NAME…………………………………. ADM.NO…………......… C/NO……… CLASS…..…

NYABURURU GIRLS'
NATIONAL SCHOOL

OUR LADY OF LOURDES

| DATE DONE……………………………………….. |
| INVIGILATOR……………………………………….. |
| DATE RETURNED……………………………………… |
| DATE REVISED……………..…………………………….. |

231/1

FORM TWO

BIOLOGY CAT 1 PAPER 1

TERM TWO 2016

TIME: 2HOURS

<u>INSTRUCTIONS TO THE CANDIDATES:-</u>

- Write your **name** and **class number** in the spaces provided.

- Answer *all* the questions in the spaces provided.

- All workings **MUST** be clearly shown where necessary.

<u>For Examiner's Use Only</u>

QUESTIONS	MAXIMUM SCORE	STUDENT'S SCORE
1 - 24	**80**	

1. (a)   State **two** structural adaptations that make xylem vessels suitable for transport of water and mineral salts.   (2mks)

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....

    (b)   List any **three** adaptations of the root hair cells to their functions   (3mks)

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2. State the role of the following elements to the growth and development of plants   (3mks)

         (i)   Calcium

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....

         (ii)   Magnesium

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....

         (iii) Nitrogen

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....

4. (a)   Define the following terms:-   (2mks)
         (i)   Species:

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....

(ii)   Binomial nomenclature:-

....

....

6.   For a leaf to be efficient for photosynthesis it has to be broad and flat. Explain   (2mks)

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7.   What is the significance of active transport in the human body?   (3mks)

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8.   a) Name the parts of the chloroplast where each of the following activities take place.

(i) Light stage   (1 mk)

....

(ii) Dark stage   (1mk)

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b) Name **one** of the end products of the dark reaction in photosynthesis.   (1mk)

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....

c) State the importance of chlorophyll in photosynthesis.   (1mk)

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9.   Give **two** reasons why higher animals need an internal transport system   (2mks)

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10. The diagram below represents an organelle involved in aerobic respiration.
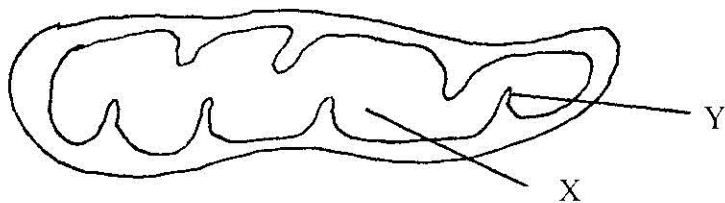
a) Identify the organelle (1mk)

....

b) Name the parts labeled X and Y. (2mks)

X ....

Y ....

11. State **three** factors that affect the rate of diffusion. (3mks)

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....

12. State the function of the phloem tissue in plants (1mk)

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....

13 I) The following is a dental formula of certain group of mammals.

$$i\frac{3}{3} \quad c\frac{1}{1}, \quad pm\frac{4}{4}, \quad m\frac{2}{3}$$

a) Work out the total number of teeth present in the mammal. (2marks)

....

....

b) (i) State the likely mode of feeding for the group of mammals. (1mark)

....

(ii) Give a reason for your answer in (b) (i) above. (1 mark)

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II) State one role of hydrochloric acid secreted by the stomach wall. (1mk)

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14. Explain what would happen to the red blood cells when they are placed in hypotonic solution. (3mks)

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15. The scientific name of the housefly is *Musca domestica*. Classify the fly into; (2mks)

i) Genus

....

ii) Species

....

16. a)Name two Vitamins of which their absence in the diet may cause a dental disease called gingivitis (2mks)

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b) State four factors which affect enzyme controlled reactions. (4mks)

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17. a) State three factors that maintain the transpiration stream. (3mks)

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b) State four structural factors that affect the rate of transipiration. (4mks)

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18. Define;

i) Pulmonary circulation. (1mk)

....

ii) Systemic circulation (1mk)

....

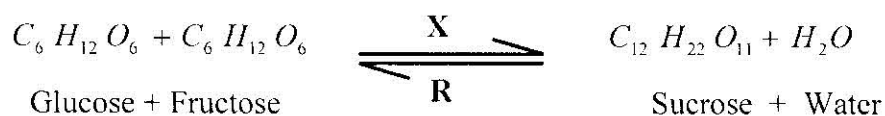..

19. a) What is the function of Sodium hydrogen Carbonate that is added to test solution of non-reducing sugar. (1mk)

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....

b) The equation below represents a process X which is controlled by enzymes .

$$C_6 H_{12} O_6 + C_6 H_{12} O_6 \underset{R}{\overset{X}{\rightleftharpoons}} C_{12} H_{22} O_{11} + H_2O$$

Glucose + Fructose   Sucrose + Water

i) Name the process X and enzyme R

Process X .... (1mk)

Enzyme R .... (1mk)

20. State the functions of the following apparatus (3mks)

a) Pit fall trap

....

....

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b) Pooter

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c) Bait trap

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21. State the importance of the following

a) Lysosomes (2mks)

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b) Centrioles (2mks)

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c) Ribosomes (1mk)

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22. State <u>THREE</u> properties of monosaccharides. (3mks)

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23.a) List three adaptations of red blood cells to their functions. (3mks)

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b) A patient with blood group B was involved in a road accident and needed a blood transfusion.

i) What is blood transfusion? (1mk)

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ii) State what one should consider before transfusion. (2mks)

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....

iii) Name the blood groups of the possible donors. (2mks)

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iv) Give a reason for your answer in (iii) above. (2mks)

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24. State **three** properties of the cell membrane. (3mks)

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