

**THE UNITED REPUBLIC OF TANZANIA
THE PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
SECONDARY SCHOOL**

FORM FOUR EXAMINATION

033 BIOLOGY

Time: 3 Hours

2024

Instructions

1. This paper consists of sections A, B and C with a total of fifteen (11) questions.
2. Answer **all** questions in sections A, B, and **two (2)** questions from section C.
4. All writing should be in blue ink, except for diagrams, which must be drawn in pencil.
5. Cellular phones and any unauthorized materials are **not** allowed in the examination room.
7. Write your **Examination Number** on every page of your answer sheets.

SECTION A (16 Marks)

Answer all questions in this section

1. Choose the most correct answer among the given alternatives and write down the answer in the space given.
 - (i) Which of the following division of plants is the gametophyte generation dominant?

A. Coniferophyte	B. Bryophytes	C. Pteridophytes
D. Angiospermophyte	E. Filicinophyta	
 - (ii) During exhalation the diaphragm muscles
 - A. Contract and the diaphragm remains where it is
 - B. Contract and the diaphragm moves downward
 - C. Contract and the diaphragm moves back upward
 - D. Relax and the diaphragm moves downward
 - E. Relax and the diaphragm moves back upward
 - (iii) When you bend your elbow, which is correct about your muscles?
 - A. The biceps contract while the triceps relax
 - B. The triceps contract while the biceps relax
 - C. Both the biceps and triceps relax
 - D. Both the biceps and triceps contract
 - E. The ulna relax while the tibia contract

- (iv) The Seypalm village health center admitted several children patients who were suffering from schistosomiasis. What can be done to prevent the spreading of the disease?
- A. Abstaining from sex
 - B. Wearing masks that cover the mouth and nose
 - C. Killing pond-water snail
 - D. Eating warm foods
 - E. Washing hands after using toilets
- (v) On 6th April 2024, a couple came to see you for an advice on family planning; they are trying to avoid pregnancy by using the calendar method. The wife's cycle has an average of 28 days cycle, if she started seeing her period on 4th April 2024, which days among the following she will be more likely to conceive if she met her husband?
- A. 10th April 2024
 - B. 18th April 2024
 - C. 6th April 2024
 - D. 2nd may 2024
 - E. 5th May 2024
- (vi) Genetic disorder caused by presence of an extra chromosome number 21, resulting into individuals having a total of 47 chromosomes.
- A. Turner's syndrome
 - B. Polyploidy
 - C. Sickle cell anaemia
 - D. Down's syndrome
 - E. Klinefeleter syndrome
- (vii) Which of the following would occur after staying without eating at all for about twelve hours, such as when fasting?
- A. Insulin is released in the bloodstream
 - B. Glucagon is released in the bloodstream
 - C. Adrenaline is released in the bloodstream
 - D. Thyroxin is released in the bloodstream
 - E. Testosterone is released in the bloodstream
- (viii) The main difference between plants and animals is based on ...
- A. Movement
 - B. Reproduction
 - C. Nutrition
 - D. Excretion
 - E. Death
- (ix) What does the relationship between spiders and plans where spiders building their webs on plants represent?
- A. Parasitism
 - B. Mutualism

- C. Interspecific competition
- D. Commensalism
- E. Intraspecific competition

- (x) Which of the following will not pass through the renal capillary membrane and Bowman's capsule's membrane to enter the nephron of a healthy kidney?
- A. Proteins and blood cells
 - B. Mineral and water
 - C. Amino acid and urea
 - D. Glucose and minerals
 - E. Plasma and water

2. Match items in list A with the correct phrase in list B.

LIST A	LIST B
(i) A disorder that results from self-edification or fear. The person imagines that there are unknown people who want to kill him or her. (ii) It is due to scar or damage of brain. It leads to periodical loss of consciousness accompanied by fits or convulsions. (iii) Is a viral disease, the patient becomes paralyzed in the affected region. (iv) Is a sudden serious illness in the brain that can cause loss of the power to move or to speak clearly. This may be due to damage or blockage or bursting of the brain artery. (v) Is a mental illness in which person is unable to link his or her thoughts to the real life. One suffers from delusion and life or imagination. (vi) Is a protozoan disease caused by various types of plasmodium; when these parasites reach central nervous system will cause severe inflammation of meninges covering the brain.	A. Stroke B. Haemophilia C. Psychosis D. Epilepsy E. Heartburn F. Schizophrenia G. Cerebral malaria. H. Poliomyelitis I. Indigestion J. Covid 19 K. Appendicitis

SECTION B (54 Marks)

Answer all questions in this section.

3. (a) Parents brought two children to a health centre, one was diagnosed with marasmus and the other was diagnosed with kwashiorkor. State the cause of each of the disorders as distinct from each other and give three symptoms of kwashiorkor that distinguishes it from marasmus.
- (b) The child with kwashiorkor was also bowlegged; the doctor said it was also due to malnutrition. State three nutrients that must be missing in the child's diet and give the function of each.

4. Human activities such as extraction of raw materials and the production and consumption of goods and services always produce waste. Therefore, production of waste is unavoidable. Furthermore, in order for the produced waste to be well managed and disposed of, the basic principles of waste management must be used. Explain the principles.
5. (a) Give three differences between response you exhibited when you removed your fingers from fire you accidentally touched, and the response you exhibited by salivating after your friend graphically described your favourite delicious dish.
(b) While walking barefooted in grass, your friend realized the ground was full of painful thorns to the extent he had to stop and asked you to throw him your shoes so that he can put them on before moving any farther. All of a sudden, a leopard appears and in a few seconds, you and your friend find yourselves in a sheltered hut with your friend having forgotten all about the painful thorns. Briefly explain your friend's response to the situation in terms of the nervous system and glands.
6. (a) Distinguish between translocation and transpiration.
(b) The Mammalian heart is enclosed by a double layer of membrane called pericardium. Explain the following:-
(i) What makes this membrane prevent the heart from over-expanding when it is beating very fast?
(ii) Why the inner part of the heart is lined with blood vessels? Explain by giving three points.
7. (a) Draw a labelled diagram of a typical flower, similar to one of the hibiscus plant.
(b). Distinguish between:
(i) Monoecious plant and dioecious plant
(ii) Unisexual flower and bisexual flower
8. (a) Briefly explain how growth is brought about.
(b) Why is growth and development important? Give four reasons.

SECTION C (30 Marks)

Answer two questions from this section

9. Drug abuse is one of the biggest social problems in the society. Assuming you are a social welfare staff, address the public about this social problem under the following guidelines:
- Meaning of drug abuse and addiction
 - Reasons for doing drugs
 - Effects of drug abuse
 - Control measures of drug abuse.
10. Mutations come in two main types known as chromosomal mutation and gene mutation. Write a scholarly article to educate the public about gene mutation.

11. HIV/AIDS is still one of the scariest diseases in Tanzania. Write a scholarly article about the disease to educate the public on the nature of the disease, the cause of the disease, the way the disease is transmitted, the symptoms and effects of the disease, and the preventive measures and control of the disease.