NPRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

CHALINZE DISTRICT EXAMINATION SYNDICATE
FORM FOUR EBPRE-MOCK EXAMINATION - 2024
BIOLOGY

TIME: 3:00 3:00 **HOURS** **APRIL, 2024**

Instructions

1. This paper consists of section **A, B** and **C** with a total number of eleven **(11)** questions

2. Answer all questions in sections **A** and **B** and **TWO** questions from section **C** in which question **9** is compulsory.

3. **Except** for diagrams that must drawn in pencils all writings should be in blue ink.

4. Calculator and cellular phones and any other unauthorized materials **are not allowed** in the examination room.

5. Write your examination **number on every page** of your answer sheet.

FOR EXAMINER'S USE ONLY		
QUESTION NO.	**SCORE**	**MARKER'S INITIAL**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

TOTAL		

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 number in the answer sheet provided.

(i) Form one students at Bwanga secondary school collected houseflies, grasshoppers, butterflies and bees so that they can study them. Which branch of biology is concerned with their activity?

A. Cytology B. Anatomy C. Mycology D. Entomology E. Parasitology

(ii) Amina had no gloves when she was giving first Aid to Clare after getting injury during class competition last Friday. What choice Amina had to use to protect her hands among the following?

A. A piece of cloth B. Plastic bag C. Plaster D. Socks E. Neck tie

(iii) Usually forest fire occurring to conifers grows bigger and spread quickly because;

A. Conifers are usually tall and shade the ground by their leaves

B. Conifers have simple xylem and phloem hence they are very soft and lighter

C. Conifers contains resins that serve the oxidizing function

D. Conifers have naked seeds clustered into cones that catch fire easily

E. Conifers are evergreen with small needle like leaves that supports combustion

(iv) When a finger is accidentally prickled by a needle, the hand is spontaneously drawn away from it, which response is represented by this action?

A. Motor Response D. Reflex Action

B. Reflex Adjustment E. Reflex Response

C. Reflex Arc

(v) The organisms that reproduce sexually show variations among members of the same species through which of the following process?

A. Plasmolysis B. Meiosis C. Mitosis

D. Hydrolysis E. Copulation

(vi) When observing a specimen under microscope always;

A. Cover one eye D. Remove the cover slip

B. Keep both eyes open E. Remove the eye piece

C. Touch the surface of the mirror

(vii) Msaki discovered a street guy who could not speak properly due to excessive use of drugs that slow down the brain and makes a person feel like sleepy. What type of drugs a street guy over used among?

A. Stimulant B. Sedatives C. Hallucinogen

D. Depressant E. Penicillin

(viii) During biology session, the teacher explained to students about the theory of origin of life that states "the universe has always existed and has no origin, that is, it did not have a moment of creation, this life has no origin". Which of the following is the correct name of the theory?

A. The steady state theory B. Special creation theory C. Organic evolution theory

D. Cosmozoan theory E. Spontaneous generation theory

(ix) Maize plant at Miringi Primary School farm has yellow leaves that fall down without withering. What mineral element should be added in the school farm soil to improve qualities and yield of maize?

A. Magnesium
B. Copper
C. Zinc
D. Iron
E. Calcium

(x) People living with HIV/AIDs (PLWHA) get deep sadness especially when are stigmatized. What is an appropriate life skill for handling this problem?

A. Critical thinking
B. Decision Making
C. Empathy
D. Problem Solving
E. Self awareness

2. Match the items in **LIST A** with the responses in **LIST B** by writing the letter of the correct responses in the LIST B besides the item number in the answer booklet provided.

LIST A	**LIST B**
(i) Sex Selection (ii) Sex Preference (iii) Sex linked Characters (iv) Sex limited Characters (v) Sex Influenced Characters (vi) Sex Determination	A. Are Characters that cannot express over many generations B. Are Characters more noticeable in one sex and almost lost in the other. C. Blending genetic materials to a particular offspring sex of one's favor D. Succeeded through genes located in the sex chromosomes. E. Are observable characters controlled by genes located on the sex chromosomes. F. Gene from both parents contribute to the trait, however they are expressed in one sex. G. Genetically controlled characters that appear to be expressed at the same degree in each sex. H. Favoring a particular sex compared to the other. I. Use of various means to achieve the desired sex of offspring.

SECTION B (54 MARKS)

Answer **all** questions from this section.

