FORM 3 TERM 3 OPENER

BIOLOGY

PAPER 1

NAME…….. ADM NO…… CLASS……

BIOLOGY PAPER 1.

FORM 3.

TIME: 2 HOURS.

INSTRUCTION TO CANDIDATES:

Answer all the questions in the spaces provided.

All questions to be answered in English.

Read all questions carefully.

FOR EXAMINERS USE ONLY.

QUESTIONS.	MAXIMUM SCORE.	CANDIDATE SCORE.
1-30	80	

1.(a)State the use of a sweep net ’. (1 mark).

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……State two main branches of Biology. (2 marks).

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2. Name the organelle that performs each of the following functions in a cell.

(i) Protein synthesis. (1 mark).

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(ii) Transport of cell secretions. (1 mark).

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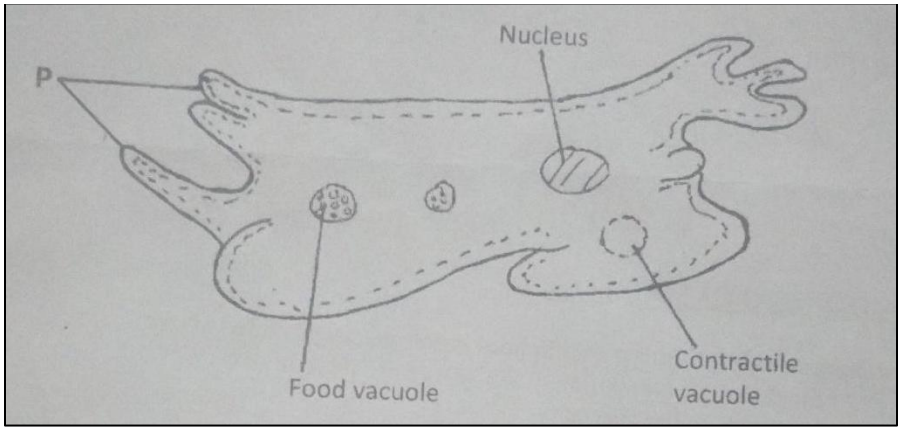
3. The diagram **below** represents a certain organism.



(a) Identify the kingdom to which the organism belongs. (1 mark).

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(b) Identify the part labeled **P.**

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(c) What is the function of contractile vacuole? (1 mark).

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4. Other than carbon (IV)oxide, name other products of anaerobic respiration. (2 marks).

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5. (a) Name the fluid that is produced by sebaceous glands. (1 mark).

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(b) State **one** functions of sweat in the human body. (1 mark).

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6. (a) State **two** characteristics that are used to divide the phylum Arthropoda into classes. (2 marks).

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(b) Name the class with the largest number of individuals in the phylum arthropoda. (1 mark).

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7. Why are people with blood group O referred to as universal donors? (1 mark).

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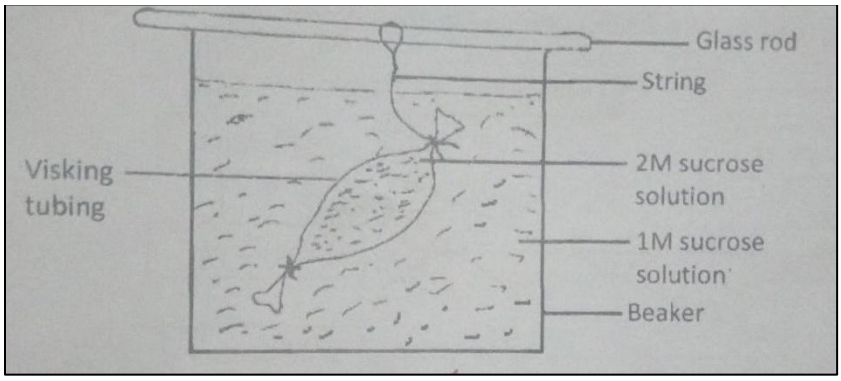
8. An experiment was set up as shown in the diagram **below.**



(a) Which process is being investigated by the above experiment? (1 mark).

