PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
JOIN THE REVOLUTION PROGRAM
FORM FOUR PRE NATIONAL I EXAMINATION
BIOLOGY

033/3

TIME 3:00Hours **Year 2023**

INSTRUCTIONS

1. This paper consists of sections A, B and C with a total of **15** questions.

2. Answer all questions in sections A and B and two (2) questions from section C of which question **13** is **compulsory**.

3. Section A carries fifteen (16) marks, section B sixty (54) marks and section C carries twenty five (30) marks.

4. All writings should be in **blue** or **black** ink, except for diagrams that must be drawn 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)

SECTION A: (16 Marks)
Answer all questions in this section

1. For each of the following items (i) – (x), choose the most correct answer from among the given alternatives and write its letter beside the item number in the answer booklet(s) provided:

(i) When the first day of menstruation was 8th April on which date is a woman of 28 days cycle most likely to ovulate?
A. 26th March B. 22nd April C. 5th May
D. 16th April E. 21st April.

(ii) Its cell body is located within the central nervous system:
A. Sensory neurone B. Spiral neurone C. Motor neurone
D. Inter neurone E. Cranial neurone.

(iii) Tonoplast is the membrane found in:
A. Nucleus B. Chloroplast C. Mitochondrion
D. Vacuole E. Cell membrane.

(iv) Which of the following organism may have the same nutritional value with plants:
A. Amoeba B. Euglena C. Paramecium
D. Yeast E. Plasmodium.

(v) The plant which bears one of the reproductive structures only (Stamen/Pistil) is referred to as:
A. Complete flower B. Incomplete flower C. Monoecious
D. Dioecious E. Hibiscus.

(vi) A process of formation of chiasmata occur in:
A. Prophase I of meiosis I B. Prophase I of meiosis II C. Prophase
D. Metaphase I of meiosis I E. Metaphase of mitosis

(vii) The type of immunity that can prevent a young individual against measles is called:
A. Active artificial immunity B. Artificial passive immunity C. Active natural immunity
D. Natural passive immunity E. Natural immunity.

(viii) A concave notch of kidney where renal artery, renal vein, ureter, nerve lymphatic vessel converge is called:
A. Renal pelvis B. Hilum C. Hilium
D. Hillum E. Hillium.

(ix) Why was Lamarck's theory of "use and disuse" criticized?
A. People didn't like his ideas B. Phenotypically acquired characteristics are not inheritable
C. Went against many religious beliefs D. He was not the father of evolution
E. He was not real scientist.

(x) Which of the following sets include characteristic that is not for living things?

A. Feeding, irritability and growth
B. Reproduction, death and definite shape
C. Excretion, locomotion and feeding
D. Growth, movement and respiration
E. Movement and gaseous exchange.

ANSWERS

I	II	III	IV	V	VI	VII	VIII	IX	X

2. Match the following concepts in List A with their corresponding response 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) Fungi ii) Viruses iii) Sporadic iv) Protozoa v) Bacteria vi) Worms	A. Measles, chicken pox, Ebola, Rabies, Polio mumps, small pox influenza. B. Elephantiasis, ascariases, Teniasis Bilharzia C. Malaria, Amoebic dysentery, sleeping sickness D. Elephantiasis, sleeping sickness, Ebola E. Tetanus, plague leprosy tuberculosis, Typhoid F. Ebola, Rift valley fever G. Cholera, Polio, Bilharzia, Ebola, Leprosy H. Ring worm, Candidiasis Athletes foot

ANSWERS

I	II	III	IV	V	VI

SECTION B (54 MARKS)

Answer all questions in t his section

3. Collin accidentally fall in the class and was found that he was not breathing, the students helped him to recover from breathing.

(a) What is the name of the process done by students?
(b) What are the qualities of the students who gave the process? Give any two qualities.
(c) What were the reasons of giving the process above? Give any three reasons.

4. When form one students visited the biology laboratory, they found out different equipment which were not familiar to them. As a form three student explain to them the role of the following apparatus

i) Hand lens
ii) Mortar and pestle
iii) Specimen bottles

iv) Thermometer

b) it is emphasized that "every school should have a biology laboratory" provide two reasons to support the statement.

5. (a) (i)What is a cell?
(ii) Outline four similarities between animal cell and plant cell.
(b) (i) It is said that mammals have double circulation of the blood. As a biologist who has studied transport in mammals, what does this statement mean?
(ii) Mention two importance of transport of materials in living things
6. (a) With the aid of diagram describe the mechanism of human eye.
(b) How the following parts of the eye adapt ed their function?
i) Retina
ii) Iris
iii)Cornea
iv)Lens

7. a) Describe how temperature affects the rate of growth and development of plants.
b) What are the changes that occur in girls and boys during puberty? Two (02) points each
c)The Students of Mnazi mmoja Secondary School were conducting a debate with the motion state that "Mitosis and meiosis are differ". Propose the motion with 4 points

8. (a) Give the hormone responsible for each of the following biological processes.
(i) Development of male sexual characteristics.
(ii) Development of female sexual characteristics
(iii) Prepares the body for fight or flight response
(iv) Raised blood sugar level
(v) Initiate labour pain

(b) Nervous coordination differs from hormonal coordination. Explain in four (4) points

SECTION C (30 MARKS)

Answer **only (02)** two questions

9. Mallik and Rashid believed that, living things do not change with course of time. As a biologist, explain by using four evidences of organism evolution to convince them

10. Genetics is a branch of biology dealing with heredity and variations among organisms. How can this field of biology be applied to everyday life. Give five points

11. In our society, many people believe that it is only couples who are planning to get married should seek VCT services. Use your Biology knowledge to impart them with proper understanding on "who should seek VCT services". (5 points).

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