

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

133/2

BIOLOGY 2
(For Both School and Private Candidates)

Time: 3 Hours

Tuesday, 10th May 2016 p.m.

Instructions

1. This paper consists of **eight (8)** questions in sections A, B, C and D.
2. Answer five questions by choosing at least **one (1)** question from each section.
3. Each question carries **twenty (20)** marks.
4. Except for diagrams that must be drawn in pencil, all writing should be in blue or black ink.
5. Cellular phones are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

SECTION A

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

1. (a) Give five reasons to justify the class to which cockroach belongs.
(b) Using examples, explain seven advantages of insects to human being.
2. Using diagrams and one example in each case, classify bacteria on the basis of their morphology.

SECTION B

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

3. (a) Explain four major roles of the kidney.
(b) Describe the structure of mammalian nephron.
4. Explain different ways used by endotherms to keep their body temperature constant.

SECTION C

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

5. (a) Explain the following types of growth; give one example in each case.
 - (i) Intermittent growth
 - (ii) Allometric growth
 - (iii) Isometric growth
 - (iv) Limited growth
 - (v) Unlimited growth.
(b) State the roles of the following factors in seed germination.
 - (i) Water
 - (ii) Air
 - (iii) Optimum temperature.
6. In guinea pig (*Cavia*), there are two alleles for hair colour, black and white, and two alleles for hair length, short and long. In a breeding experiment all F_1 phenotypes produced from a cross between pure-breeding short-black haired and pure-breeding, long white-haired parents had short black hair.
 - (a) Which alleles are dominant? Give reason for your answer.
 - (b) Use cross diagrams to show both F_1 and F_2 results.

SECTION D

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

7. Explain how different abiotic factors affect population distribution.
8. Describe types of communities (Biomes) and their global distribution.

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