NAME:.....

ADM NO..... CLASS:.....

FORM 2

BIOLOGY EXAM

END OF TERM ONE 2019

TIME: 2 HOURS

Instructions to candidates,

1. Write your name and admission number in the spaces provided above.
2. Answer ALL the questions in section A, B and C in the spaces provided.

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	SCORE
A	1-7	20	
B	8-12	40	
C	13-14	40	
TOTAL		100	

SECTION A: (20MARKS)

1. Name the scientist who deal with the study if the following. (2mks)

   i). Microorganisms.

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   ii). Classification

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2. A form two student wrote the name of a Lion as PANTHERA LEO. Identify two mistakes done by the student and write the name correctly. 3mks)

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3. State the fate of the end products of photosynthesis. (4mks)

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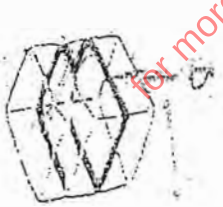
4. The cell below was obtained from an endodermis of a dicotyledonous root.



   i). Name the part labeled D. (1mk)

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   ii). What is its function. (1mk)

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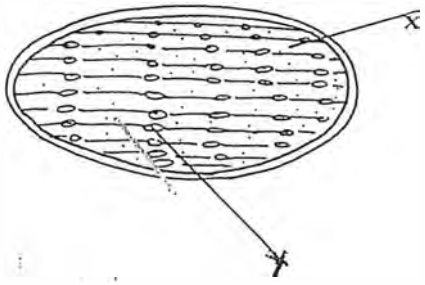
5. The diagram below shows a cell organelle.



i). Name the part labeled Y & X. (2mks)

Y.....

X.....

ii). State the function of the part labeled X. (1mk)

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6. a). State **two** effects of Hypertension. (2mks)

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b). State **one** way in which hypertension can be controlled. (1mk)

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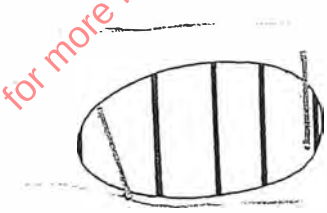
7. In an experiment to establish the size of an onion cell, a learner observed the following on a microscope field of view.



If the student counted 20 cells across the diameter of this field of view, calculate the size of one cell in micrometer? (3mks)

b). State **three** functions of blood other than transport. (3mks)

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c). State **two** ways in which the red blood cells are adapted to their functions. (2mks)

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d). Differentiate between active immunity and passive immunity. (2mks)

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10. In an experiment to investigate a factor affecting photosynthesis, a leaf of a potted plant which had been kept in the dark overnight was covered with aluminium foil as shown in the diagram below.

The set up was kept in sunlight for three hours after which a food test was carried out on the leaf.

a). Which food test was carried out? (1mk)

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b). i). State the results of the food test. (2mks)

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ii). Account for the results of the food test. (2mks)

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c). i). Why was the set up kept in the sunlight for 3 hours? (1mk)

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ii). Why was it necessary to keep the plant un the darkness before the start of the experiment. (1mk)

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d). State another factor that affects photosynthesis other than light. (1mk)

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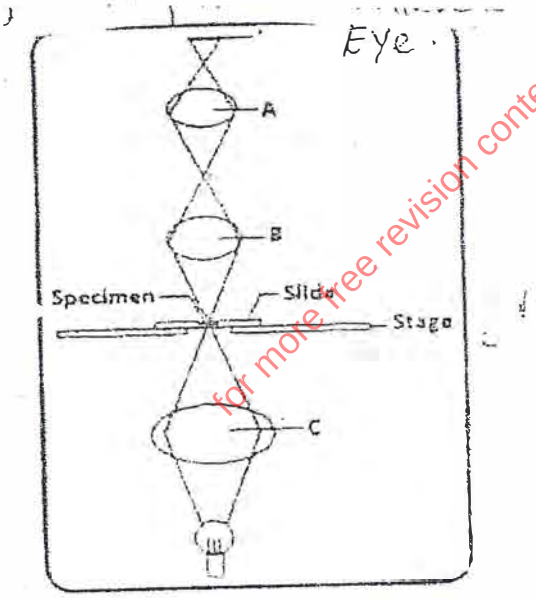
11. The diagram below shows the pathway taken by a light microscope.



a). Identify part marked A, B and C. (3mks)

A.....

