

NAME:.....STREAM.....



## THE NAVIGATOR EXAMINATION COUNCIL KAMPALA

UGANDA CERTIFICATE OF LOWER SECONDARY EDUCATION

END OF YEAR EXAMINATION 2023

**BIOLOGY**

SENIOR 1

2 HOURS

**THIS PAGE IS FOR EXAMINER USE ONLY**

**Do not write in the boxes on this page. The examiner will use them to keep a record of your marks.**

SECTION A									
Question	1	2	3	4	5	6	7	8	Total
Max marks	4	5	6	8	4	4	5	4	40
Actual marks									
SECTION B									
Question	11	12	13	14	15	16			Total
Max marks	15	15	15	15	15	15			60
Actual marks									

### Instructions

This paper consists of two sections; Section A (40 marks) and Section B (60 marks).

- Section A consists of 08 structured questions. Attempt **all questions** in this section by filling the answers in the spaces provided.
- Section B consists of six extended short essay questions. Attempt **any four** questions from this section. Answers to questions in this section must be written on separate booklets provided. All questions in this section carry equal marks

## **SECTION A (40 MARKS)**

**1a).** The term biology was derived from two greek words ‘Bios’ meaning.....and ‘logos’ meaning ..... (02 marks)

Therefore; biology is the branch of science that deals with the study of ..... (01 marks)

**b).** ..... and ..... are the two major branches of biology. (02 marks)

**2.** Living organisms in the community exhibit different life process. Choose the most correct life process and fill it in the blank spaces provided below. (05 marks)

i) ..... is the process by which living organisms give rise to young ones of the same kind.

ii). ..... is the process by which living organisms get rid of harmful by.products of chemical reactions of metabolism.

iii). Living organisms such as animals move their whole body in search of food, shelter, mates or to escape from danger. This is known as .....

iv). ..... is the process by which living organisms feed on materials from the environment and make them part of their body or use them to provide energy.

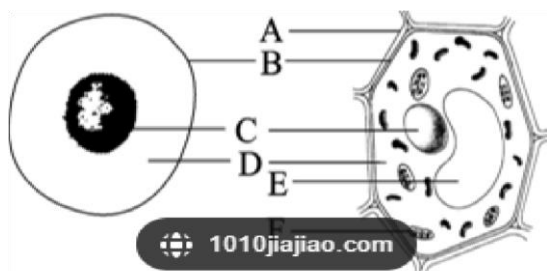
v). ..... refers to the irreversible permanent increase in size of an organism.

(Locomotion, feeding, Reproduction, Excretion, Growth)

**3.** You are provided with cells A and B as shown below.

**Figure 1**

**figure 2**



a). Identify cells in figure 1 and 2 (02 marks)

i) Cell in figure

1.....

ii) Cell in figure 2

.....

b) State the parts labeled A, B and C

(03 marks)

i) A.....

ii) B.....

iii) C.....

C) State any two roles of part labeled C to the above cells.

(02 marks)

.....  
.....  
.....  
.....

4. Plants and animals are groups of living organisms that makeup the community. State any four differences between plants and animals.

(04 marks)

PLANTS	ANIMALS

5. Senior one students during one of their biology lesson examined some micro organisms obtained from pond water in their school garden using magnifying instruments studied in the biology obtained from laboratory.

i) Which branch of biology deals with the study of micro organisms?

(01 marks)

.....  
.....

ii) Identify any two magnifying instruments in the laboratory that were used in the lesson. (02 marks)

.....

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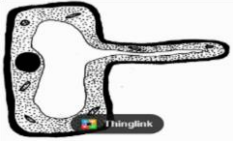



iii) Suggest any two-biological importance of microorganisms in our community. (02 marks)

.....

.....

6. The table below shows the diagrams of the specialized cells. Fill in their functions in the blank areas in the table. (05 marks)

7.

SPECIALISED CELL DIAGRAMS	FUNCTION OF A SPECIALISED CELL
	
	
	
	
	

8. Joan, a senior one student kept bread in her suitcase for a long period of time. Later she observed the bread moulds on her bread while using a hand lens and microscope.

i) State the kingdom to which the bread moulds above belong. (01 mark)

.....

ii) Suggest any other two organisms which belong to the same kingdom above. (02 marks)

.....

.....

iii). Give three economic importance of organisms in the kingdom above. (03 marks)

.....

.....

.....

