

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION, MAY 1994

133/1

BIOLOGY PAPER 1
(For both School and Private Candidates)

TIME: $2\frac{1}{2}$ Hours

1. Answer FIVE (5) questions including at least ONE question from each of sections A, B, C and D.
2. Read each question carefully.
3. Write your centre and index number on every page of your answer book.
4. Except for diagrams, which must be drawn in pencil, all writing must be in blue or black ink/ball point pen.
5. Each question carries 20 marks.

This paper consists of 2 printed pages.

SECTION A

1. (a) What is meiosis?
(b) Outline the events occurring in the 1st meiotic prophase and 1st meiotic metaphase. Illustrate your account with diagrams based on two pairs of chromosomes only.
2. Discuss the locations and functions of
 - (a) meristematic tissue in the body of a flowering plant.
 - (b) (i) adipose tissue and (ii) smooth muscle in the body of a mammal.

SECTION B

3. In what ways are fungi important to man?
4. What are the distinguishing features of the different classes of arthropods?

SECTION C

5. With the aid of diagrams, explain the following defects of the human eye: myopia, hypermetropia and astigmatism. What corrective measures can be taken for each defect?
6. Give an account of hormones that influence growth and development in mammals.
7. Describe the cyclic and non-cyclic photophosphorylation pathways of the light reactions of photosynthesis. What are the products of these reactions?

SECTION D

8. Discuss the various types of evidence, from living organisms, which support the theory of evolution.
9. (a) In man, the ability to roll the tongue into almost a complete circle is determined by a dominant gene while its recessive allele fails to produce this ability. A man and his wife can both roll their tongues. They are surprised to find that their daughter cannot. Explain this by showing the genotypes of all three persons.
(b) Discuss the role of isolating mechanisms in the formation of new species.