# 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: 2024**

## Instructions

1. This paper consists of sections A, B and C with a total of **eleven (11)** questions.
2. Answer **all** the questions in sections A and B, and **two (2)** questions from section C.
3. Section A carries **sixteen (16)** marks, section B **fifty four (54)** marks and section C carries **thirty (30)** marks.
4. All writing should be in **blue** or **black** pen, **except** for diagrams that must be drawn in pencil.
5. Communication devices and any unauthorized materials are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

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## SECTION A (16 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 part is the functional unit of the kidney?

A Pelvis B Nephron C Cortex
D Medulla E Ureter

(ii) Form Two students were required to measure 250 $cm^3$ of water when doing food test experiment. Which apparatus did they use?

A Beaker B Dropper C Petri dish
D Watch glass E Spatula

(iii) How can a patient diagnosed with kidney stones control the disorder?

A Eating very salty foods B Eating enough fibre food
C Taking food rich in sodium D Taking diet high in protein
E Drinking plenty of water

(iv) Form Three students took a thermometer and measured the temperature of the following organisms: frog, duck, rat, lizard, and rabbit under cold and later under hot environment. Which organisms would the temperature remain constant?

A Rabbit, Lizard and Rat B Frog, Rabbit and Duck
C Rabbit, Duck and Rat D Lizard, Rabbit and Duck
E Duck, Lizard and Frog

(v) What is the function of the nucleus in a cell?

A Controls all cell activities B Determines the cell permeability
C Produces energy for the cell D Excretes wastes from the cell
E Protects and support the cell

(vi) Which statements support the Darwin's theory of organic evolution?

(i) Living organisms produce more offspring than the environment can support.
(ii) An individual is able to develop structures to suit the need of the environment.
(iii) Organisms struggle for existence of the limited resources such as mates.
(iv) The fittest organisms survive while the less adapted organisms are eliminated.

(v) The more an individual used a part of its body the more developed that part became.

A (i), (ii) and (iii) B (i), (ii) and (iv)
C (i), (iii) and (iv) D (ii), (iv) and (v)
E (iii), (iv) and (v)

(vii) Form Three students were given a scalpel and hibiscus flower and they were required to dissect and display the female reproductive parts. Which parts were expected to be displayed?

A Ovary, Style and Stigma
B Filament, Anther and Ovary
C Petal, Ovary and Anther
D Ovary, Stigma and Filament
E Anther, Ovary and Stigma

(viii) Two people were cutting firewood in the forest then they saw a lion and suddenly climbed a tree to escape the lion. Which hormone prepared them for that action?

A Prolactin hormone
B Aldosterone hormone
C Adrenaline hormone
D Growth hormone
E Antidiuretic hormone

(ix) Which one of the following is the correct classification of paramecium?

A Kingdom Protoctista, Phylum Apicomplexa
B Kingdom Animalia, Phylum Rhizopoda
C Kingdom Protoctista, Phylum Zoomastigina
D Kingdom Protoctista, Phylum Ciliophora
E Kingdom Fungi, Phylum Ascomycota

(x) Which chemical composition is correct about DNA?

A Deoxyribose, Uracil, Guanine and Phosphate group
B Phosphate group, Deoxyribose, Thymine and Uracil
C Deoxyribose, Adenine, Ribose and Phosphate group
D Uracil, Phosphate group, Cytosine and Deoxyribose
E Phosphate group, Deoxyribose, Cytosine and Adenine

2. Match the uses of components of the First Aid kit in **List A** with their corresponding components 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) Covering wounds to protect them from dirt and germs. | A Soap |
| (ii) Cleaning and drying wounds. | B Liniment |
| (iii) Covering the hands to avoid infection of the wounds. | C Cotton wool |
| (iv) Treating burns and scalds. | D Sterile gauze |
| (v) Securing bandages. | E Petroleum jelly |
| (vi) Reducing muscle pain. | F Razor blades |
| | G Sterile gloves |
| | H Safety pins |

## SECTION B (54 Marks)

Answer **all** questions in this section.

3. A woman visited a food seller and bought the following foods: eggs, Irish potatoes and sunflower seeds.
   (a) Identify the type of nutrient found in each of the food items listed.
   (b) Give four functions of the nutrient identified in the eggs.

4. Why are personal hygiene and good manner important in our daily life? Give six points.

5. When doing experiment, accidentally Bahati touched hot water with her finger and she immediately withdrew it.
   (a) Explain the process of impulse flow from touching the hot water to the moment she responded. Give five points.
   (b) Draw the sensory neurone that picked up the nerve impulses from the receptor when she touched the hot water and label any four parts.

6. (a) How does irresponsible sexual behaviour differ from responsible sexual behaviour?
   (b) Briefly explain four ways which can be used to eradicate irresponsible sexual behaviour.

7. (a) In three points, differentiate movement from locomotion.
   (b) Explain the importance of movement to the living organisms. Give two points.

8. When a red-flowered rose plant was crossed with a white flowered rose plant all members of the $F_1$ generation were pink. Using genetic diagrams illustrate the cross made.

## SECTION C (30 Marks)

Answer **two** (**2**) questions from this section.

9. The blood circulation is important for survival of human being. In six points, justify this statement.

10. Analyse five factors which affect the rate of respiration in living organisms.

11. You are invited by the ward leader in the nearby village to talk about cholera. Explain six preventive measures of the disease that you would address to the villagers.