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 three sections A, B and C.
- 2. Answer **all** questions from sections 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)

(i)	Animals which are able to maintain fairly constant body temperature are described as			
	A poikilothermicC sympatheticE homoiothermic	B D	hydrostatic symbiotic	
(ii)	Night blindness in the human body is avoided by eating			
	A orangesC red meatE chicken	B D	carrot green vegetables	
(iii)	A blood vessel which conveys deoxygenated blood away from the heart is called			
	A capillariesC veinE pulmonary artery	B D	artery pulmonary vein	
(iv)	The function of cones in the human eye is to			
	A sense lightC cover the eyeE protect the eye	B D	sense colour reflect light	
(v)	A term used to identify an individual animal having both male and female sex organs is			
	A unisexual C asexual E monoecious	B D	hermaphrodite dioecious	
(vi)	Which of the following structures is a site of respiration?			
	A ChloroplastC NuclearE Mitochondrion	B D	Ribosome Nucleic acid	
(vii)	The structures found in bacteria are			
	 A plasmid, flagella and cilia B cytoplasm, cilia and pastids C cell wall, plasmid and flagella D cell membrane, flagella and hair 	s		

- (viii) The by products in the photosynthesis process are
 A carbohydrate and water
 B carbon dioxide and oxygen
 C oxygen and water
 D carbohydrate and carbon dioxide
 - E oxygen and air
- (ix) The factors which contribute to the spread of dental cavities in human being include
 - A prolonged exposure to cold water
 - C prolonged exposure to warm water
 - E 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. Each choice in column B may be used once, more than once or not at all.

LIST A	LIST B
(i) Pair of compound eyes raised on stalks	A. Diplopoda
(ii) Numerous segments each bear one pair of legs	B. Coelenterata
(iii) Numerous segments each bear two pairs of jointed legs	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	I. Platyhelmenthis
hooks on proscolex	J. Chordata
(x) Endoparasites which have thin and leaf-like body	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 characteristic 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 neuronic pathway taken by reflex actions in human being.
- 6. (a) Give the meaning of osmosis and diffusion.
 - (b) Briefly explain how the following illustrates 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 beings.
- 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 does a fish die when taken out of water to land while a 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.