

**PANGANI GIRLS SCHOOL**  
*Kenya Certificate of Secondary Education (K.C.S.E)*

**231/1**  
**BIOLOGY**  
**PAPER 1**  
**January 2020**  
**TIME: 2 HOURS**

Name..... Index No.....

**INSTRUCTIONS TO CANDIDATES**

1. Answer **ALL** the questions.
2. This paper consists of 26 questions

**FOR EXAMINERS USE ONLY**

QUESTION	MAX SCORE	CANDIDATE'S SCORE
1 – 26	80	

*This paper consists of 11 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.*

1. In what **two** ways does excretion differ between plants and animals? **(2marks)**

2. (a) Give **two** contributions made by Carolus Linneus to classification **(2marks)**

b) Classify Human being based on the **Order** and **Family** it belongs to? **(2marks)**

Order

Family

3. (a) State **two** functions of the plasma membrane? **(2marks)**

(b) Give the synthesis role of smooth endoplasmic reticulum. **(1mark)**

4. (a) Distinguish between Plasmolysis and turgidity **(2marks)**

5. Explain how the following factors affect active transport **(4marks)**

Oxygen concentration

Metabolic poisons

6. How is a palisade cell suited to carry out photosynthesis? **(3marks)**

7. (a) What is anaphylaxis **(1mark)**

(b) State the difference between active artificial acquired and active natural acquired immunity **(2marks)**

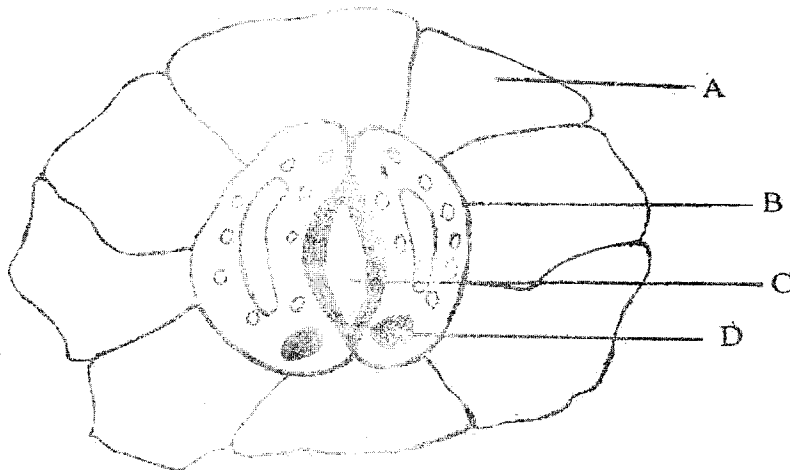
8. State how the following structural features affect transpiration **(3marks)**

Leaf fall

Sunken stomata

Thin cuticle

9. The diagram below represents a specialized plant structure



(a) Name the cells labelled A and B

(2marks)

A

B

(b) Describe the mechanism of closing of aperture C

(4marks)

10. Name the causative agent of whooping cough

(1mark)

11. State the economic importance of the following excretory products in plants (2marks)

Nicotine

Quinine

12. Give **three** distinguishing features of class Aves

(3marks)

13. State the functions of the following parts of a root: **(2marks)**

(a) Piliferous layer

(b) Endodermis

14. State the uses of the following plant excretory wastes: **(2marks)**

(a) Gum Arabica

(b) Tannins

15. Giving a reason in each case, name the class to which each of the following organisms belongs. **(4 marks)**

Bean plant

Reason

Bat

Reason

16. (a) What is a single circulatory system? **(1 mark)**

(b) Name an organism which has a single circulatory system. **(1 mark)**

(c) Name the opening to the chamber of the heart of an insect. **(1 mark)**

17. Herbivores have bacteria in their rumen and caecum that digest cellulose.

(a) What type of relationship is shown by the two organisms? **(1 mark)**

(b) State how each organism benefits from the relationship. **(2marks)**

(i) Bacteria

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(ii) Herbivore

18. State two function of each of the following hormones:

(4marks)

(a) Insulin

(b) Glucagon

19. State two differences in the roots of *Monocotyledonae* and *Dicotyledonae*?

(2marks)

<i>Monocotyledonae</i>	<i>Dicotyledonae</i>

20. Define the term:

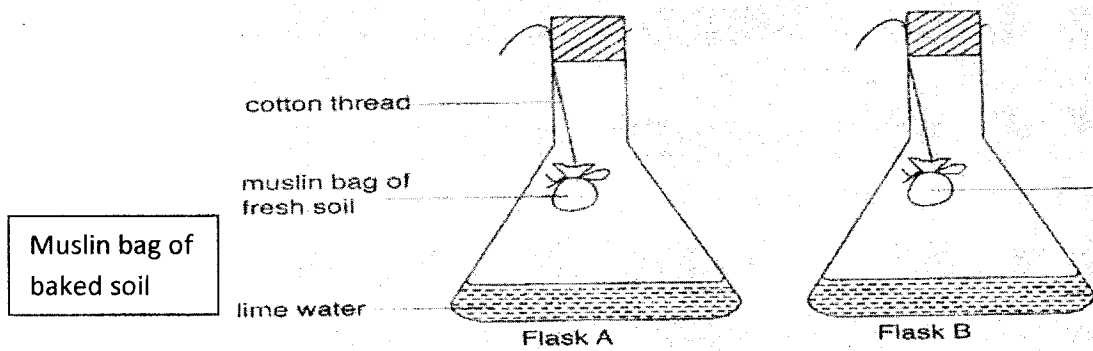
(2marks)

Greenhouse effect

Global warming

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21. Study the diagram and answer the questions that follow



(a) In which set-up did the lime water become turbid?

(1mark)

(b) Explain your answer in (a) above

(2marks)

22. State the **three** structural adaptations of the lungs in mammals

(3marks)

23. (a) Give **three** effects of over secretion of adrenaline?

(3marks)

24. (a) What is active transport?

(1 mark)

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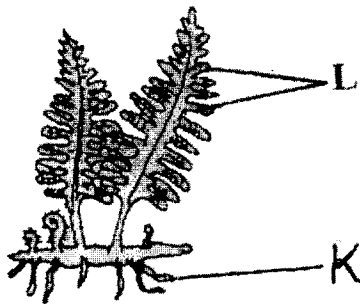
(b) State three factors that increase the rate of active transport.

(3 marks)

(c) Give four roles of active transport in living organisms.

(4 marks)

25. a) The diagram below shows a certain plant.



(i) Name the division in the kingdom Plantae to which the plant belongs. (1 mark)

(ii) State the functions of structure labelled K and L. (2 marks)

**K**

**L**

26. State two functions of an exoskeleton in members of the phylum Arthropoda. (2 marks)

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