

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



FORM FOUR MOCK EXAMINATION FOR LAKE ZONE REGIONS
(GEITA, KAGERA, MARA, MWANZA AND SIMIYU)

033/1

BIOLOGY 1

(For both School and Private Candidates)

Time: 3 Hours

July 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 the Section 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. Cellular phone and any unauthorized material are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer sheet.

DYAMPAYE.CO.TZ

This paper consists of 4 printed pages

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) The growth of human being starts before and after birth by following a systematic growth pattern which is

- A. Localized growth
- B. Isometric growth
- C. Allometric growth
- D. Diffuse growth
- E. Intermittent growth

(ii) As a First aider which of the following you can advise the patron and matron not to do to a person who is bitten by a snake during giving first aid;

- A. Tying with a soft cotton cloth a victim part at the upper
- B. Laying a victim at a comfortable area
- C. To take a victim from a dangerous area
- D. Giving an alcohol to a victim
- E. Giving a hopeful words a victim

(iii) All substances carried by the blood toward the kidney are filtrated during urine formation but the following food substance is not one of the glomerulus filtrate

- A. Glucose
- B. Protein
- C. Water
- D. Amino acids
- E. Mineral salts

(iv) Veins are blood vessels that blood circulation is done through it. As a Biologist what feature among the following you have to use to identify veins

- A. Presence of valve
- B. Presence of blood with high pressure
- C. Absence of valves
- D. Large muscular wall
- E. Narrow smooth lumens

(v) If an albino man marries a heterozygous normal skinned woman, the chance of getting an albino child is

- A. 50%
- B. 100%
- C. 25%
- D. 75%
- E. 0%

(vi) Farmers in several villages in Simiyu region visited the regional referral hospital with the same complain of vomiting, diarrhoea look like rice water and wrinkied skin. Which disease is likely affecting them?

- A. Gonorrhoea
- B. Cholera
- C. Malaria
- D. Bilharzia
- E. Tuberculosis

(vii) Which of the following types of protein filaments made up musceles?

- A. Adenine and Guanine
- B. Ligaments and tendons
- C. Adenine and Thymine
- D. Actin and Myosin
- E. Myosin and Adenine

(viii) Chicken and dogs have ability to maintain constant body temperature. They are therefore described as;

- A. Homeotherms
- B. Poikilotherms
- C. Ectotherms
- D. Regulation
- E. Cold blooded organisms

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- (ix) What is the correct diagram for the neurotic pathway when a person touches a hot object?
- Pain receptor → Motor neurone → Spinal cord → Sensory neurone → Biceps muscles
 - Pain receptor → Relay neurone → Spinal cord → Sensory neurone → Biceps muscle
 - Pain receptor → Sensory neurone → Spinal cord → Motor neurone → Biceps muscle
 - Pain receptor → Relay neurone → Spinal cord → Brain → Biceps muscle
 - Pain receptor → Brain → Spinal cord → Sensory neurone → Biceps muscle

(x) Which of the following theories suggests that life arose from non-living matter?

- Spontaneous generation theory
- Cosmozoan theory
- Steady state theory
- Special creation theory
- Biogenesis theory

2. Match the items in List A corresponding to List B by writing the letter which is corresponding to the item.

LIST A	LIST B
(i) Rods	A. Regulate amount of light entering the eye
(ii) Cones	B. Maintain ball shape of the eye
(iii) Lens	C. Sensitive to dim light
(iv) Optic nerves	D. Point made up of non-living matter
(v) Iris	E. Regulate the size of lens
(vi) Vitreous humour	F. Group of cells that are sensitive to bright light
	G. A transparent disc that allows light to pass through
	H. Connect eye to the brain
	I. Do not form image

SECTION B: (54 MARKS)

Answer all questions in this section.

- Two equal strips "P" and "S" were cut from a raw potato strips when cell sap was 28.5% sugar. The strips were placed in sugar solution of different concentration as follows; P=10% and S=35%
 - What changes would you expect in strips P and S?
 - Name and define the scientific process take place in strip P and S.
 - Account for the changes occur in 3(i) above
 - Give any two ways how process mention in 3(ii) occurs in our daily life.
- Give four reasons as to why a plant leaf is said to be suitable for photosynthesis
 - How the process of photosynthesis is important in our daily life? (Give three points)
 - Write a well-balanced equation for photosynthesis including conditions necessary.
- Among the characteristics of living things is growth. In order an organism to grow well, there must be a particular cell division.
 - Identify and give the meaning of the kind of cell division responsible for growth.

growth in plants is the movement of plant to another.

(ii) What will be the effects in living organisms if the process mentioned in 5 (a) (i) above will not occur? (Four points)

(b) State three role of water during seed germination

6. (a) Earthworm are said to be farmer's friend. Justify this statement with three reasons.
(b) Why earthworms are said to be Hermaphrodite?
(c) What features make Arthropods most successful organisms on earth's surface? (Give four points)
7. (a) If a pancreas as an endocrine gland was by mistake removed during surgery from a patient describe three problems which the patient would get.
(b) Most women now days they don't breastfeed their babies. As a form four student educate them on important of breast feeding rather than bottle feeding.
8. (a) Human body made up of more than 639 muscles, outline three adaptation of muscles to its functions
(b) State three types of movable joints and identify their place of location

SECTION C: (30 MARKS)

Answer two questions from this section.

9. Mr. Geiyatu a famous farmer in Maua village is facing a problem associated with having no skills on balanced diet to the extent that his family is suffering a lot due to that. As a biologist, help Mr. Geiyatu to understand that the suffering of his family will end only if he decides to allow the knowledge of balanced diet into his family by explaining to him the meaning of balanced diet, four components of balanced diet and the sources, three importance of balanced diet and three factors that may lead someone not to have a balanced diet
10. A pure line pea plant which produces axial flowers was crossed with a pure line plant which produce terminal flowers. All the F1 plants produced had axial flowers. When the axial flowers were selfed they gave out 312 plants with axial flowers and 104 plants with terminal flowers.
- (i) Which character was dominant (give reasons)
(ii) Show how the axial flowers were obtained in the first cross
(iii) Show how the two phenotype of plants were obtained in the second cross
(iv) In F2 how many were homozygous axial flowered?
11. Between the month of June and October most plants start to undergo wilting, this is due to light intensity from the sun causing plants leaves to loose water in the atmosphere
- (i) Name the process in which a plant leaves lose water in the atmosphere during the day.
(ii) Outline and explain three environmental factors that affect the rate of the process mentioned in (i) above.
(iii) Explain three advantages and two disadvantages of the above named process in 11(i).

In order for plant to grow must have moderate when it be low or high