

**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**

033/1

**BIOLOGY 1
(For School Candidates Only)**

Time: 3 Hours

Thursday, 07th November 2013 a.m.

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in section A and B and **one (1)** question from section C.
3. Except for diagrams that must be drawn in pencil, all writing should be done using a blue or black pen.
4. Calculators and cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).



SECTION A (20 Marks)

1. For each of the items (i) – (x), choose the correct answer among the given alternatives and write its letter beside the item number.
- (i) Animals which are able to maintain fairly constant body temperature are described as
A poikilothermic B hydrostatic
C sympathetic D symbiotic
E homiothermic.
- (ii) Night blindness in human body is avoided by eating
A oranges B carrot
C red meat D green vegetables
E chicken.
- (iii) A blood vessel which conveys deoxygenated blood away from the heart is called:
A capillaries B artery
C vein D pulmonary vein
E pulmonary artery.
- (iv) The function of cones of the human eye is to
A sense light B sense colour
C cover the eye D reflect light
E protect the eye.
- (v) A term used to identify an individual animal having both male and female sex organ is
A unisexual B hermaphrodite
C asexual D dioecious
E monoecious.
- (vi) Which of the following structures is a site of respiration?
A Chloroplast B Ribosome
C Nuclear D Nucleic acid
E Mitochondrion.
- (vii) The structures found in bacteria are
A plasmid, flagella and cilia
B cytoplasm, cilia and plastids
C cell wall, plasmid and flagella
D cell membrane, flagella and hairs
E plasmid, capsule and cilia.
- (viii) The by products in photosynthesis process are
A carbohydrate and water B carbondioxide and oxygen
C oxygen and water D carbohydrate and carbondioxide
E oxygen and air.

- (ix) The factors which contribute to spread of dental caries in human being include
 A prolonged exposure to cold water
 B prolonged exposure to warm water
 C prolonged exposure to sugary foodstuff
 D prolonged exposure to bitter food
 E prolonged exposure to hard water.
- (x) The main feature observed in prokaryotic is that they
 A have genetic materials not enclosed by nuclear membrane
 B have genetic material enclosed by nuclear membrane
 C have no genetic material in their nuclear
 D have more than one nucleic acid in their nuclear
 E have genetic material enclosed by two membranes.

2. Match the responses in **List B** with the phrases in **List A** by writing the letter of the correct response from **List B** beside the item number of **List A** in your answer booklet.

List A	List B
(i) Pair of compound eyes raised on stalks.	A Diplopoda
(ii) Numerous segments each bear one pair of leg.	B Coelenterata
(iii) Numerous segments each bear two pair of jointed leg.	C Leech
(iv) Have well defined head, thorax and abdomen.	D Arachnida
(v) Consists of organisms which give birth to young ones.	E Liver flukes
(vi) Have four pair of jointed appendages.	F Mammal
(vii) Phylum which consists of Earthworm.	G Insecta
(viii) Phylum consisting of elongated round worm with pointed ends.	H Nematoda
(ix) Phylum consisting of endoparasites which have suckers and hooks on prosclex.	I Platyhelminthes
(x) Endoparasites which have thin and leaf-like body.	J Chordata
	K Arthropoda
	L Chilopoda
	M Annelida
	N Crustacea
	O Vertebrata

SECTION B (60 Marks)

Answer **all** questions in this section.

Each question carries **8 marks** except question three (3) and six (6) which carry **6 marks** each.

3. (a) What do you understand by the term "Botany"?
(b) Briefly explain five characteristics of living things.
4. (a) State the conditions necessary for seed germination and briefly describe how they facilitate germination.
(b) Differentiate epigeal germination from hypogeal germination.
5. (a) Define the term "irritability".
(b) Describe the neuron pathway taken by reflex actions in human being.
6. (a) Give the meaning of osmosis and diffusion.
(b) Briefly explain how the following illustrate osmosis.
 - (i) Shrinking of a cell when immersed in a high concentrated solution.
 - (ii) Bursting of red blood cell when immersed in dilute solution.
7. (a) Name and explain any four theories of the origin of life.
(b) Outline two ideas of Darwin theory.
8. (a) What is the meaning of the terms:
 - (i) Digestion.
 - (ii) Malnutrition.
 - (iii) Balanced diet.
 - (iv) Nutritional disorder.
(b) Outline four types of nutritional deficiency disorders in human being.
9. (a) Give the meaning of the following:
 - (i) Continuous and discontinuous variations.
 - (ii) Inherited and acquired variations.
(b) Briefly explain how mutation and nutritional factors cause variation among organisms.
10. (a) Explain two factors affecting gaseous exchange in animals.
(b) Why fish dies when taken out of water to the land while frog survives in both water and on land?

SECTION C (20 Marks)

Answer **one (1)** question from this section.

11. Give four common accidents at home and school, for each case explain the causes and three prevention measures.
12. Explain four ways of transmission, symptoms and treatment of HIV/AIDS.
13. Describe four similarities and seven differences between insect and wind pollinated flowers.

PROBABILITY

CHAPTER 1: PROBABILITY

1.1.1. The probability of an event occurring is a number between 0 and 1, inclusive. It is denoted by $P(A)$.

1.1.2. The probability of an event not occurring is denoted by $P(\bar{A})$.

1.1.3. The probability of two events occurring together is denoted by $P(A \cap B)$.