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

SIGNATURE.....

NYABURURU GIRLS' NATIONAL SCHOOL
OUR LADY OF LOURDES

DATE DONE.....

INVIGILATOR.....

DATE RETURNED.....

DATE REVISED.....

BIOLOGY

FORM TWO

CAT ONE

TERM I 2017

TIME: 2HOURS

INSTRUCTIONS TO THE CANDIDATES:-

- 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.

For Examiner's Use Only

QUESTIONS	MAXIMUM SCORE	STUDENT SCORE
1- 24	80	

1. State the formula of linear magnification. (2mks)

2. State four principles used in Binomial nomenclature? (4mks)

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3. State the function of the following parts of a microscope.

a) Coarse adjustment knob (1mk)

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b) Fine adjustment knob (1mk)

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c) Condenser (1mk)

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4. While preparing a temporary slide to be observed under a light microscope, state the reasons for the following? (3mks)

a) Cutting thin sections

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b) Using sharp scalpel or razor blade

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c) Staining the section

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d) Putting the slice in water

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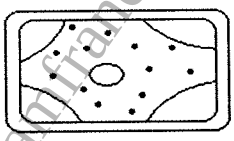
5. A student observed 60 cells a cross the diameter of field of view using a microscope whose diameter is 15mm. Calculate the diameter of one cell in micrometers (show your workings) 3mks

6. The diagram below represents a plant cell that had been placed in a certain solution.



(a) **What** term is used to describe the condition of the above cell? (1 mark)

.....

(b) **What** term is used to describe the solution to which the cell had been placed? (1 mark)

.....

(c) **Explain** why the cell did not lose its shape after the experiment. (1 mark)

.....

7. **State** the function of each of the following.

(i) Ribosomes. (1 mark)

.....

(ii) Mitochondria. (1 mark)

.....

(iii) Centrioles. (1 mark)

.....

8. **State** the role of each of the following in photosynthesis.

(a) Light. (1 mark)

.....

(b) Chlorophyll. (1 mark)

.....

9. In an electron microscope _____ is used to illuminate the specimen under observation. (1mk)

(i) Name the parts of a light microscope which perform each of the following functions. (2mks).

(ii) Controls the amount of light entering the specimen.

(iii) Magnifies the object.

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10. State the organelle used for the following functions. (3mks)

(i) Synthesis RNA (Ribonucleic acid)

(ii) Formation of cilia and flagella in cells where these structures occur

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(iii) Packages synthesized protein.

(d) Which organelle would be abundant in cardiac muscle? (1mk)

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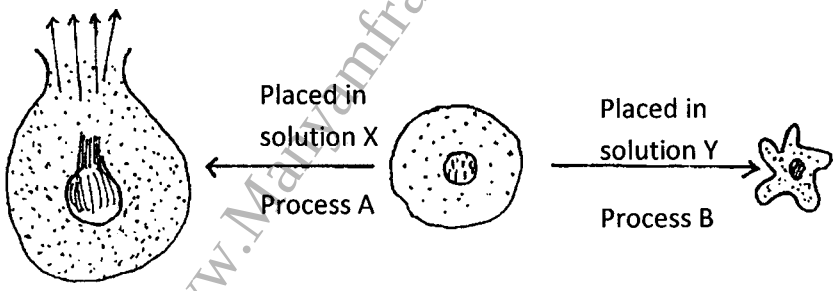
11. The diagrams below illustrate the behavior of Red Blood Cells when placed in two different solutions X and Y.



a) Suggest the nature of solutions X and Y. (2mks)

X .....

Y .....

b) Name the processes A and B (2mks)

A ……..

B ……

d) What would happen to normal blood cells if they were placed in an isotonic solution?

---------- (1mk)

12. State the function of each of the following organelles (2mks)

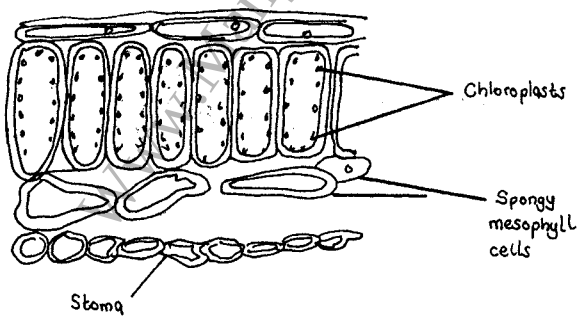
(a)Lysosomes

……

(b) Golgi apparatus

……

13. The figure below shows a section through a leaf. A leaf is designed for photosynthesis and this process provides a supply of simple sugars for a plant.



a) i) State two adaptations of the chloroplasts to photosynthesis. (2mks)

……

……

iii) Suggest the function of the stomata and the spaces between the spongy mesophyll cells in the process of photosynthesis. (2mks)

Stomata.....

Spaces.....

b) i) Name the tissue that translocates sugars from the leaves to other parts of the plant. (1mk)

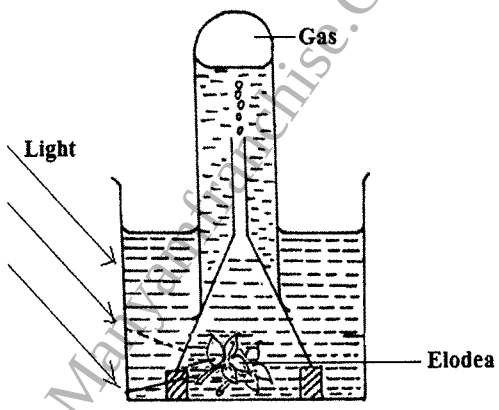
.....

ii) Name the mineral ion that is used to form chlorophyll. (1mk)

.....

14. Name the building blocks of lipids (2mks)

15. The diagram below represents a set up that was used to investigate a certain process in a plant.



(a) State the process that was being investigated. (1mk)

(b) .....

(c) What is the aim of the experiment? (1mk)

.....

(d) Give reasons why the following were used in the experiment (2mks)

.....

Glass funnel

.....

Wooden stand

.....

Water plant (Elodea)

Other than the factors shown, state two factors that would affect the process named in (a) above. (2 mark)

16. State three properties of proteins (3mks)

17. Name two types of enzyme inhibitors (2mks)

18. Outline two roles of active transport in human beings. (2mks)

19. State 3 differences between electron and light microscope (3mks)

20. State the importance of classifying organisms. (4mks)

21. Name the five kingdoms of classification. (5mks).

22. State the importance of diffusion in living organisms. (3mks)

23. Name the seven taxonomic units from the largest to the smallest (7mks)

24. Name two factors that decrease the rate of photosynthesis (2mks)