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(b) State the expected results. (1 mark).

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(c) Explain your answer in (b) above.(2 marks).

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9. (a) What causes the following diseases? (1 mark).

(i) Diabetes mellitus.

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(ii) Diabetes insipidus.

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(b) How would you test that someone is a victim of Diabetes mellitus in the laboratory. (3 marks).

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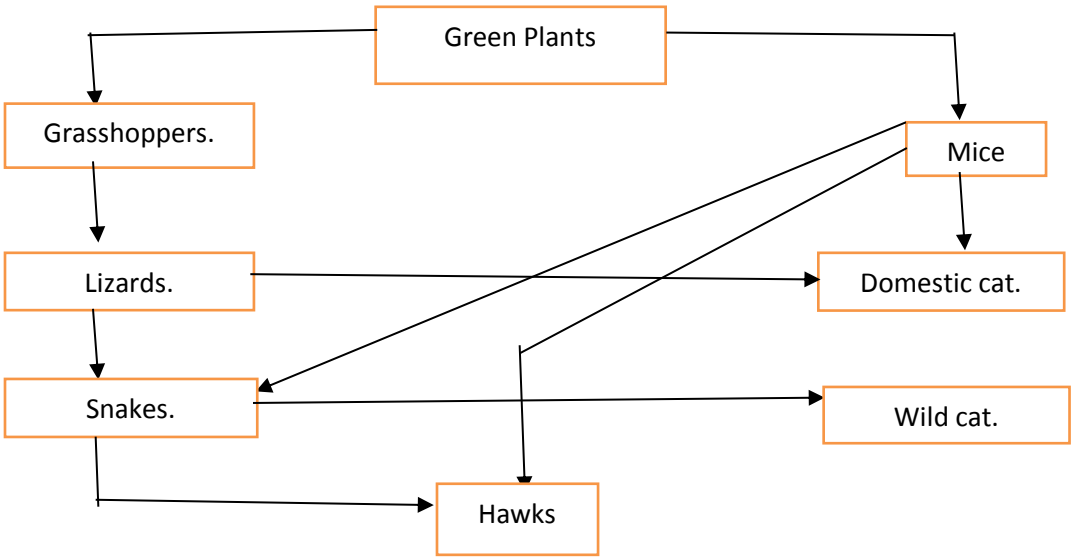
10. The following chart shows a feeding relationship in ecosystem.



(a) Construct **two** food chains ending with a tertiary consumer in each case. (2 marks).

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(b) Which organism has the largest variety of predators in food web? (1 mark).

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(c) Suggest **three** ways in which the ecosystem would be affected if there was prolonged drought.

(3 marks).

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11. Some of the fish found in Lake Victoria include;

- Tilapia zilli
- Lates niloticus
- Oreochromis niloticus
- Tilapia leucastica
- Tilapia variabilis

(a) From the names above, suggest which of the fish are most closely related. (3 marks).

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(b) Give a reason for your answer (1 mark).

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(c) Define the term species (1 mark).

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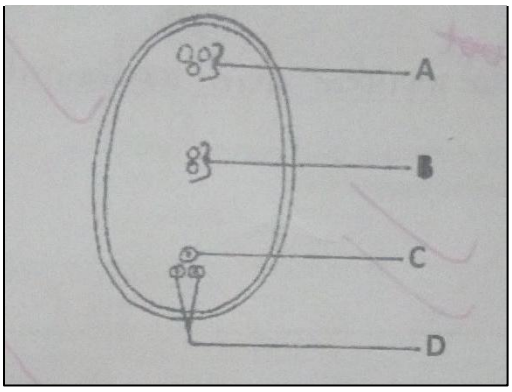
12. The diagram **below** shows a mature embryo sac of a flowering plant.