B.....

C.....

b). State the function of each of the lenses A and C. (2mks)

A

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C

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c). Using an arrow show the position of the diaphragm. (1mk)

d). State the purpose of the following procedures during preparation of temporary slides. (2mks)

i). Staining

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ii). Cutting very thin sections

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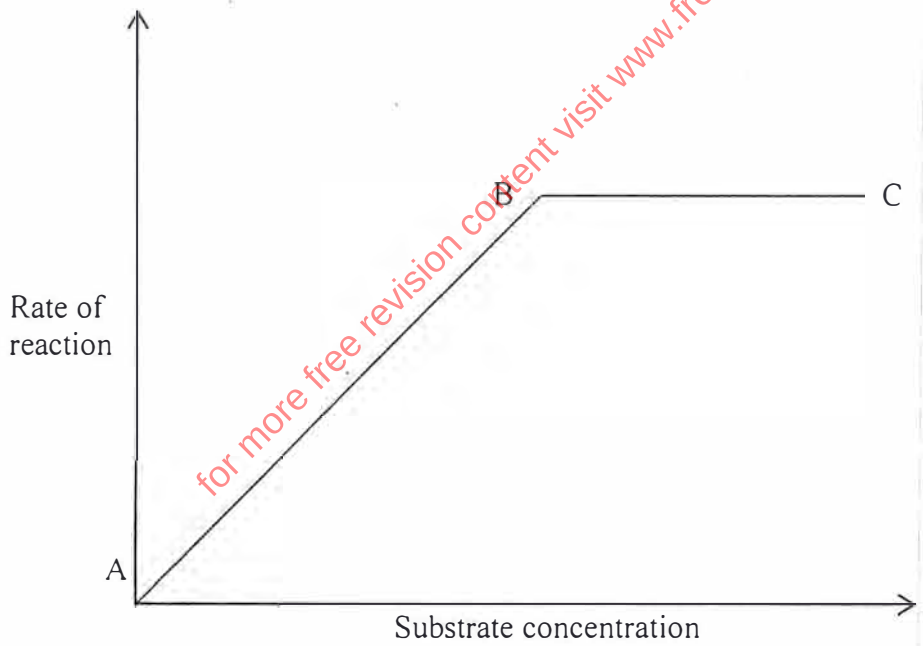
12. The graph below shows the effects of substrate concentration on the rate of enzyme reaction.



a) Account for the shape of the graph between

i). A and B (2mks)

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ii). B and C

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b). How can the rate of reaction be increased after point B. (1mk)

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c). State **three** other factors that affect enzyme controlled reactions. (3mks)

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SECTION C: (40MARKS)

13. The amount of water particles that moved across cell membrane was determine at various temperatures The data collected is as in the table below.

Temperature (°C)	0	5	10	15	20	25	30	35	40	45	50	55	60
Water particles that moved across a cell membrane	0	2	5	13	20	50	80	95	93	73	45	20	0

a). Draw a line graph to represent the amount of water particles that moved across the cell membrane against temperature. (6mks)

b). Account fort shape of the curve between

i). 20°C – 30°C (2mks)

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ii). 40°C – 60°C. (3mks)

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c). i). Name and define the process by which particles moved across the cell membrane. (2mks)

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ii). Other that the temperature, state and explain another factor that affect the rate of the process you name in c(i) above.

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d). i). If the water molecules were moving across the cell membrane into a plant cell, name the state at which the cell would be if it was at 35°C – 40°C for 20 minutes. (1mk)

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ii). State **two** forces that would be involved in the plant cell to result in the state of cells you name in d(i) above. (2mks)

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e). i). State what would be expected if animal cells were used in d (i) above instead of plant cells. (1mk)

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ii). Explain why plant cells behave differently from animal cells. (1mk)

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14. a). Describe the structural factors affecting transpiration. (10mks)

b). Describe the digestion of a starchy meal along the human alimentary canal. (10mks)

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