ZERAKI ACHIEVERS EXAM
TERM3 -2021
BIOLOGY PAPER (QUESTION PAPER)
FORM ONE (1)
TIME 2 HOURS

Name……Adm No……
School……Class……
Signature……Date……

INSTRUCTIONS TO CANDIDATES.

- Write your name and Adm. number in spaces provided above.
- Sign and write the date.
- Answer **ALL** the questions in the spaces provided.
- Answers must be written in the spaces provided in the question paper. Additional pages must not be inserted.
- This paper consists of 10 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY.

Questions	Maximum score	Candidate's score
1 - 28	80	

1. State the functions of the following organelles (3marks)

a) lysosomes

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b) Golgi apparatus

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c) Chloroplast

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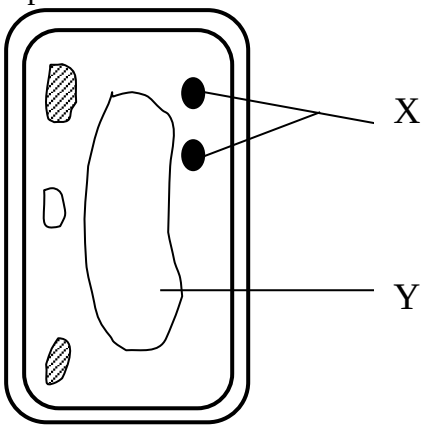
2. The diagram below represents a cell



a) Name the parts labeled X and Y

X .....

Y ..... (2marks)

b) State why the structures labeled X would be more on one side than the other side. (1mark)

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3. Write the role of the following parts of microscope. (2marks)

i) Mirror

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ii) Diaphragm

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4. Explain why plant cells do not burst when immersed in distilled water. (1mk)

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5. An experiment was carried out to investigate the rate of reaction shown below

Sucrose ⟶ Fructose +Glucose

For the products; Fructose and Glucose to be formed, it was found that substance K was to be added and the temperature maintained at 37^{o}C.When another substance L was added, the reaction slowed down and eventually stopped.

(a) Suggest the identity of the substances K and L

K .....

L ..... (2marks)

(b) Explain how substance L slowed down the reaction. (1mark)

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6. (a)State two roles of light in the process of photosynthesis. (2marks)

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(b) Name one product of dark phase reaction in photosynthesis. (1mark)

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7. A solution of sugarcane was boiled with hydrochloric acid; sodium carbonate was added; cooled and Benedict's solution was added then boiled. An orange precipitate was formed.

(a) Why was the solution boiled with hydrochloric acid? (1mark)

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(b) Why was sodium carbonate added? (1mark)

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(c) Name the type of reaction that takes place when simple sugars combine to form complex sugar. (1mark)

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8. (a)State two functions of bile juice in the digestion of food? (2marks)

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(b) How does substrate concentration affect the rate of enzyme reaction? (1mark)

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9. A certain animal has no incisors, no canines, six premolars and six molars in its upper jaw, in the lower jaw there are six incisors, two canines, six premolars and six molars. Write its dental formular? (2marks)

10. Name the physiological process by which gas exchange takes place at the respiratory surface of animal and plants. (1mark)

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11a) The action of ptyalin stops at the stomach. Give a reason. (1marks)

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b) State a factor that denatures enzymes (1mark)

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c) Name the features that increase the surface area of small intestines. (2marks)

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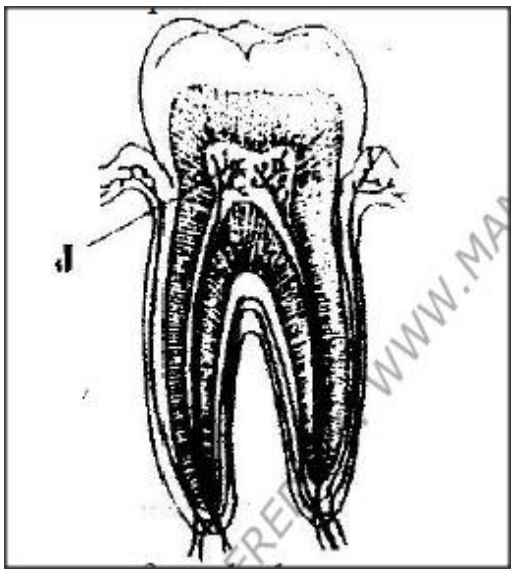
11. The diagram shown below shows a section through a human tooth.



a) i.) Identify the type of teeth.

..... (1mk)

ii.) Give a reason for your answer in 12(a) i) above. (1mk)

b) How is the part J important in the functioning of the tooth? (2mks)

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13. Name the functions of the following apparatus.

i.) Pitfall trap (1mk)

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ii.) Bait trap (1mk)

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14. State any two functions of lipids in the body. (2mks)

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15. The scientific name for cat is Canis Domestica.

i) Identify two mistakes made in writing the name above. (2mks)

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ii) State two reasons why latin language are preferred when writing the above name. (2mks)

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16. State two factors that increase the rate of photosynthesis. (2mks)

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17. Raymond observed eight epidermal cells across the field of a light microscope. If the diameter of the field of the field of view is 4mm, estimate the average size of each cell in micrometer. Show your working. (3mks)

