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

033/1 **BIOLOGY 1**

(For Both School and Private Candidates)

Time: 3 Hours **Thursday, 03rd November 2016 a.m.**

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B and **one (1)** question from section C.
3. Except for diagrams that must be drawn in pencil, all writings should be in blue or black ink.
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)

Answer **all** questions in this section.

1. For each of the items (i) - (x), choose the correct answer among the given alternatives and write its letter beside the item number in the answer booklet provided.

(i) Caridac muscle can be found in which part of the animal body?

A Skull B Heart C Small intestine
D Limbs E Head.

(ii) The kidney in animals is mainly responsible for

A excretion B digestion C transportation
D respiration E absorption.

(iii) The aim of experiment in the scientific investigation is to

A identify the problem B test the hypothesis C confirm the problem
D predict the results E collect data.

(iv) The main product of anaerobic respiration process in plants is

A uric acid B lactic acid C alcohol
D water E oxygen.

(v) Which of the following parasitic organisms is typicall ectoparasite?

A Tick B Tapeworm C Plasmodium
D Round worm E Lichen.

(vi) Which of the following is a seed bearing plant?

A Liverwort B Prothallus C Fern
D Sisal E Moses.

(vii) A part of an onion bulb which is important for vegetative propagation is

A scale leaves B foliage leaves C terminal buds
D roots E stem.

(viii) Which of the following is NOT a component of blood?

A Erythrocyte B Platelets C Leucocyte
D Plasma E Vein.

(ix) Which food substance can be tested by using iodine solution?

A Protein B Starch C Carbohydrate
D Non reducing sugar E Reducing sugar.

(x) The offspring produced by mating the F1 generation is konwn as

A F3 generation B F1 products C F2 generation
D New generation E Genetic generation.

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

List A	List B
(i) External appearence of a given characteristic as a result of influence by a gene.	A Mutation
(ii) Genetic disorder characterised by failure of blood clotting.	B Sex linked character
(iii) A sudden genetic change which can be inherited.	C Genotype
(iv) Characteristics that can pass on from parent to offspring through sexual reproduction.	D Dominant gene
(v) The possession of the characteristics which are different from those of the parents and other offspring.	E Variation
(vi) A gene that influences characteristics over another gene when in heterozygous state.	F Albinism
(vii) A cross between individuals with homozygous parents.	G Phenotype
(viii) A unit of inheritance which determins a specific characteristic.	H Test cross
(ix) Genetic makeup of a given gene which determines a given characteristic.	I Loci
(x) A disorder resulting from lack of melanin pigments.	J Haemophilia
	K Homozygous
	L Backcross
	M Recessive
	N Gene
	O Co-dominance

SECTION B (60 Marks)

Answer **all** questions in this section.

3. (a) Give the meaning of the term “laboratory.”

   (b) Describe three warning sign found on the laboratory containers.

4. (a) State three basic principles of waste disposal.

   (b) Why poor waste disposal at home is said to cause adverse effects?

5. (a) Briefly explain the following terms:
   (i) Trophic level.
   (ii) Food chain.
   (iii) Food web.

   (b) With example, briefly explain how the following interactions of living organism take place.
   (i) Predation
   (ii) Parasitism.

6. (a) Define the terms “classification” and “Taxonomy”.

   (b) (i) List the types of classification systems.
   (ii) Give two differences between the classification systems you have listed in (b)(i).

7. (a) (i) Name three types of muscles found in mammals.
   (ii) Which one of the muscle named in (a)(i) is a voluntary muscle?

   (b) Briefly explain the functions of the following component of the skeleton:
   (i) Skull
   (ii) Ribs
   (iii) Vertebral column
   (iv) Pelvic girdle.

8. (a) (i) What are the raw materials for photosynthesis?
   (ii) List two products of photosynthesis.

   (b) State how the ileum is adapted for absorption function.

9. (a) Explain how anaerobic respiration is applied in a real life situation.

   (b) List the organs responsible for gaseous exchange in the following organisms:
   (i) Goat
   (ii) Grasshopper
   (iii) Frog
   (iv) Tilapia.

10. (a) Give the meaning of the following terms:
   (i) Vegetative propagation.
   (ii) Gamete.

   (b) Explain the merits and demerits of asexual reproduction in plants.

SECTION C (20 Marks)

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

11. With the aid of a well labelled diagram, describe the internal part of the mammalian heart.

12. Explain how mammals regulate their internal body temperature in response to external environmental changes.

13. Write a descriptive report which you can use to educate the community about the mode of transmission, symptoms and prevention measure of malaria in Tanzania.