how you would guide your students to perform the following:
(i) Making dissection of a cockroach.
(ii) Preparation of a section of a fresh onion bulb for studying living onion cells.

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