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18. Give the reason for carrying out the following procedures when preparing wet mounts of plant tissues.

i.) Making very thin sections (1mk)

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ii.) Adding water on the plant section (1mk)

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iii.) Placing cover slip over the plant section (1mk)

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19. Give three roles of active transport in living organisms. (3mks)

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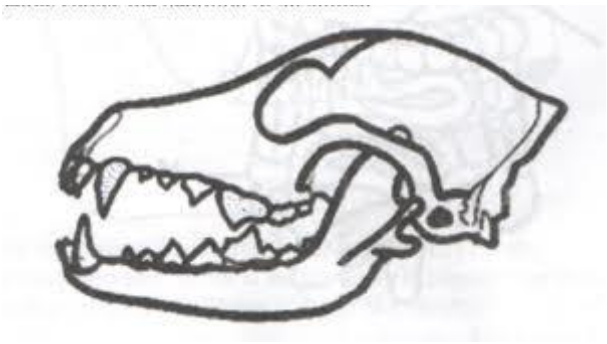
20. The diagram below represents the lower jaw of a mammal.



i.) Name the mode of nutrition of the mammal whose jaw is shown. (1mk)

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ii.) Give two observable reasons for your answer in 20 i.) above (2mks)

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iii.) Label the incisor tooth in the diagram. (1mk)

21. a) Define the term photosynthesis. (1mk)

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b) Name three photosynthetic cells in a leaf. (3mks)

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22. The diagram below shows what happens to red blood cells when it was put in a solution.

a) Name the type of solution in which the cell was put. (1mk)

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b) Name the process demonstrated in the diagram. (1mk)

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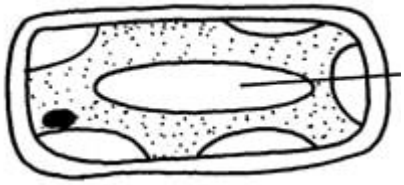
23. The cell shown below was obtained from a piece of potato that was immersed in 20% salt solution. Study it and answer the questions that follow.



i) Name the process shown in the diagram above. (1mk)

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ii) Account for the observation above. (3mk)

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24. Study the table below and answer the questions that follow.

	Sodium ion concentration	Iodide ion concentration
Sea water	250	35
Cell sap	100	550

a.) Identify the physiological process responsible for the absorption of the following substances through the roots of plants in this habitat:

i.) Sodium ion (1mk)

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ii.) Iodide ion (1mk)

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25. Give three enzymes that are produced in the small intestine. (3mks)

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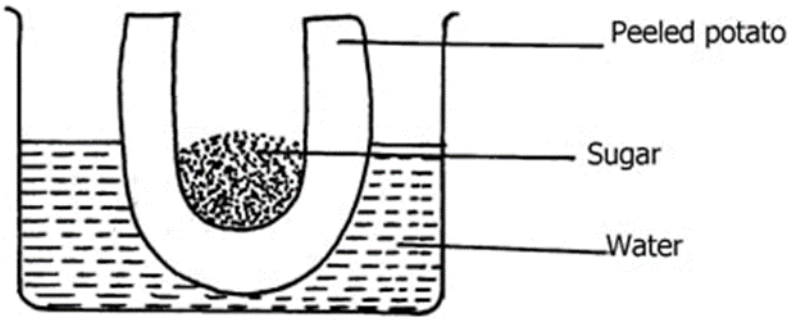
26. Name the mineral or vitamin necessary for the following; (3mks)

Blood clotting ……

Nerve impulse transmission ……

Night vision ……

27. An experiment was set-up as shown below and left for one hour



(a) State the expected result at the end of one hour (1mk)

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(b) Explain the observations made in this experiment. (2mks)

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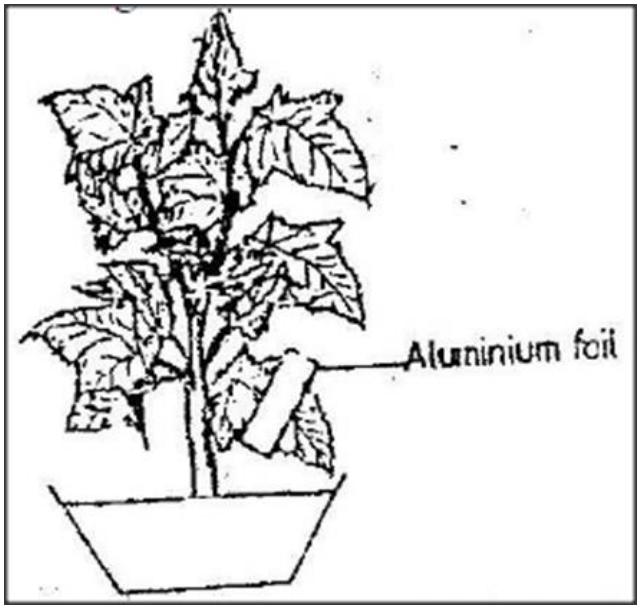
28. The diagram below shows a leaf of a growing plant partly covered with aluminium foil. The plant was placed in the sun from morning to midday and then tested for starch.



(a) What was the aim of the experiment? (1mk)

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(b) i.) State the observation made when the leaf was tested for starch (1mk)

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ii.) Account for the observation in 28 b(i) above. (2mks)

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