

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

033/1

BIOLOGY 1
(For Both School and Private Candidates)

Time: 3 Hours

Year: 2020

Instructions

1. This paper consists of sections A, B and C with a total of **fifteen (15)** questions.
2. Answer **all** questions in sections A and B and **two (2)** questions from section C of which question 13 is compulsory..
3. Section A carries **fifteen (15)** marks, section B **sixty (60)** marks and section C carries **twenty five (25)** marks.
4. All writing should be in **blue** or **black** ink, except for diagrams that must be drawn in pencil.
5. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (15 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) What is the main product of anaerobic respiration in plants?
A Uric acid B Lactic acid C Water
D Alcohol E Pyruvic acid
- (ii) Suppose you are provided with small sections of cells from different organisms, which equipment will you use to identify them?
A Test tube B Watch glass C Microscope
D Petri dish E Beaker
- (iii) In which Phylum do filarial worms belong?
A Annelida B Nematoda C Anthopoda
D Platyhelminthes E Chordata
- (iv) Which nutritional disorder may result when a person takes larger quantities of carbohydrates than body's requirements?
A Rickets B Marasmus C Beriberi
D Kwashiorkor E Obesity
- (v) What is the role of the cerebrum in human beings?
A Breathing B Sneezing C Yawning
D Learning E Walking
- (vi) In which specific part of the female reproductive systems is tubal ligation applied as a method of birth control?
A Oviduct B Uterus C Cervix
D Ovary E Vagina
- (vii) Why a faint victim should be laid down with the head lower than the feet when rendering First Aid?
A The body needs minerals B The brain needs oxygenated blood
C The body needs nutrients D The lung needs deoxygenated blood
E The victim needs carbon dioxide
- (viii) Which of the following structures of organisms are homologous?
A Wings of birds and wings of grasshoppers
B Forelimbs of man and wings of butterfly
C Wings of houseflies and wings of bat
D Wings of bees and forelimbs of man
E Forelimbs of man and wings of bat

- (ix) Why is transfusion of blood from a donor with group O to a recipient with blood group AB successful?
- A The recipient's blood has no antibodies.
 - B The recipient's blood has no antigens.
 - C The donor's blood has many antigens.
 - D The donor's blood has many antibodies.
 - E The recipient's blood has antigen O.
- (x) Study the following groups of organs and answer the question that follows:
- (i) Tongue, stomach, liver and the intestine.
 - (ii) Stomach, tongue, heart and liver.
 - (iii) Urethra, urinary bladder, ureter and kidney.
 - (iv) Urinary bladder, kidney, tongue and heart.
- A (i) and (ii) B (i) and (iv) C (i) and (iii)
D (ii) and (iv) E (ii) and (iii)

2. Match the functions of the parts of microscope in **List A** with their corresponding parts of microscope in **List B** by writing the letter of the correct response beside the item number in the answer booklet provided.

LIST A	LIST B
(i) Allows light to pass from the objective lens to the eye piece lens.	A Body tube
(ii) Supports the eye piece and revolving nose piece.	B Coarse adjustment knob
(iii) Raises or lowers the body tube in order to bring the image into sharp focus.	C Diaphragm
(iv) Raises or lowers the body tube in order to bring the image into focus.	D Fine adjustment knob
(v) Raises and lowers the stage to keep the specimen in right position for observation.	E Hinge screw
	F Mirror
	G Ocular tube
	H Stage clip

SECTION B (60 Marks)

Answer **all** questions in this section.

3. (a) How can fire accidents be avoided in the school laboratory? Give three points.
(b) Suggest three causes of cut accidents at home.
4. Explain the structure of tilapia fish by considering the following features:
 - (a) Nature of skeleton.
 - (b) Types of scales.
 - (c) Position of mouth.
 - (d) Tail fin.
5. Suppose you had a study tour visit to Serengeti National park and you find the following organisms; lions, buffalo, wildebeest, hyena, shrubs, grasses and bacteria.
 - (a) Construct a food web that accommodates all the organisms.
 - (b) What will happen into the ecosystem if bacteria are eliminated?
6. While performing surgery on a mammal, two blood vessels were cut by mistake. In one of the vessels blood flow out with high pressure while in the other vessel blood flow out with low pressure.
 - (a) What are the names of the two blood vessels?
 - (b) Why one blood vessel had high pressure and the other low pressure? Briefly explain.
7. Briefly explain three significances of mitosis in living organisms.
8. How is the mammalian eye adapted to its function? Give four points.
9. How do plants get rid of excretory products? Briefly explain three ways.
10. Water and salts are needed in constant amount for effective functioning of the body. Briefly explain three factors which affect the content of salts and water in human body.
11. Give four differences that exist between insect pollinated flowers and wind pollinated flowers.
12. In an experiment, bean seeds having a smooth seed coat were crossed with beans having wrinkled seed coat. All the seeds obtained in the first filial generation (F_1) had a smooth seed coat. Use genetic cross to find out the formation of (F_1) individuals.

SECTION C (25 Marks)

Answer **two (2)** questions from this section. Question **13** is compulsory.

13. Tuberculosis (TB) is among the threatening diseases in the country. Give four points on how you will educate the people on its symptoms and five preventative measures to be taken in order to minimize the spread of the disease. **(15 marks)**
14. Members of Matatu village are hunters, farmers and fishermen. They obtain a variety of foods from their activities but do not have food processing industries. With one example in each case, explain four methods which will help villagers to preserve their food. **(10 marks)**
15. Human skeleton serves several functions in the body. With one example in each case, explain four functions of human skeleton. **(10 marks)**