



TANZANIA HEADS OF ISLAMIC SCHOOLS COUNCIL
FORM SIX INTER ISLAMIC MOCK EXAMINATION
BIOLOGY 2

(For Both School and Private Candidates)

133/2

TIME: 3 HOURS

Thursday, 6th March 2025 a.m.

Instructions

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

1. (a) One of the main evolutionary trends in plants is their gradual increasing independence from water. Assess the main problems associated with their transition from aquatic to a terrestrial environment. (Six (6) points).

(b) In four (4) points summarize adaptations of seed-bearing plants to its life on land.
2. (a) While teaching his students, Mr. Faraji said “excretion and osmoregulation are two important homeostatic processes occurring in living organism.” How would you support Mr. Faraji with seven points?

(b) The renal tubule consists of different parts each with specific adaptations. Justify the statement by referring to proximal convoluted tubule (3 points).
3. (a) Growth as a fundamental characteristic of all living organisms, it is often thought of simply as an increase in size but if you think carefully you will realize that this is not an adequate definition. Assess the statement basing on three phases of growth in multicellular organisms.

(b) (i) Citing examples, give an account on how mitosis is useful in all living organisms. Give five (5) points.
(ii) Describe the growth pattern of arthropods.
4. Two form six students, Sophia and Issa were eager to put into practice their genetic knowledge. They carried out the following crosses:

CROSS I

A pure breed plant for terminal purple flowers was crossed with a home plant for axial white flowers.

CROSS II

A plant with axial purple flowers of unknown percentage was crossed with one of the products of the first cross.

The cross produced the following results:

338	axial white flowers
109	terminal purple flowers
84	terminal white flowers
304	axial purple flowers

Due to their elementary knowledge in genetics, Sophia and Issa failed to interpret their results. Using your advanced biology knowledge, show how Issa and Sophia could:

- (i) Interpret their results
- (ii) Identify the genotypes and phenotypes of the plants produced in the first cross.

5. (a) Darwin's theory of organic evolution was modified after advancement of science and technology. As modern biologist what evidences you can use to support the theory. (3 points).
- (b) "Evidence of relevance of the theory of evolution is provided from many source." With examples, use the knowledge you have obtained from evolution and your own knowledge to justify the statement with seven (7) points.
6. (a) Besides its usefulness in establishing the energy flow between groups of organisms in different trophic levels, the pyramid of biomass is associated with some shortfalls. Give five points to justify the statement.
- (b) What factors trigger zonation of living organism? (Five (5) points)

Wabillah Janfiq