**Name**.....**personal no**...../...../…….

**Signature**.....

**553/1**

**BIOLOGY**.

**S.1**

***Aug-2023***

**1 ½ hours.**

**LAROO SECONDARY SCHOOL**

**BIOLOGY EXAMINATIONS**

**BIOLOGY DEPARTMENT.**

***Competency based curriculum end of term examination 2023***

**Uganda Lower secondary certificate of education. (U.L.S.C.E)**

***Instructions***.

•Attempt ***all*** the questions in section **A** and section **B**

•Diagrams where necessary must be drawn using a sharpened pencil.

**For Examiners use only**

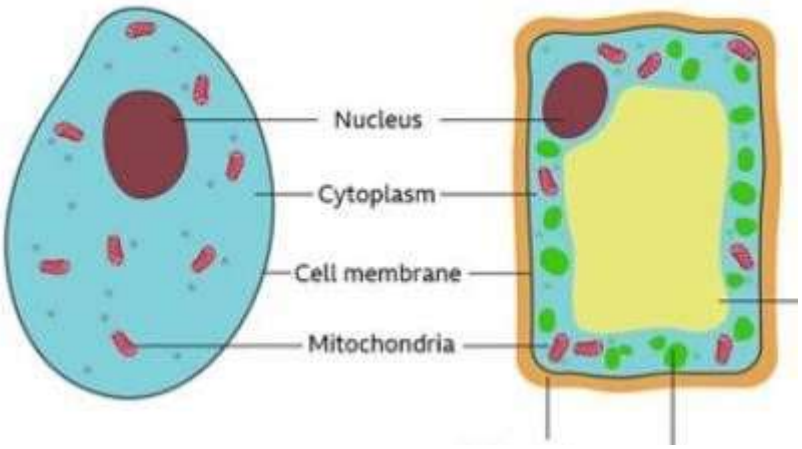
| Question | Marks. | Comment |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

## SECTION A.

***Attempt all the questions in this section***

1. A ***cell*** is the smallest basic functional building unit of all living organisms. While studying about the structure of cells, one group of S.1 students obtained a piece of epidermis from a fleshy leaf of an onion bulb and another group of students obtained cheek cell and placed each under separate microscopic slides. They observed the structure of the epidermal cell and cheek cell under low and medium power objective. The cell structures observed were drawn by students typical to cells **X** and **Y** as shown below.

**Cell X** **cell Y**




**Q** **R**

(a)Which of cells **X** and **Y** is typical to

(i) epidermal cell of onion bulb. ***(01 mark)***

.....

(ii) cheek cell. ***(01 mark)***

.....

(b)Use the parts indicated on both cells **X** and Cell **Y** and fill in the spaces below. ***(04 marks)***

.....is semi-permeable membrane enclosing cell contents. Its function is controlling the movements in and out of the cells.

The jelly -like substance in which chemical processes are carried out in the cells above is .....

.....is an organelle where food is broken down to release energy in the cells, a process called respiration.

.....controls all the activities taking place within the cells.

(c). Name part of cell **Y** labelled, ***(02 marks)***

(i). **Q.** .....

(ii).**R**.....

(d). State the function of parts on cell **Y** labelled,

(i). **Q** ***(01 mark)***

.....

.....

(ii). **R** ***( 01 mark)***

.....

..... .....

(e). Other than parts **Q** and **R** named in (c) above, state other two structural differences between cells **Q** and **R** ***( 02 marks)***

.....

