

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

133/2

**BIOLOGY 2**  
(For Both School and Private Candidates)

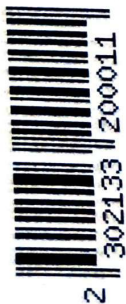
**Time: 3 Hours**

**Year: 2023**

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**Instructions**

1. This paper consists of **six (6)** questions.
2. Answer **five (5)** questions.
3. Each question carries **twenty (20)** marks.
4. All writing must be in **blue or black** ink **except** drawing which must be in pencil.
5. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).



1. Describe lytic and lysogenic life cycles of a bacteriophage (diagram **is not** required).
2. In five points, describe ways in which mammals are adapted to cold and hot environments.
3. With the help of diagrams, describe growth patterns of fish, human being and arthropods.
4. Using genetic crosses, describe the mode of inheritance of haemophilia and sickle celled anaemia.
5. (a) Explain six essential features of natural selection.  
(b) Describe how geographical, reproductive and genetic isolations bring about speciation.
6. (a) With the help of diagram, describe a typical marine food chain.  
(b) In six points, justify the fact that, food chains in the ecosystem are limited to a certain number of trophic levels.