

Name _____ Adm. No _____ Class _____

Index No. _____ Candidates Signature _____ Date _____

231/1
BIOLOGY
PAPER 1
JULY 2016
TIME: 2 HOURS



Kenya Certificate of Secondary Education
Mock Examinations
Biology
Paper 1
2 Hours.

Instructions to Candidates

- Write your name, index and Adm. Number and class in the spaces provided.
- Sign and write the date of examination in the space provided.
- Answer ALL questions in the spaces provided.
- This paper consists of 9 printed papers.

For Examiners Use Only

Question	Maximum score	Candidates score
1 - 27	80	
Total	80	

This paper consists of 9 printed pages. Candidates should check the question paper to ascertain that no pages are printed and that no question is missing.

1. State how each of the following parts of the mammalian ear are adapted to their function.

(a) Cochlea (2 marks)

.....

(b) Pinna (2 marks)

.....

2. Give two ways in which endotherms lose heat to the external environment. (2 marks)

.....

3. What is natural selection? (3 marks)

.....

4. State three evidences that support the theory of organic evolution. (3 marks)

.....

5. The table below shows description of sizes of glomeruli and renal tubules of two animals, which are living in different environments.

	Animal X	Animal Y
Glomeruli	Large and few	Small and many
Renal tubules	Short	Long

- (a) Name the likely environment in which each animal lives. (2 marks)

X:

Y:

- (b) Suggest the main nitrogenous waste produced by animal Y. (1 mark)

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6. A cell was found to have the following under a light microscope. Cell membrane, irregular in shape and very small vacuoles. Identify the type of cell above. (1 mark)
-
-
7. (a) State what would happen to a cell if its nucleus was removed. (1 mark)
-
-
- (b) Give the function of a nucleolus. (1 mark)
-
-
8. (a) Name the products of the light reaction stage. (2 marks)
-
-
- (b) State the site where the following stage of photosynthesis takes place. (2 marks)
- Dark stage
- Light stage
9. (a) Name two nutrients that do not require digestion before they are absorbed. (2 marks)
-
-
- (b) What is assimilation? (1 mark)
-
-
10. (a) Give a reason why the left ventricle muscles are thicker than the right ventricle muscles. (1 mark)
-
-
- (b) State one form in which carbon (IV) oxide is transported in blood. (1 mark)
-

11. Explain how the following adaptations reduce transpiration in xerophytes;
- (a) Sunken stomata. (2 marks)

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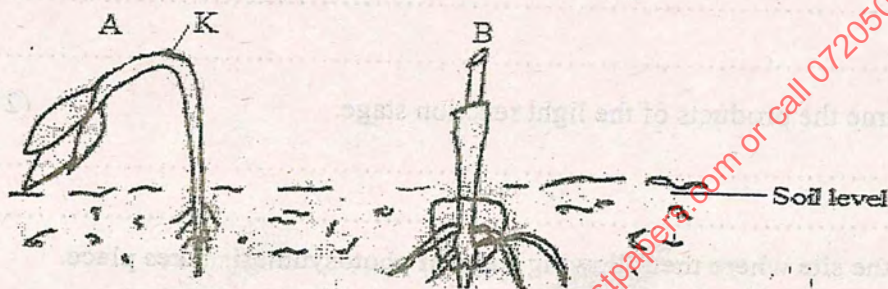
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- (b) Thick waxy cuticle (1 mark)

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12. The diagrams below represent a stage of growth in two different seeds.



Identify the type of germination exhibited by seedlings A and B and give a reason for each identity. (4 marks)

A

Reason.....

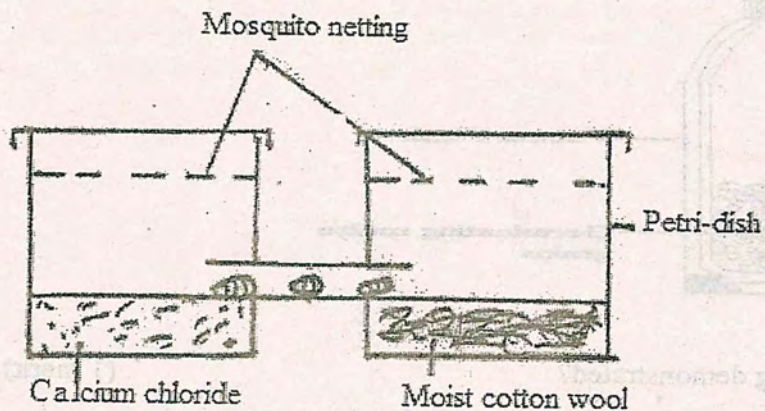
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B

Reason.....

