

**THE UNITED REPUBLIC OF TANZANIA**  
**PRESIDENT'S OFFICE - REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**  
**THE CITY COUNCIL OF DODOMA**  
**HOME PACKAGE FORM FOUR EXAMINATION**

**033/1**

**BIOLOGY I**

**TIME: 3 Hours**

**APRIL, 2020**

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**Instructions**

1. This paper consists of section **A, B** and **C**, with a total of **thirteen (13)** questions.
2. Answer **all** Questions in section A and B, and **one (1)** question from section **C**.
3. Except for diagram that must be drawn in **pencil**, all writing should be in **blue** or **black** ink.
4. Cellular phones and verbal communication are not allowed in the examination room
5. Write your examination **number** on every page of your Answer booklets.

**SECTION A: (20 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 sheet provided.
- (i) One of the characteristics used to identify the producer in an ecosystem is:-  
a) Feeding on readymade food  
b) Feeding on other organism  
c) Making their own food  
d) Growing on fertility soil  
e) They decompose dead organic matter.
- (ii) Which of the following Hormones stimulate seed germination in plants  
a) Gibbellins    b) Auxin    c) Cytokinins    d) Absciscic acid    e) Ethene
- (iii) Muungano stay for long time without suffering from any disease, what give her body ability to resist against it?  
a) Immunity    b) Vaccination    c) Medication    d) Vaccine    e) Inoculation
- (iv) Rise of the body temperature of the human body is corrected by:-  
a) Dilation of the skin vein and sweating  
b) Constricting of the skin vein and shivering  
c) Vasoconstriction and shivering  
d) Vasodilation and sweating  
e) Constricting of hair erector muscle and sweating.
- (v) A respiratory surface of fish  
a) Spiracle    b) gills c) fins    d) opeculum    e) lungs.
- (vi) The scientific study which deals with skin and its infection is:-  
a) Histology    b) Entomology    c) Botany    d) Anatomy    e) Dermatology
- (vii) A couple happen to have four children in their marriage one of them is albino, what is the possible genotype of a couple?  
a) AAXAA    b) Aa X Aa    c) Aa X aa    d) AaX AA    e) aa X aa
- (viii) Which of the following condition would cause the adrenal gland to produce adrenaline hormone?  
a) Playing a music    b) Seeing the snake    c) Eating tomato  
d) Smelling lemon    e) Intake of excess sugar.
- (ix) One among of the following equation is correct for anaerobic respiration in plants.  
a)  $6\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 6\text{H}_2\text{O}$   
b)  $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + 38\text{ATP}$   
c)  $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow \text{C}_3\text{H}_5\text{OH} + 2\text{ATP}$   
d)  $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2\text{C}_2\text{H}_5\text{OH} + 2\text{CO}_2 + 2\text{ATP}$   
e)  $2\text{H}_2\text{O} \xrightarrow{\text{Sunlight}} 2\text{H}_2 + \text{O}_2$

- (x) The causative agent of cervical cancer in human is:-  
 a) Tobacco Mosaic virus                      a) Human Immunodeficiency virus  
 b) Influenza virus                              d) Human papiloma virus                      e) Bacteriophage

2. Match the stems in **List A** with the correct responses in **List B** by writing the letter of the response beside the item number.

LIST A	LIST B
i. The living association of the rhizobium bacteria in the roots nodule of legumes that fix nitrogen gas into nitrate to be used by plants.	A. BIOTIC - COMPONENTS
ii. The collection of zebra, lion, elephant, grasses and bacteria living in a specific habitats.	B. BIOMES
iii. The green plants.	C. POPULATION
iv. The system in which one organism utilize the other as food.	D. ECOLOGY
v. The Nutrients, water, soil, Air and solar energy in Ecosystem.	E. SYMBIOSIS
vi. The total weight of an organism in a trophic level.	F. HOST
vii. The living association where plasmodium cause malaria to human being.	G. PREDATOR
viii. The dependent among living organism themselves and their environments.	H. QUARTERY - CONSUMER
ix. The interconnection of food chain.	I. FOOD WEB
x. The organism that is attacked by parasites.	J. MUTUALISM
	K. BIOMASS
	L. TERTIALLY-CONSUMER
	M. PRODUCER
	N. ABIOTIC-COMPONENTS
	O. COMMUNITY
	P. PARASITISM
	Q. ADAPTATION
	R. PREDATION
	S. PREY
	T. NICHE

**SECTION B: (60marks).**

**Answer all questions in this section**

Each Question in this section carries **8 marks** except for Question number three (3) and seven (7) which carries **6 marks** each

3. a) What is first aid.  
 b) Identify four components of first aid Kit and their uses.
4. a) Define the term classification.  
 b) Briefly explain the two (2) types of classification.  
 c) Explain three (3) importance of classification.

5.
  - a) Define the term blood.
  - d) Mention three functions of blood plasma.
  - c) Explain three precautions to be taken before blood transfusion from a donor to a sick person.

6. Copy and complete the digestion process in human.

REGION OF ALIMENTARY CANAL	DIGESTIVE GLAND	DIGESTIVE JUICE	ENZYMES	FOOD ACTED UPON	SUBSTANCES PRODUCED
MOUTH					
DUODENUM					

7.
  - a) What is the meaning of excretory organ?
  - b) Explain why plants do not have a special excretory organ as compared to animals? (Give four reasons).

8.
  - a) What do you understand by the term Neurone?
  - b) Mention the function of the following types of Neurone;
    - i. Motor neurone

ii. Sensory neurone

iii. Relay neurone.

- c) Give two reasons to explain why a neuron is said to be the specialized cell?

9.
  - a) Define the term Growth as used in Biology.
  - b) Growth is quantitative while development is qualitative, with example explain this statement.
  - c) During seed germination the enzymes are released to digest food substances in the cotyledon. Briefly explain why enzymes digesting starch cannot digest protein

10.
  - a) Give the meaning of the following;
    - i. Phenotype

ii. Traits

iii. Monohybrid inheritance

- b) In an experiment conducted on a single factor inheritance individuals which were male homozygous tall married a female who was homozygous dwarf. The gene for tall was dominant over dwarf. Use the cross to find the possibility of the phenotypic result and ratio in a first filial generation.

**SECTION C: (20 Marks)**  
**Answer one (1) question from this section.**

11. Explain the economic importance of bacteria
12. Explain four traditional and modern methods of food preservation
13. With the aid of diagram, explain the mechanism of hearing