

Name Adm No.

School Candidate's signature

Date

BIOLOGY

October/November 2015

Time 2 hours

KANDARA SUB COUNTY SECONDARY SCHOOLS

FORM TWO JOINT EVALUATION

Kenya Certificate of Secondary Education

BIOLOGY

Paper - 231

October/November 2015

Time: 2 hours

INSTRUCTIONS TO CANDIDATES

- This paper consists of two sections A and B
- Answer ALL the questions in both sections in the spaces provided.
- Check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing

EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	53	
B	47	
TOTAL	100	

*This paper consists of 8 printed pages
Candidates should check the question paper to ensure that all the
printed pages are printed as indicated and no questions are missing.*

1. Suggest a biological tool that is most suitable for collecting each of the following organisms from the field

- i) A scorpion.(1 mark)
- ii) A rat.....(1 mark)
- iii) Sea turtles.....(1 mark)

2. How do bile salts help in digestion. (1 mark)

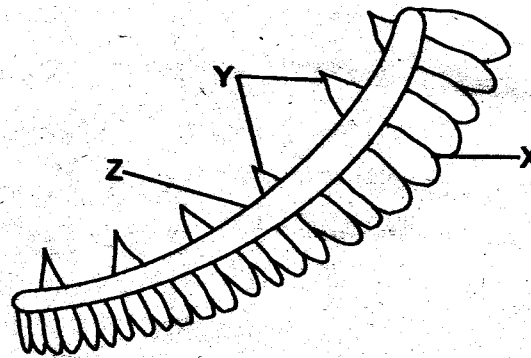
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3. Why is the wall of the left ventricle thicker than that of the right ventricle? (2 marks)

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4. The figure below shows the gill of a fish.



a) Name the parts labelled X and Y. (2 marks)

X Y

b) State the function of the part labelled Z. (1 mark)

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5.a) Why is it better to breathe through your nose than to breath through your mouth. (2 marks)

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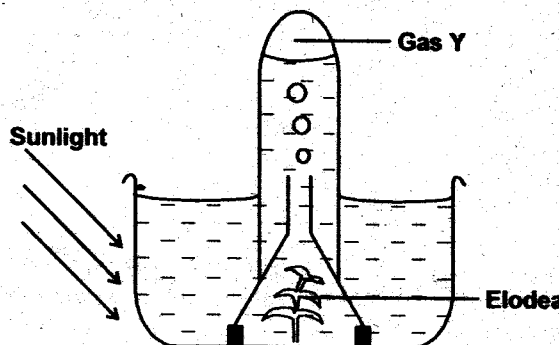
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b) Give two differences in composition between inhaled and exhaled air. (2 marks)

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6. The diagram below represents a set up that was used to investigate a certain process in a plant.



a) Name the process that was being investigated. (1 mark)

.....

b) Identify gas Y. (1 mark)

c) Other than the factors shown. State two factors that would affect the process named in (a) above. (2 marks)

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.....

7. State and explain the two types of respiration. (2 marks)

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.....

8. State two functions of the following hormones in homeostasis.

a) Insulin. (1 mark)

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b) Antidiuretic hormone (ADH) (1 mark)

.....

c) Aldosterone (1 mark)

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9.a) State atleast three rules used in binomial nomenclature. (3 marks)

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b) The scientific name Lantana camara refers to a green herbaceous plant. From the name Lantana camara, which name represents the:

i) Genus name ?.....(1 mark)

ii) Specific name?.....(1 mark)

10. State two importance of the process of photosynthesis. (2 marks)

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.....

