

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

033/1

**BIOLOGY 1**  
(For Both School and Private Candidates)

**Time: 3 Hours**

**Year: 2022**

**Instructions**

1. This paper consists of sections A, B and C with a total of **fifteen (15)** questions.
2. Answer **all** questions in sections A and B and **two (2)** questions from section C of which question number 13 is compulsory.
3. Section A carries **fifteen (15)** marks, section B **sixty (60)** marks and section C carries **twenty five (25)** marks.
4. All writing should be in **blue** or **black** pen, except for diagrams that must be drawn 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).



**SECTION A (15 Marks)**

Answer **all** questions in this section.

- 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 in the answer booklet provided.
- (i) Which component of the nervous system receives impulses from receptors?  
A Response                      B Effector                      C Relay  
D Motor                      E Coordinator
- (ii) Which of the following is the proper method for disposing plastic bottles?  
A Landfill                      B Incineration                      C Burying  
D Recycling                      E Pit latrine
- (iii) An individual who is riding a bicycle can waste a lot of water through sweating. Which of the following organs is responsible for the water loss?  
A Stomach                      B Kidney                      C Skin  
D Liver                      E Lungs
- (iv) In the cowshed, a red furred cow mates with a white furred bull. In  $F_1$  generation all cows were red furred. What does this suggest about fur colour in cow?  
A Incomplete dominance      B Co-dominance                      C Multiple allelism  
D Complete dominance      E Partial dominance
- (v) Which of the following parts allow water to enter into the seed before germination?  
A Testa                      B Plumule                      C Radicle  
D Cotyledon                      E Micropyle
- (vi) In natural selection, which types of characteristics are affected?  
A Inherited                      B Acquired                      C Survived  
D Dominant                      E Recessive
- (vii) Which process allows absorption of water and mineral salts from the soil in plants?  
A Diffusion                      B Osmosis                      C Irritability  
D Mass flow                      E Regulation
- (viii) Why spiders and scorpions are placed in the same class?  
A They have three pairs of legs                      B They have a pair of wings  
C They have a pair of chelicera                      D They have three body parts  
E They have two pairs of antennae
- (ix) Straightening and bending of the arm involve contraction of the biceps and triceps muscles. Which of the following alternatives describes the state of muscles when human arm is bent?  
A Biceps muscles contract while triceps relax  
B Triceps muscles contract while biceps relax  
C Both the biceps and triceps muscles relax  
D Biceps muscles relax while triceps contract  
E Both biceps and triceps muscles contract

- (x) Which features are found in both plant and animal cells?
- A Chloroplast, cell wall and cell membrane
  - B Cell membrane, nucleus and cytoplasm
  - C Vacuole, cell membrane and cell wall
  - D Cell wall, chloroplast and vacuole
  - E Chloroplast, nucleus and cell wall

2. Match the uses of apparatuses in **List A** with the corresponding apparatuses in **List B** by writing the letter of the correct response beside the item number in the answer booklet provided.

List A		List B	
(i)	An apparatus used for heating substance in the laboratory.	A	Bunsen burner
(ii)	An apparatus used for storing test tubes so that they do not roll or break.	B	Aquarium
(iii)	An apparatus used for measuring volume of liquids.	C	Measuring cylinder
(iv)	An apparatus used to magnify specimens.	D	Hand lens
(v)	An apparatus used for keeping live aquatic animals in the laboratory.	E	Spatula
		F	Test tube rack
		G	Filter funnel
		H	Test tube holder

### SECTION B (60 Marks)

Answer **all** questions in this section.

3. "Animals cannot survive without moving from one place to another." Justify this statement by giving three points with one example in each.
4. Mr. Shamba got a car accident and was badly injured. During the First Aid process Mr. Sai put on gloves, took a cotton wool and gave him painkillers. What was the use of;
- (a) gloves?
  - (b) cotton wool?
  - (c) pain killer?
5. How is the human urinary system adapted to perform its roles effectively? Give four points.
6. (a) Briefly explain the ways through which communicable diseases are transmitted from one person to another. Give three points.
- (b) Why is it healthy advised to boil drinking water? Give a reason.

7. Briefly explain the following terms and give one example for each.

- (a) Competition
  - (b) Mutualism
  - (c) Predation
8. (a) Differentiate the term hyperglycaemia from hypoglycaemia.  
(b) Give four symptoms of a person suffering from diabetes mellitus.
9. (a) Why is it impossible for a locust to die when its head is held under water?  
(b) Why do people breathe more when they run fast?
10. Briefly explain how the nervous system and the adrenal gland work together to bring about a response when a person is threatened by a lion.
11. Why is transpiration important to plants? Give three reasons.
12. A heterozygous normal skinned man married a heterozygous normal skinned woman. They gave birth to three normal skinned children and one albino child. The father complained that the albino child was not his. As a biologist use genetic cross to find out whether the albino child belongs to the father or not.

### SECTION C (25 Marks)

Answer **two (2)** questions from this section. Question number **13** is a compulsory.

13. Explain four family planning methods and indicate one disadvantage of each. **(15 marks)**
14. Why is it important for plants to carryout photosynthesis? Explain by giving four reasons. **(10 marks)**
15. Many people believe that insects are harmful to man hence they find poisonous chemicals to eradicate them. Giving examples, explain four ways in which insects are useful to man. **(10 marks)**