(a) Name the parts labelled **A** and **D**. (2 marks).

A……
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D……
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(b) What is the function of the structure labeled **B**. (1 mark).

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13. (a) Name the tissues that transport water in plants. (1 mark).

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(b) How is the tissue you named in (a) above strengthened? (1 mark).

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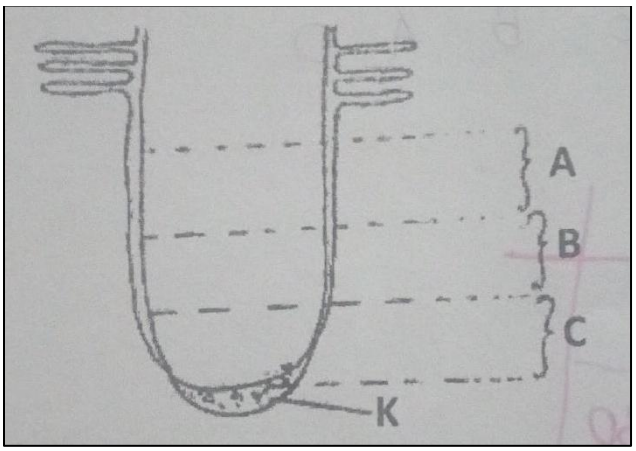
14. The diagram below shows regions of growth in a root. Study it and answer the questions that follow.



(a) Name the zones labelled. (3 marks).

A……
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B……
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C……
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(b) State the function of part **K.** (1 mark).

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15. The enzymes pepsin and trypsin are secreted in their inactive forms.

(a) Give the names of these inactive forms. (2 marks).

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(b) Why are they secreted in an inactive form? (1 mark).

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16.(a) A student drew 6cm long diagram of a plant flower. If the actual length of the flower was 12cm calculate the magnification of the drawing made by the student. (Show your working). (3 marks).

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(b) Name a vitamin and an ion important in blood clotting (2 marks).

Vitamin……
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Ion……
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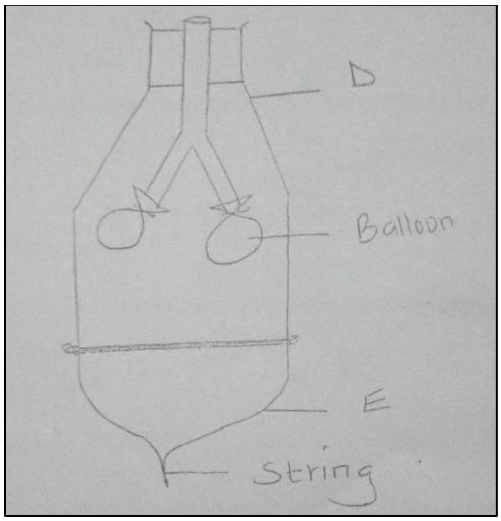
17. The diagram below represents a model used to demonstrate breathing in mammals. Study it and answer the questions that follow.



(a) Name the mammalian structure represented by the parts labelled **D** and **E**. (2 marks).

D……
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E……
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(b) State the observation made when the string is pulled downwards. (1 mark).

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(c) Explain the observation in (b) above. (2 marks).

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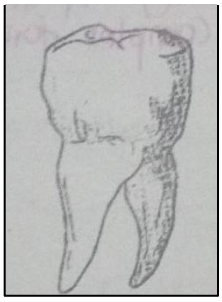
18. Study the diagram of the mammalian tooth **below** and answer the questions that follow.



(a) Identify the tooth. (1 mark).

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

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(c) State **one** adaptation of the tooth to its function. (1 mark).

