

**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, 01st November 2017 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).

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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) Goitre is a deficiency disease caused by lack of which element in the diet?
A Carbohydrate B Iodine C Vitamin E
D Vitamin C E Protein.
- (ii) Tongue rollers in genetics is an example of
A gametogenesis B continuous variation C swallowing
D lubricating food E discontinuous variation.
- (iii) Which food substance is investigated in the biuret test procedure?
A Carbohydrate B Lipids C Protein
D Starch E Reducing sugar.
- (iv) The product of anaerobic respiration process in animals is
A lactic acid B carbon dioxide C alcohol
D water E oxygen.
- (v) A phylum consisting of species with jointed appendages and exoskeleton is known as
A Chordata B Annelida C Arthropoda
D Platyhelminthes E Nematoda.
- (vi) Which part of the flower receives pollen grain during pollination?
A Petal B Stigma C Stamen
D Style E Ovary.
- (vii) A rapid growth in plants is mainly taking place in
A leaves B cambium C roots
D shoots and root tips E stem.
- (viii) Which of the following is NOT a component of First Aid Kit?
A Razor blade B Panadol C Bandage
D Soap E Microscope.
- (ix) Which disease spread rapidly as a result of poor waste disposal?
A Anemia B AIDS C Cholera
D Leukemia E Small pox.
- (x) A voluntary muscle that is capable of relaxing continuously and do not fatigue easily is known as
A skeletal muscle B biceps C triceps
D cardiac muscle E smooth muscle.

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) A disease caused by flatworms known as schistosome.	A Malaria
(ii) A disease caused by a protozoan called <i>trypanosoma</i> .	B Syphilis
(iii) A tropical disease caused by <i>plasmodium</i> .	C Bilhazia
(iv) A water borne disease caused by <i>entamoeba histolytica</i> .	D AIDS
(v) An outbreak disease caused by <i>vibrio cholerae</i> .	E Dysentery
(vi) A sexually transmitted disease caused by bacteria known as <i>treponema palladium</i> .	F Gonorrhoea
(vii) A communicable disease caused by <i>salmonella typhi</i> .	G Typhoid
(viii) A sexually transmitted disease caused by bacteria known as <i>Neisseria gonorrhoea</i> .	H Measles
(ix) A viral infection disease caused by HIV.	I Tuberculosis
(x) A disease caused by <i>micobacterium tuberculosis</i> .	J Cholera
	K Trypanosomiasis
	L Tetanus
	M Leprosy
	N Polimyelitis
	O Rabies

SECTION B (60 Marks)

Answer **all** questions in this section.

All questions carry **8 marks** except question eight (8) and nine (9) which carry **6 marks each**.

3. (a) Why schools should have a Biology laboratory? Give a reason.
- (b) State six laboratory rules.
4. (a) State two principles of waste disposal.
- (b) Suggest three proper ways of waste disposal in the community.
5. (a) (i) What do you understand by the term respiration?
- (ii) Name the two types of respiration.
- (b) Explain how gaseous exchange occurs across the aveolus.

6. (a) Differentiate complete dominance from incomplete dominance.
- (b) In a laboratory experiment, tall pea plants were crossed with dwarf pea plants. F_1 plants were then selfed to produce F_2 generation.
- (i) Using appropriate symbols, work out a genetic cross for F_1 generation.
- (ii) Give the phenotypic and genotypic ratio of F_1 generation.
7. (a) Explain the process of fertilization in flowering plants.
- (b) Briefly explain how you would identify an insect pollinated flower.
8. (a) Name three types of muscles found in mammals.
- (b) Briefly explain how muscles are adapted to their role. Give three points.
9. (a) List any two types of blood cells.
- (b) Give two differences between arteries and veins.
10. (a) With examples, state the meaning of “abiotic” and “biotic” factors of the environment.
- (b) (i) Differentiate the terms “food chain” from a “trophic level”.
- (ii) Construct a food chain by using organisms named in the following list:
Grass, Bacteria, Lions and Zebra.

SECTION C (20 Marks)

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

11. Describe the types of macronutrients needed in human body. In each type identify the source and function of food substances in human body.
12. With the aid of illustrations, discuss the stages of mitosis.
13. With the aid of a well labelled diagram, describe the structure of bacteria and give three advantages and disadvantages of bacteria in daily life.