.....

13. The following experiment was set up in a chamber made from two connected Petri dishes. Housefly maggots were introduced at the centre of the chamber, so the maggots could move to either Petri dish A or B as shown below.



- (a) Name the type of response being investigated in the set up. (1 mark)

- (b) State the survival value of the response named in (a) above.

(1 mark)

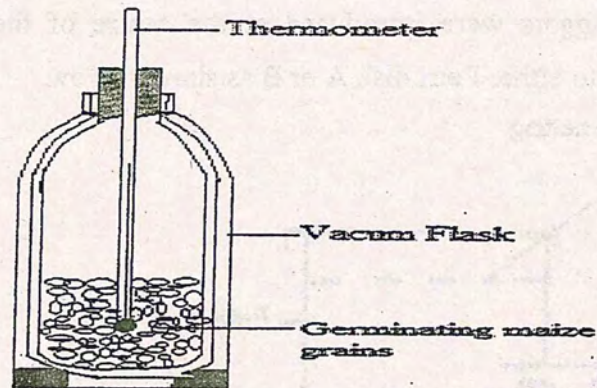
- (c) Give the role of calcium chloride in the experiment above. (1 mark)

14. (a) What is transpiration? (1 mark)

- (b) Give the importance of transpiration in green plants. (2 marks)

15. Distinguish between a habitat and an ecological niche. (2 marks)

16. The diagram below illustrates an experiment to demonstrate an aspect of germination.



- (a) What aspect is being demonstrated? (1 mark)
-
- (b) What observation would you expect to make after the experiment has run for 6 hours. (1 mark)
-
- (c) Explain the observations in (b) above. (2 marks)
-
17. (a) What is sex linkage? (2 marks)
-
- (b) Name two sex-linked characteristics in humans. (2 marks)
-
18. Name three mechanisms that hinder self-fertilization in flowering plants. (3 marks)
-
19. Explain why individuals with smaller sizes require more energy per kilogram of body weight than those with larger sizes? (3 marks)
-

20. State the importance of placenta and amniotic fluid during pregnancy.

-Placenta

(2 marks)

.....
.....
.....

-Amniotic fluid

(1 mark)

.....
.....

21. Distinguish between the two patterns of evolution:

(a) Divergent and convergent evolution.

(2 marks)

.....
.....
.....

(b) Why was Lamarks theory of evolution rejected?

(2 marks)

.....
.....

22. Name the meristematic tissues responsible for:

(a) Primary growth

(1 mark)

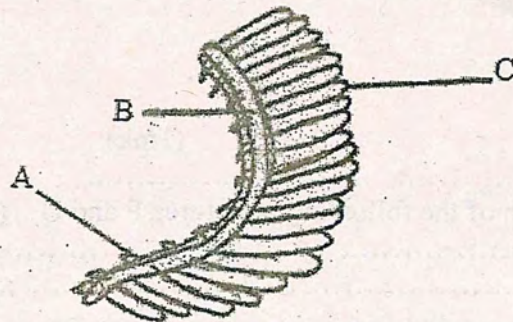
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(b) Secondary growth in plants

(1 mark)

.....

23. The diagram below represents an organ from a bony fish, study the diagram and answer the questions that follow.



(a) State the functions of structures labeled A and B

(2 marks)

A.....
.....

B.....
b) How is the structure labeled C adapted to its function? (1mk)

24. Give the functions of the following parts of a light microscope (2mks)

i) Objective lens

ii) Condenser

25. During estimation of cell sizes using a light microscope, a student found out the Diameter field of view to be 2.7mm and diameter of field of view had 9 cells. The Magnification was x50. Calculate the actual length of one cell in microns. (3mks)

26. State the functions of the following fins of a bony fish

i) Dorsal fin (2mks)

ii) Pelvic and pectoral fins (2mks)

27. The diagram below represents the anterior view of a vertebra study it and answer the questions that follow



a) i) Identify the vertebra (1mk)

Identify

ii) State the function of each of the following structures P and Q (2mks)

P

Q