8. Organisms are grouped using scientific names. Complete the table below by filling in the appropriate answers. (03 marks)

ORGANISM	GENUS NAME	SPECIES NAME	SCIENTIFIC NAME
Cockroach	Periplaneta	americana	.....
Man	Homo	.....	<u>Homo sapien</u>
Bee	.....	mellifera	<u>Apis mellifera</u>

### **SECTION B (60 marks)**

**Attempt any four questions**

9. The diagram below shows two common organisms in our community.



a). Identify the kingdom to which they belong. (01 marks)

b (i) State the phylum to which they belong. (01 marks)

ii) State three reasons for your answer in b (i) above (03 marks)

c) Why are the above organisms considered insects? (03 marks)

d)What are the economic importance of insects in our communities. (07 marks)

10. In the year 2020, there was a global outbreak of a viral disease which threatened the lives of many people worldwide. Research shows that this pandemic began in China and spread to other parts of the world.

i) Identify this viral disease. (01 mark)

ii) State the name of the virus responsible for the viral disease. (01 mark)

iii) Identify any five signs and symptoms that were shown by the individuals that succumbed to the viral disease. (05 marks)

iv) Suggest any eight interventions that were made by the government of Uganda to eradicate the pandemic. (08 marks)

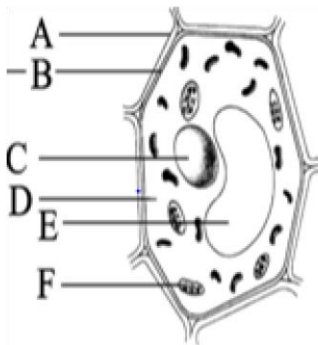
11. Microbiology refers to the study of micro organisms. However some of these organisms are unicellular and can be seen clearly using magnifying instruments.

a. i) Define the term magnification as used in the study of micro organisms. (02 marks)

ii) Suggest any two examples of magnifying instruments that can be used in the study.

(02 marks)

b) The figure below was observed by senior one biology students as they examined appearance of onion cells under a microscope. Carefully study and use it to answer the questions that follow.

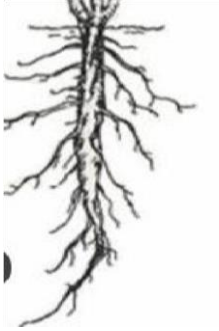


i) Name the parts labeled A to F. (06 marks)

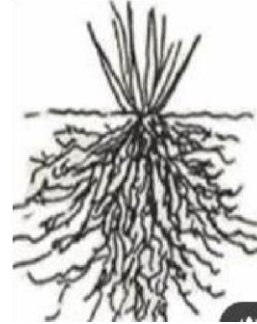
ii) Suggest the function of the parts labeled A to E. (05 marks)

12. Peter a farmer in Luweero district planted maize and beans in his farmland. At the end of the season, he harvested his crops in preparation for the next season. However he observed the root systems from each of the plant. The root systems are shown below. Study them carefully and answer the questions that follow.

**Figure A**



**Figure B**



- a) Identify the type of root system in
- (i) figure A (01 mark)
  - (ii) Figure B (01 mark)
- b) Identify the plant from Peter's farm that possesses root system in
- (i) figure A (01 mark)
  - (ii) Figure B (01 mark)
- c. i) Identify the type of farming Peter is practicing on his farm. (01 mark)
- ii) Suggest the advantage of the above farming method. (01 mark)
- d. (i) State any five root modifications you know. (05 marks)
- ii) Roots are essential parts of the plant. Suggest any four functions of roots to a plant. (04 marks)

13. Some students from S.2 biology group X made some research about the organisms in their school garden.

They found out that the school garden was a habitat to a number of living organisms.

### **RESEARCH FINDINGS**

They observed some mushrooms growing in areas with a lot of decomposing organic matter, squirrels entering holes in the garden soil, filamentous spirogyra in pond water flowing through the garden, bacteria on decomposing matter and leafy amarathus plants growing as weeds.

- a. i) Identify the kingdom to which each organism in the above garden belongs. (05 marks)
- (ii) Suggest the reason why mushrooms were found growing in areas with a lot decomposing organic matter. (02 marks)
- b. i) State any three characteristics of organisms belonging to the same kingdom where the mushrooms belong. (03 marks)
- ii) State any five biological roles played by the squirrels and other organisms that live in the soil. (05 marks)

14. The list below shows a group of items. Study it carefully and answer the questions that follow.

### **List**

Red blood cell, liver, platelets, lungs, white blood cells, root, flower, platelets, shoot, guard cells, pancreas, epidermal cells

- a. i) identify those items which belong to animals. (05 marks)
- (ii) Identify those items which belong to plants. (05 marks)
- b) Define the following terms as used in the levels of cellular organization. (05 marks)
- i) Cell
- ii) Tissue
- iii) Organ
- iv) System
- v) Organism



15. Life processes are necessary to all organisms in order to survive. Therefore different organisms exhibit different life processes which sustain their lives.

i) State all the seven life processes exhibited by living organisms in nature. (07 marks)

ii) State the importance of each of the life process shown in (i) above to organisms. (08 marks)

16. Both plants and animals are living organisms that make up our communities.

i) State the reason why plant and animals are referred to as multicellular organisms. (01 mark)

i) Identify any seven similarities between plants and animals. (07 marks)

iii) State any seven differences between plants and animals. (07 marks)

**END**