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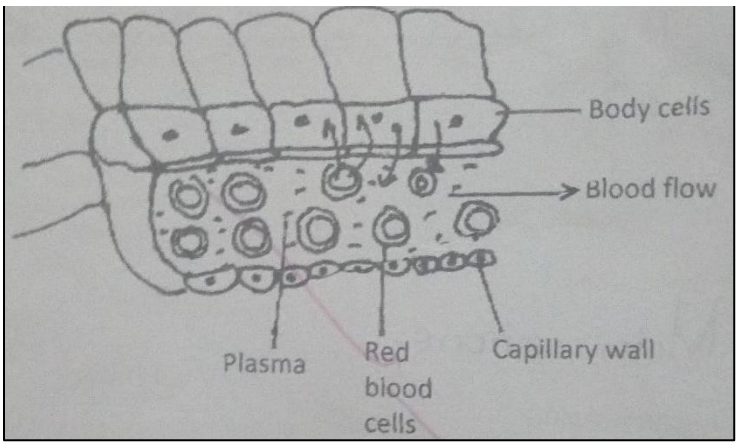
19. The diagram **below** shows gaseous exchange in tissues.



(a) Name the gas that diffuses.

(i) To the body cells…… (1 mark).

(ii) From body cells…… (1 mark).

(b) Which compound dissociates to release the gas named in (a)(i) above. (1 mark).

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(c) What is tissue fluid? (1 mark).

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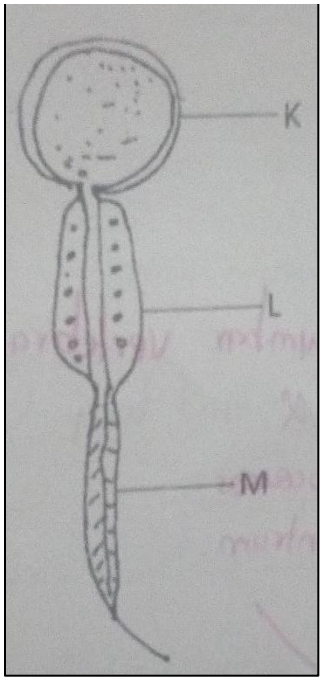
20. The diagram **below** represent one of the specialized cells found in the human body.



a) Identify the cell? (1 mark).

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b) What is the function of the cell? (2 marks).

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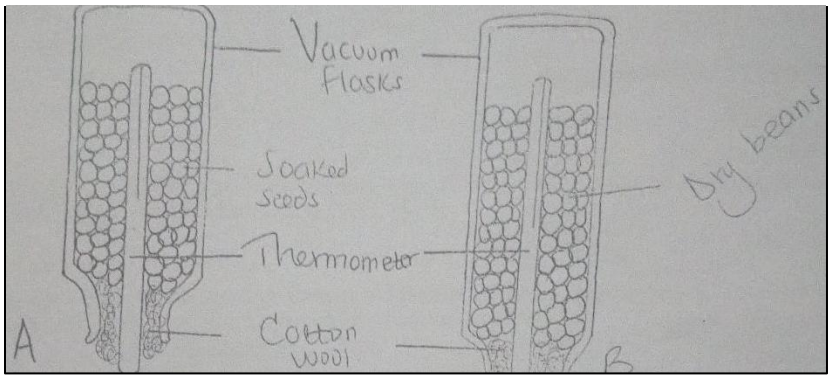
c) Name the parts labelled:

K……
…… (1 mark).

L…… …… (1 mark).

M…… …… (1 mark).

21. A student set up an experiment using soaked dry seeds as shown below.



(a) State the objective of this experiment (1mark)

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(b) State the observations made in each of the flasks after 24 hours (2marks)

Flask
A……
……..

Flask
B……
……..

(c) account for the observation made in flask **A** (2marks)

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(d) suggest why vacuum flasks were used in this experiment (1mark)

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22. The table provided below shows the concentration of sodium and iodine in sea water and cell sap of a plant

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

(a) i) Name the process through which the plant cells take up sodium ions (1 mark).

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

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(b) If the plant was sprayed with a chemical that inhibits respiration.

(i) Which of the two ions uptake will be affected? (1 mark).

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

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