NAME.....CLS.....C.NO.....ADM.....

NYABURURU GIRLS' NATIONAL SCHOOL
OUR LADY OF LOURDES

DATE DONE.....

INVIGILATOR.....

DATE RETURNED.....

DATE REVISED.....

BIOLOGY
FORM TWO C.A.T. 2
TERM ONE 2016
TIME: 2 HOURS

INSTRUCTIONS.

- Write your name, class and class number in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above.
- Answer all the questions in the spaces provided.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 - 21	80	
TOTAL SCORE		

1. There are eight life processes common to all living things. Name the processes by which
   (a) Energy is released from food. (2 Mks)

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   (b) New organisms are produced.

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2. State the use of each of the following biological apparatus. (2 Mks)
   (a) A bait trap

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   (b) A fish net

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3. (a) Define the term Binomial nomenclature. (1 Mk)

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   (b) Distinguish between taxonomy and taxon. (2 Mks)

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   (c) State three reasons why it is necessary to classify living organisms. (3 Mks)

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4. State the organelle in which each of the following occurs. (3 Mks)
(i) Synthesis of lysosomes.

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(ii) Protein synthesis

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(iii) Synthesis of ribosomes

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5. A student observed the field of view below under a low power objective lens of a light microsope.

(a) Estimate the field of view above in millimeters. (1 Mk)

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(b) Calculate the field of view above in micrometres. (1 Mk)

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(c) After mounting a slide of onion epidermis using an eye piece lense of x10 and objective lense of x 10, the student observed the following cells.

(i) Calculate the length of one epidermal cell in micrometres. (2 Mks)

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(ii) Calculate the actual length of one epidermal cell in micrometres. (2 Mks)

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6. (a) What is cell specialization. (1 Mk)

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(b) Name three specialized plant cells. (3 Mks)

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7. State two adaptations of the cell membrane to its functions. (2 Mks)

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8. An experiment was set up as illustrated below. Study it carefully and answer the questions that follow.

Beaker

Water

Crystal of potassium permanganate

(a) Name the physiological process being investigated. (1 Mk)

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(b) State three roles of the above physiological process in plants. (3Mks)

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(c) Name three factors that affect the rate at which the physiological process named above occurs. (3Mks)

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(d) What is the significance of diffusion to plant pollination. (1 Mk)

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9. State the form in which carbohydrates are stored in the following. (2 Mks)

(i) Plant tissues

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(ii) Animal tissues

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10. State the biological significance of each of the following in the digestive system.

(a) Large food particles being broken down into smaller particles. (1 Mk)

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(b) Presence of a caecum in herbivores animals. (2 Mks)

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11. State two precautions which should be taken when storing a microscope after use. (2 Mks)

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12. (a) Name two end products of lipid digestion. (2 Mks)

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(b) State the vitamins required in each of the following cases. (3 Mks)

(i) Night vision

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(ii) Formation of strong bones and teeth.

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(iii) Blood clotting.

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13. (a) Define the term dental formula. (1 Mk)

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(b) Below is a dental formula of an organism;

$$i\frac{o}{3}\ C\frac{o}{1}\ pm\frac{3}{2}\ m\frac{3}{3}$$

(i) Work out the total number of teeth in the organism. (2 Mks)

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(ii) Giving a reason, state the diet of the organism. (2 Mks)

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14. The illustration below shows a biological process in mammals.

(a) Name the process P. (1 Mk)

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(b) Name the part of the human alimentary canal where the process occurs. (1 Mk)

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(c) State the biological significance of process P. (2 Mks)

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(d) Name the salts which aid in carrying out process P. (2 Mks)

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15. State three characteristics in the ileum that increases surface area for food absorption. (3 Mks)

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16. (a) What is cell physiology? (3 Mks)

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(b) State the property of cell membrane which: (2 Mks)

(i) allows selective movement of substances in and out of a cell.

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(ii) make it sensitive to temperature changes.

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17. State how each of the following features adapt a leaf for photosynthesis. (2 Mks)

(a) A lot of chloroplasts in palisade cells.

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(b) Large airspaces in spongy mesophyll.

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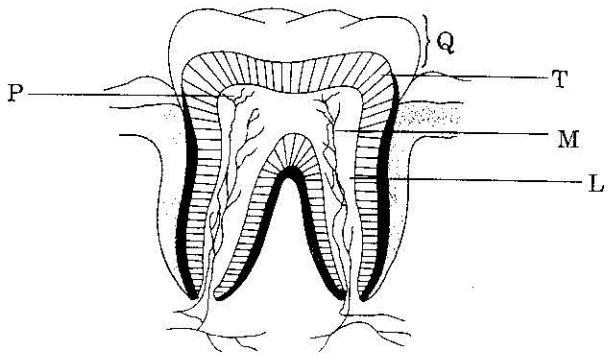
18. The diagram below represents a section through a human tooth.



(a) Giving a reason, identify the type of tooth represented. (2 Mks)

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Name the parts labelled (2 Mks)

Q .....

L .....

(b) State the functions of the part labelled M. (2 Mks)

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19. (a) State three functions of hydrochloric acid secreted by gastric glands in human alimentary canal. (3 Mks)

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(b) What is the role of roughage in human beings. (1 Mk)

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20. State three functions of roots. (3 Mks)

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21. Name four factors that determine energy requirement in human beings. (4 Mks)

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