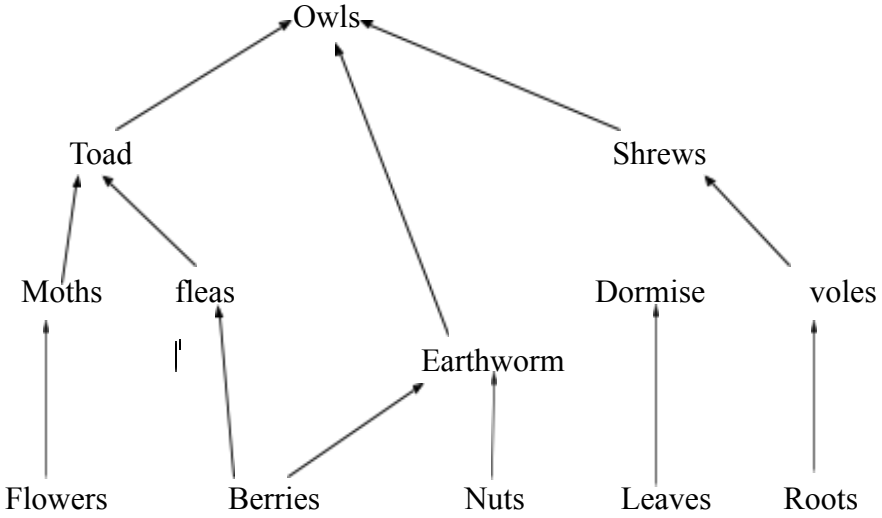
3. (a) A laboratory is a a room or building specifically designed for carrying out scientific investigation, but it have some qualities that make it suitable for its purpose. Mention five (05) qualities of a good laboratory and state one importance of each quality you have mentioned.

   b) What distinguishes the biology laboratory from other school facilities such as library, classrooms, physics and chemistry laboratory too?

4. (a) Explain the meaning of the following Ecological terms
   i. Predation
   ii. Competition

iii. Parasitism

b) Study the diagram below then answer question that follows



i. From the food web above name two primary consumers and two secondary consumers.
ii. Construct two food chains with four links from food web above.
iii. Explain why every food chain must begin with green plants?
iv. If all owls were killed, what would happen to a size of the population of an coearthworm and Berries?

5. Table1, shows the concentration of various substances in Plasma, Bowman's capsules filtrate, and Urine.

Substances	**Concentration (%)**		
	Blood plasma	Bowman's capsules filtrate	Urine
Urea	0.04	0.04	2.0
Glucose	0.1	0.1	0.0
Salt	0.46	0.46	0.7
Protein	8.0	0.0	0.0
Red blood cell	10.0	0.0	0.0

a) i). Name and explain the process responsible for the formation of filtrate at Bowman's capsule

ii) Which substances does not pass through the Bowman's capsule through the process you have named in a(i) above and explain why?

iii). Explain why the concentration of urea in the Bowman's capsule filtrate is much less than it's concentration in urine?

b) Distinguish between a goat from grasshopper based on skeleton aspect under the following guidelines.
(i) Position to the body of an organism
(ii) Composition of the skeleton
(iii) Other examples of organisms the skeleton can be found

6. A school garden has two kind of flowers classified as group A and B. Group A flowers attract insects so much than B, the two kind undergo different types of pollination.
   a) (i) Identify the types of pollination favorable for group A and B flowers
      (ii). Differentiate the flowers in group A form those in group B
   b) What are the four (04) typical floral parts of the plant?
   c) Classify flowers based on composition and structure.

7. a) Distinguish the following biological aspects
      (i) Ferns from Bryophytes
      (ii) Male cone from female cone
      (iii)Spider from beetle
   b) Give reasons why arthropods are considered to be the most successful animals on earth?

8. (a) With a well labeled diagram, describe the pattern of growth in human being

   (b) For a seed to germinate, it requires certain conditions that make it suitable to germinate and later grow to a bigger tree like baobab. As a form four student;

   (i) Identify the necessary conditions for a seed to germinate
   (ii) Name and explain the the parts of a seed.

SECTION C (30 MARKS)

Answer any **two (02)** questions from this section. Questions number **nine (09)** is **compulsory**.

9. Origin of life is the most controversial agenda with several theories that explain the possible mechanism by which life originated. As a biologist highlight the main ideas from each of the following theories and state one strength and one weakness of each of the theories.

   (i) Special creation theory
   (ii) Spontenous generation theory
   (iii)Cosmozoan theory
   (iv)Steady state theory
   (v) Biochemical theory

10. Consider that you are a medical doctor and you have received a patient diagnosed with kidney stones. Suggest three possible causes and three Measures to prevent kidney stones.

11. Two groups from form two had a group activity that required them to prepare a presentation, the first group discussed the digestive system in humans while the other group discussed the digestive system of cows and goats. Upon presentation the teacher noted some differences between the two digestive systems that required some clarification. As a form four student on behalf of the teacher how would you justify this to your fellow students for form two? Give six points.