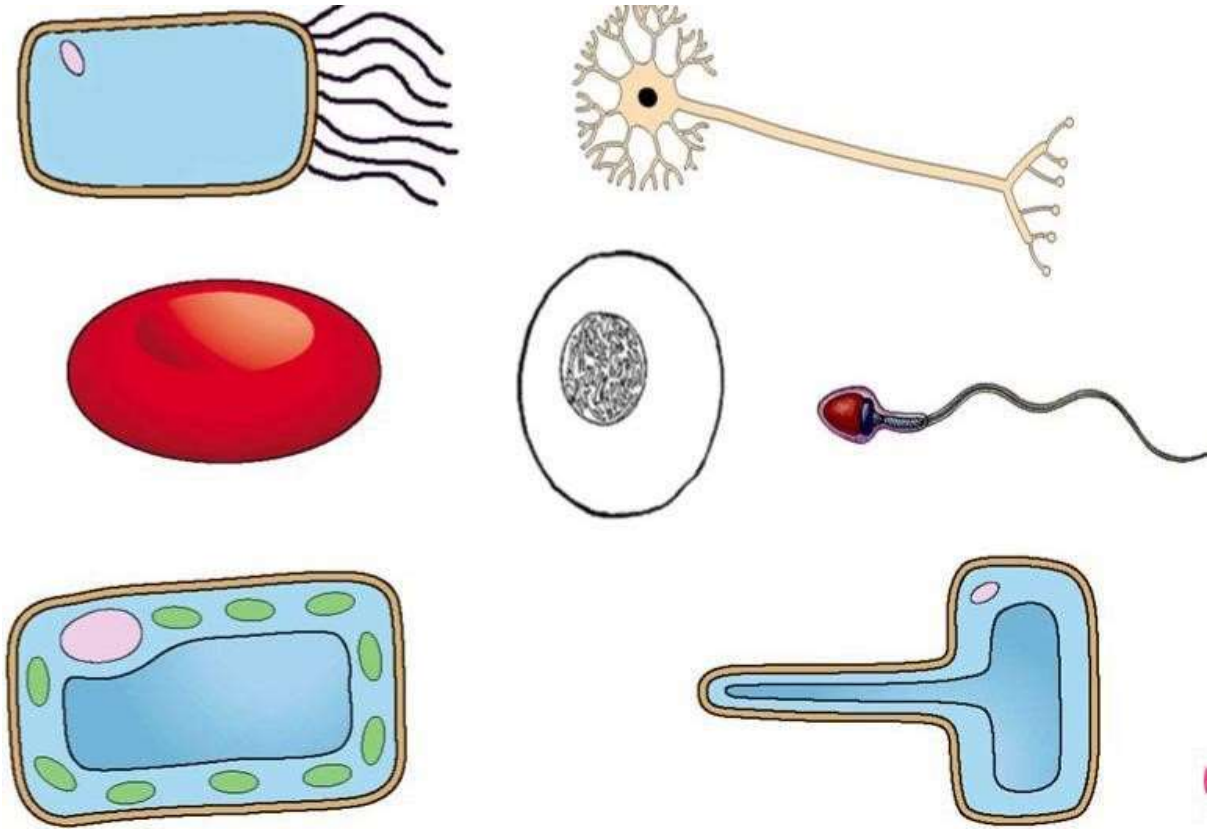
.....

.....

.....

2.Multicellular organisms are made of many kinds of special cells called ***specialised cells***. Below are different structures of ***specialised cells*** found in some multicellular organisms. Use them and answer the questions that follow.

**Cell C** **Cell N**



**Cell E** **cell R**

(a) State what is meant by "***specialized cell"*** ***(01 mark)***

..... .....

.....

(b) Name the specialised cell labelled, ***(04 marks)***

(i) **C**.....

(ii)**N**.....

(ii)**E.**.....

(iv)**R**.....

(c) From the diagrams above; state the ***adaptation*** of the of specialised cells to their functions.

(i).**Cell C** ***(02 marks)***

.....

.....

.....

***"Biology gives you a brain, life turns it into a mind"***

(ii)**Cell E** ***( 02 marks)***

.....

.....

.....

(d)State the function of **cell R** in man. ***(01 mark)***

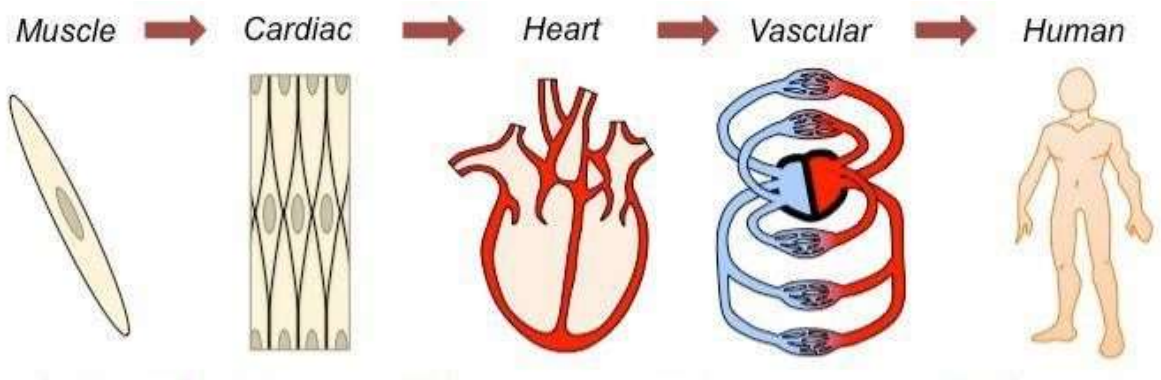
.....

.....

(e)Three specialised cells above are not labelled with letters. Identify and ***mark the specialised cell*** with a letter which corresponds to its name as given below. ***( 3 marks)***

- Egg cell (Ovum) ---------- **Z**
- Red blood cell.....**W**
- Sperm cell.....**M**

3.The life processes of the human body are maintained at several levels of structural organisation. Below are diagrams showing different levels of organisation in man. Use them and answer the questions that follow.