11. Outline four adaptation; of the mammalian lung to the process of gaseous exchange. (4 marks)

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12. Explain the importance of the following procedures when preparing temporary slides for observation under light microscope.

a) Cutting very thin sections. (1 mark)

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b) Mounting the specimen on a drop of water. (1 mark)

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c) Heating slides gently after mounting the specimen. (1 mark)

.....

d) Staining the specimen. (1 mark)

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13. A student observing cells under low power lens of a microscope estimated the field of view to be 3.6mm. This length was occupied by 6 epithelium cells.

i) Convert 3.6mm to micrometers (μm) (1 mark)

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ii) Calculate the size of epithelium cells in micrometers show your working. (2 marks)

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14.a) Define an enzyme. (1 mark)

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b) State two properties of enzymes. (2 marks)

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15. State the significance of respiratory quotient. (2 marks)

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16. Name the branch of biology that deals with

i) Study of cells. (1 mark)

ii) Study of relationships between organisms, their environment and with each other. (1 mark)

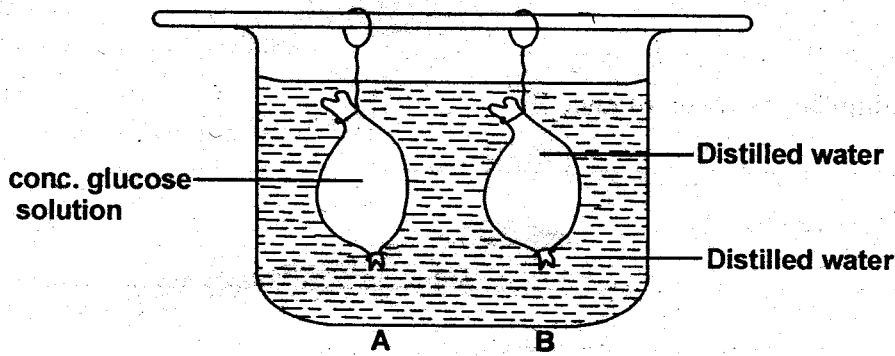
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17. Complete the table below by putting C for compatibility and an X for non-compatibility. (6 marks)

		DONOR			
		A	B	AB	O
RECIPIENT	A				
	B				
	AB			C	C
	O				C

SECTION B

18. An experiment to investigate osmosis was set up as shown below. Distilled water was put in a visking tube A and glucose solution in another visking tube B. Both visking tubes were then suspended in distilled water for six hours.



- a) State the observations which were made at the end of the experiment in the following:
- i) Visking tubing with glucose solution. (1 mark)
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 - ii) Visking tubing with distilled water. (1 mark)
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- b) After six hours, the water in the beaker was tested for the presence of glucose. Describe the simple test for glucose. (4 marks)

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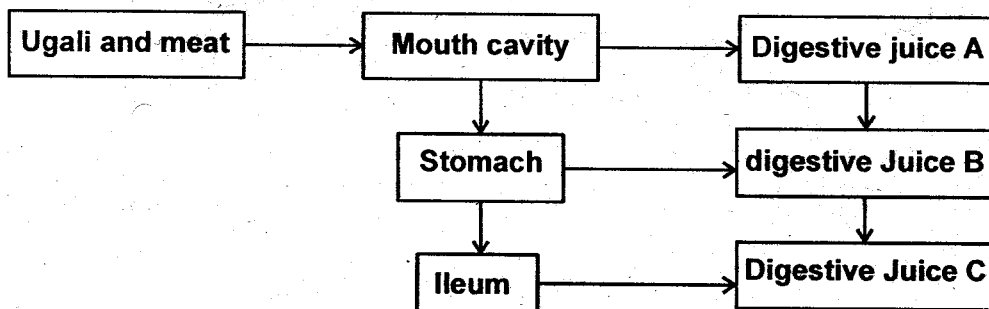
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19. The flow diagram represents passage of a meal through the human digestive system. Study the diagram and answer the questions the follow.



