

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



TABORA REGION  
FORM FOUR MOCK EXAMINATION

033/1

BIOLOGY 1

(For Both School and Private Candidates)

Time: 3 Hours

July 2024

INSTRUCTIONS:

1. This paper consists of **eleven (11)** questions in sections A, B and C.
2. Answer **all** questions in sections A and B and **any two (02)** questions from sections C.
3. In section A carries sixteen (**16 marks**), section B fifty-four (**54 marks**) and in section C carries thirty (**30 marks**).
4. Communication devices and any other unauthorized material are **not allowed** in the examination room.
5. Write your Examination Number on every page of your answer sheet(s) provided.

SECTION A:

Answer all questions from this section

1. For each of the following items (i) – (x), choose the correct answer from among the given alternatives and write its letter beside the item number in the answer booklets.
  - (i) What is the product of anaerobic respiration in plants?

|                 |                |          |
|-----------------|----------------|----------|
| A. Uric acid    | B. Lactic acid | (      ) |
| C. Water        | D. Alcohol     |          |
| E. Pyruvic acid |                |          |
  - (ii) Which nutritional disorder may result when a person takes large quantities of carbohydrates than the body requirements?

|                |             |          |
|----------------|-------------|----------|
| A. Obesity     | B. Rickets  | (      ) |
| C. Beriberi    | D. Marasmus |          |
| E. Kwashiorkor |             |          |

- (iii) Which among the following is the function of mitochondrion?
- A. Generate energy within the cells
  - B. Controls cytokinesis
  - C. Initiate sequence for protein synthesis ( )
  - D. It controls cells reproduction
  - E. It helps manufacture of starch
- (iv) John was bitten by bee. Which of the following should not be done?
- A. Wash the area with soap and water
  - B. Apply baking soda to the area
  - C. Carefully remove sting with your finger or sharp objects ( )
  - D. Carefully remove sting with a blunt object
  - E. Apply cold compress to remove pain
- (v) Which of the following is not a sign of gonorrhea?
- A. Swollen lymph nodes
  - B. Yellow fluid discharge from vagina/penis
  - C. Irregular menstruation cycle
  - D. Itching in private parts ( )
  - E. Pains during urination
- (vi) ..... is NOT the characteristics of red blood cell
- A. It is biconcave in shape
  - B. It lack nucleus ( )
  - C. It is involve in blood clotting
  - D. It transport oxygen and carbon dioxide
  - E. It is form in bone marrow
- (vii) An example of unicellular fungus is .....
- A. Mould
  - B. Mushroom ( )
  - C. Yeast
  - D. Smut fungi
  - E. Mucor
- (viii) ..... is an organ responsible for detoxification in the body
- A. Kidney
  - B. Liver ( )
  - C. Skin
  - D. Lung
  - E. Heart
- (ix) Which theory suggests that "The life of an organism arose from non-living matter".
- A. Spontaneous generation
  - B. Steady state theory ( )
  - C. Charles Darwin's theory
  - D. Special creation theory
  - E. Lamarck's theory
- (x) ..... have got a leaf like structure
- A. Fasciola hepatica
  - B. Taenia solium ( )
  - C. Ascaris lumbricoides
  - D. Schistosoma haematobium
  - E. Planaria Spp.

2. Match the functions of the parts of alimentary canal in list A, with the corresponding parts in list B, by writing the letter of correct response beside the item number in the answer booklets provided.

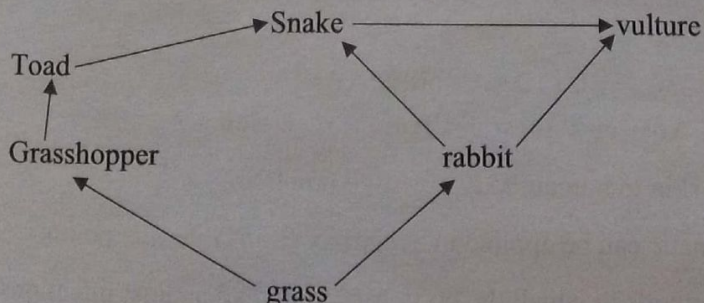
| LIST A                                                                                       | LIST B               |
|----------------------------------------------------------------------------------------------|----------------------|
| (i) Wave like muscular contractions that push food along the esophagus                       | A. Pyloric sphincter |
| (ii) Absorb water from undigested and indigested food material.                              | B. Cardiac sphincter |
| (iii) Wastes are stored here, ready to leave the body.                                       | C. Peristalsis       |
| (iv) Contain an acidic medium for digestion.                                                 | D. Oesophagus        |
| (v) A muscular ring that regulate the passage of food from stomach into the small intestine. | E. Stomach           |
| (vi) It receives penetrates juices secreted from pancreas.                                   | F. Duodenum          |
|                                                                                              | G. Ileum             |
|                                                                                              | H. Colon             |
|                                                                                              | I. Rectum            |

### SECTION B: (54 MARKS)

Answer all questions in this section

3. Students of Tabora, took blood sample from finger tip and examined it under light microscope.
- What are the solid components of blood observed?
  - Which was the most abundant cell type mentioned in (a) above? State any two functions of the cell.
  - One of the cell mentioned in (a) above had large nuclei and look like that of amoeba. What is the name of the cell? State any two functions of that cell.
4. (a) Explain the function of the following parts of the microscope.
- Stage
  - Body tube
  - Revolving nosepiece
  - Base
- (b) Monica was observing a leaf cells under light microscope on which she used an objective lens of 10x power and the total magnification was 50. Calculate the eyepiece lens that was used during observation.

5. Study the following food web and then answer the questions that follow:-



- (a) What would happen if:
    - (i) All the grass wither and die?
    - (ii) All snakes are killed.
    - (iii) The rabbits are double in number
    - (iv) The number of toads multiplies
  - (b) Construct three food chains from the above food web
  - (c) From the food web above identify the organism that are
    - (i) Producer
    - (ii) Primary consumers
    - (iii) Decomposers.
6. (a) (i) State the type of reflex actions based on the salivation and eye blinking  
 (ii) What are the three differences between the types of the reflex action stated in (a) (i) above?
- (b) Draw well labelled diagram of the nerve cell that carries impulses toward the coordinator.
7. (a) Make two differences between artificial and natural types of vegetative propagation.
- (b) State the type of vegetative reproduction that occurs in the following plants
- (i) Onion
  - (ii) Banana
  - (iii) Sweet potato
  - (iv) Sugar cane
- (c) State any three significances of meiosis.
8. (a) Name a mitotic stage observed in the following activities.
- (i) Development of spindle fibres from the centrioles.
  - (ii) Reformation of nuclear membrane around set of chromosomes.
  - (iii) Contract of spindle fibres that pulls chromatid to the opposite poles of the cells.
  - (iv) Living of chromosomes at equator of the spindle fibres.
- (b) Explain three significances of mitosis in eukaryotes.

### SECTION C: (30 MARKS)

**Answer 2 questions from this section.**

- 9. Explain the roles of skin to human body give five points.
- 10. How the field of genetic can be applied in every day life. Give five points.
- 11. Explain the ways/methods in which the body tries to defend against infections.