**Cell**----------> **level T** ----------> **level** S------> **level** V----------**level O** (a)Name the labelled levels of structural organisation in man, ***( 04 marks)***

(i) Level **T**.

.....

(ii) Level **S**.

.....

(iii) Level **V**.

.....

(iv) Level **O**.

.....

(b)State the function of the following in the human body. ***(02 marks)***

(i) Muscle cell.

.....

.....

(ii)heart.

.....

.....

(c)Of what importance is the ***vascular*** structure belonging to **level Y** in man.

***(01mark)***

.....

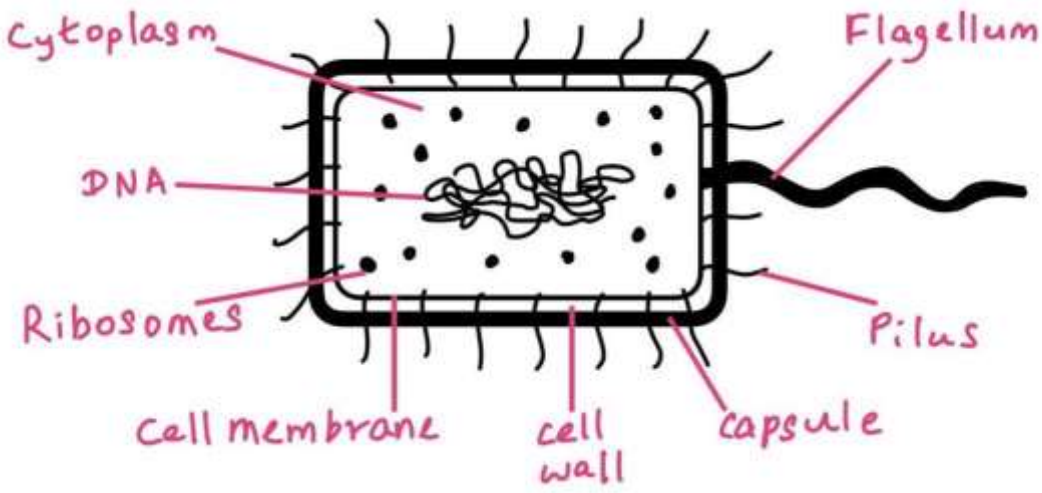
.....

**SECTION B.**

***Attempt questions in this section.***

***All questions carry equal marks.***

4.(a) Among the very many major challenges for health care systems is **infectious prevention and control. (I.P.C)** for infectious diseases. Infectious diseases are caused by harmful organisms (**pathogens)** that enter our bodies from the outside. The ministry of health organized a one-day workshop in your school to sensitize you about infectious diseases. One of the posters pinned around the workshop had the structure of a **pathogen below.**




(i) Name the pathogens whose structure is shown above. ***(01 mark)***

(ii) State the kingdom to which the pathogen named in (i) belongs. ***(01 mark)***

(iii) State three general features of the pathogens whose structure is shown above. ***(03 marks)***

(iv) Name three infectious diseases caused by the pathogens whose structure you shown above. ***(03 marks)***

(v) As a biology student who attended the infectious prevention and control (I.P.C) workshop about the pathogens whose structure is drawn above; suggest ways how each of the infectious diseases named in (iv) can be controlled in your community ***(03 marks)***

(b) Advancements in technological microbiology started to draw the attention of the market when products originating from microbial activity of above pathogens began to be required by man on a large scale.

State how bacteria are used in a number of ways basing on their natural metabolic capabilities. ***(04 marks)***

**5.** One S.1 student; John Speke asked his fellow class members that "how comes organisms in the world have different names according to people's languages"

He gave an example and said that a dog in Acholi is called 'Gwok', 'Mbwa' in Luganda and 'Embwa' in Runyankole.

Another S.1 student; Lucky Peace said that each organism in the world has a scientific name originating from two Latin words which name is recognized in the whole world.

She added and said that for example, a **DOG** is known as *Canis familiaris.*

(a) Explain the following terms ***(5 marks)***
   (i) Classification
   (ii) Taxonomy
   (iii) Species
   (iv) Genus
   (v) Binomial nomenclature

(b) Name the major taxonomic unit or levels of classification used in classifying organisms ***($3\frac{1}{2}$ marks)***

(c) In the scientific name given by Lucky Peace, identify a;
   (i) Species name ***(1 mark)***
   (ii) Genus name ***(1 mark)***

(d) Identify any ***two*** importance of classifying organisms. ***(2 marks)***

(e) Name any ***five*** kingdoms that exist among organisms. ***($2\frac{1}{2}$ marks)***

# END