

**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**

033/1

BIOLOGY 1
(For School Candidates Only)

TIME: 3 HOURS

Thursday, 07th November 2013 a.m.

INSTRUCTIONS

1. This paper consists of three sections A, B and C.
2. Answer **all** questions from sections A and B and **one (1)** question from section C.
3. Except for diagrams that must be drawn in pencil, all writing should be done using a blue or black pen.
4. Calculators and cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

SECTION A (20 MARKS)

1. For each of the items (i) – (x), choose the correct answer from among the given alternatives and write its letter beside the item number.

(i) Animals which are able to maintain fairly constant body temperature are described as

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|------------------|---------------|
| A poikilothermic | B hydrostatic |
| C sympathetic | D symbiotic |
| E homoiothermic | |

(ii) Night blindness in the human body is avoided by eating

- | | |
|------------|--------------------|
| A oranges | B carrot |
| C red meat | D green vegetables |
| E chicken | |

(iii) A blood vessel which conveys deoxygenated blood away from the heart is called

- | | |
|--------------------|------------------|
| A capillaries | B artery |
| C vein | D pulmonary vein |
| E pulmonary artery | |

(iv) The function of cones in the human eye is to

- | | |
|-------------------|-----------------|
| A sense light | B sense colour |
| C cover the eye | D reflect light |
| E protect the eye | |

(v) A term used to identify an individual animal having both male and female sex organs is

- | | |
|--------------|-----------------|
| A unisexual | B hermaphrodite |
| C asexual | D dioecious |
| E monoecious | |

(vi) Which of the following structures is a site of respiration?

- | | |
|-----------------|----------------|
| A Chloroplast | B Ribosome |
| C Nuclear | D Nucleic acid |
| E Mitochondrion | |

(vii) The structures found in bacteria are

- A plasmid, flagella and cilia
- B cytoplasm, cilia and pastids
- C cell wall, plasmid and flagella
- D cell membrane, flagella and hairs
- E plasmid, capsule and cilia

SECTION B (60 Marks)

Answer **all** questions in this section.

Each question carries **8 marks** except question three (3) and six (6) which carry **6 marks** each.

3. (a) What do you understand by the term “Botany”?
(b) Briefly explain five characteristic of living things.
4. (a) State the conditions necessary for seed germination and briefly describe how they facilitate germination.
(b) Differentiate epigeal germination from hypogeal germination.
5. (a) Define the term “irritability.”
(b) Describe the neuron pathway taken by reflex actions in human being.
6. (a) Give the meaning of osmosis and diffusion.
(b) Briefly explain how the following illustrates osmosis.
 - (i) Shrinking of a cell when immersed in a high concentrated solution.
 - (ii) Bursting of red blood cell when immersed in dilute solution.
7. (a) Name and explain any four theories of the origin of life.
(b) Outline two ideas of Darwin theory.
8. (a) What is the meaning of the terms:
 - (i) Digestion
 - (ii) Malnutrition
 - (iii) Balanced diet
 - (iv) Nutritional disorder
(b) Outline four types of nutritional deficiency disorders in human beings.
9. (a) Give the meaning of the following:
 - (i) Continuous and discontinuous variations.
 - (ii) Inherited and acquired variations.
(b) Briefly explain how mutation and nutritional factors cause variation among organisms.
10. (a) Explain two factors affecting gaseous exchange in animals.
(b) Why does a fish die when taken out of water to land while a frog survives in both water and on land?

SECTION C (20 Marks)

Answer **one (1)** question from this section.

11. Give four common accidents at home and school, for each case explain the causes and three prevention measures.
12. Explain four ways of transmission, symptoms and treatment of HIV/AIDS.
13. Describe four similarities and seven differences between insect and wind pollinated flowers.