- a) Name the physical process that will occur in the mouth cavity. (1 mark)
-
- b) Name digestive juices B and C. (2 marks)
- B
- C

c) Explain two ways in which the digestive system is protected from corrosion of digestive juices. (2 marks)

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d) Name the hormone that stimulates secretion of juice B. (1 mark)

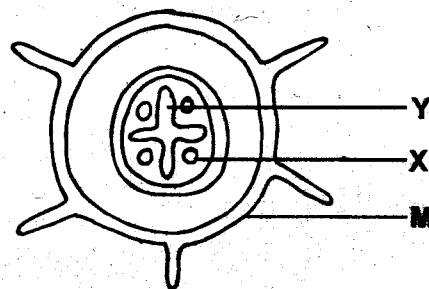
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c) Name two contents of digestive juice A. (2 marks)

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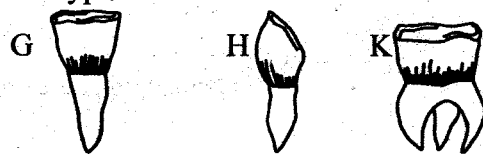
20. Study the transverse section of the stem below then answer the questions that follow.



a) Name the parts labelled X, Y and M and state their functions. (6 marks)

Part	Function
X	
Y	
M	

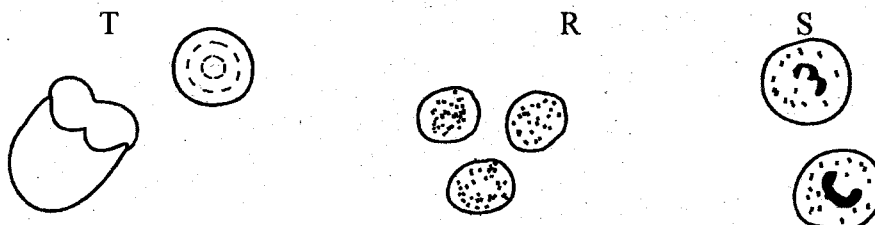
21. Study the different types of teeth below then answer the questions that follow.



Name teeth G, H and K and state their functions. (6 marks)

Teeth	Name of tooth	Function
G		
H		
K		

22. The figures below represent mammalian tissue seen under a light microscope.



a) Name the structures marked R, S and T. (3 marks)

R

S

T

b) Give a region in the body where T is formed. (1 mark)

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c) i) Give the function of S and R. (2 marks)

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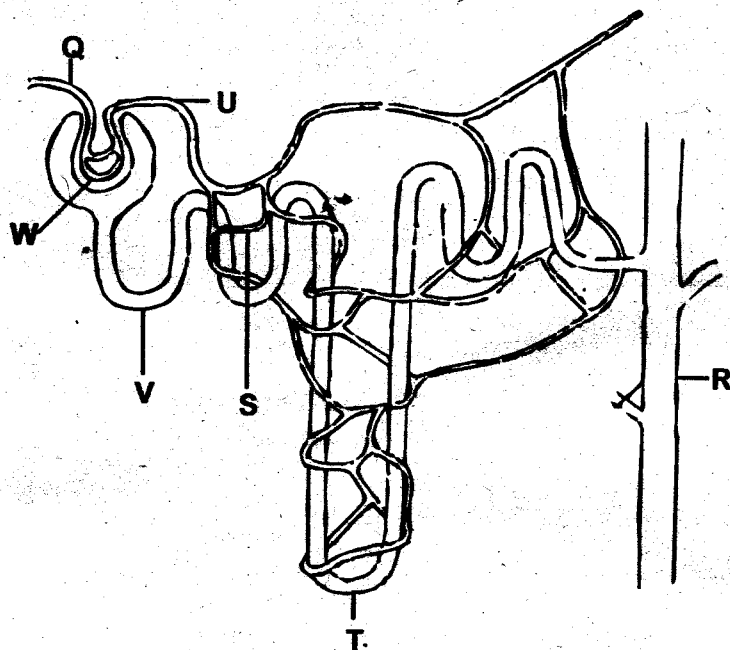
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ii) Explain how T is adapted to its functions. (2 marks)

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23. Study the diagram below then answer the questions that follow.



a) Name the structures marked Q, S, V and T. (3 marks)

Q

S

V

T

b) When some pressure is applied at W, a fluid appears at V. Name the fluid and state its contents. (2 marks)

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