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 **Wednesday, 07th November 2018 a.m.**

Instructions

1. This paper consists of sections A, B and C with a total of **thirteen (13)** questions.
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 writing should be in blue or black ink.
4. Calculators, cellular phones and any unauthorised materials 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) Mitosis normally takes place in

A reproductive cells B animal cells only C blood plasma
D plant cells only E somatic cells.

(ii) Which of the following is the symptom of the disease caused by lack of protein in children?

A Anemia B Swollen head C Breeding
D Pale and thin hair E Sneezing.

(iii) How many gametes are produced from one cell during meiosis?

A Eight B Two C Four
D Six E Ten.

(iv) Which of the following is the excretory organ in humans?

A Mouth B Kidney C Pancreas
D Stomach E Anus.

(v) Which of the following hormones stimulates seed germination in plants?

A Gibberellins B Auxin C Cytokinins
D Abscisic acid E Ethene.

(vi) A joint which allows rotation in all planes is called

A suture B ball and socket C pivot
D ligament E hinge.

(vii) In which environmental condition the loss of water vapour from plants is mostly favourable?

A Hot and Windy day B A saturated atmosphere
C Cool and dry atmosphere D Windy day
E Hot day.

(viii) The function of the bright coloured petals in flowers is

A to store nectarines B to hold sepals in position
C to produce colour of the flower D to receive pollen grain
E to attract insects for pollination.

(ix) The function of hydrochloric acid in food testing experiments is

A to decolourise food sample B to test reducing sugar
C to oxidize the food sample D to neutralize sugary foods
E to hydrolyze complex to simple sugar.

(x) The interaction between two species in which both organisms benefit is known as

A ectoparasite
B parasitism
C commensalisms
D mutualism
E endoparasite.

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 your answer booklet provided.

LIST A	**LIST B**
(i) Larvae released in water by snails before infecting human and cause the disease.	A Cholera
(ii) A pandemic disease caused by virus and has no cure to the moment.	B Typhoid
(iii) An endemic disease characterized by periodic fever, vomiting and joint pain and sometimes death.	C AIDS
(iv) A disease caused by deficiency of carbohydrates in humans.	D Malaria
(v) A deficiency disease caused by lack of vitamin C.	E Syphilis
(vi) An epidemic disease diagnosed by the extreme fluid loss and diarrhea looking like 'rice water'.	F Kwashiorkor
(vii) An air bone disease diagnosed by prolonged coughing and sputum contain blood.	G Scurvy
(viii) Malnutrition disorder identified by swellings of stomach, thin limbs, thin and pale hairs in children.	H Common cold
(ix) A disorder characterized by failure of blood clotting.	I Pneumonia
(x) A sexually transmitted disease which shows painless sore in various parts of the body.	J Hemophilia
	K Sickle cell anemia
	L Tuberculosis
	M Schistosoma
	N Marasmus
	O Measles

SECTION B (60 Marks)

Answer **all** questions in this section.

All questions carry **8 marks** except question three (3) and seven (7) which carry **6 marks** each.

3. (a) Differentiate the term "Biological apparatus" from "Biology Laboratory".

(b) Briefly explain why the following substances are dangerous?

(i) Toxic substances
(ii) Highly flammable
(iii) Corrosive substances
(iv) Radioactive substances.

4. (a) Give the meaning of the following terms as used in Biology:
   (i) Blood transfusion.
   (ii) Blood compatibility.

   (b) (i) State two advantages of blood transfusion.
   (ii) Outline four precautions to be taken during blood transfusion.

5. (a) Explain the distinctive features of the Division Filicinophyta.

   (b) Draw a well labeled diagram of a fern plant.

6. (a) Describe the stages of human post-natal growth and development.

   (b) What do you understand by the term "Primary growth" in plants?

7. (a) Briefly explain the process of menstruation in human beings.

   (b) Mention two types of the common disorders of human reproductive systems.

8. (a) List any four macro-elements in plant nutrition.

   (b) Explain the causes of any three common disorders and diseases of the human digestive system.

9. (a) A newly married couple expects a baby. Using a genetic cross, work out the probability of their first born child being a boy.

   (b) Give the meaning of the following terminologies as used in genetics:
   (i) Sex linked genes
   (ii) Sex determination
   (iii) Phenotype.

10. (a) Give the meaning of the following Biological terms as used in the ecosystem:
   (i) Biotic components
   (ii) Abiotic components
   (iii) Food chain
   (iv) Food web.

   (b) Construct a feeding relationship which accommodates the following organisms: Grasses, Goat, Sheep, Shrubs and Man.

SECTION C (20 Marks)

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

11. Elaborate four causes and five preventive measures of drug abuse.

12. With the aid of a well labelled diagram, describe the urinary system and explain the process of urine formation in human beings.

13. Describe four evidences of organic evolution.