**NAME ……………………………………………. ADM NO …………………………..**

**SCHOOL …………………………………………… SIGNATURE …………………..………**

**DATE ……..…………………...**

**231/1**

**BIOLOGY**

**PAPER 1**

**(Theory)**

**OCTOBER/NOVEMBER 2013**

**2 HOURS**

**KILUNGU DISTRICT FORM FOUR ENTRANCE EXAMINATIONS:**

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

**231/1**

**BIOLOGY**

**PAPER 1**

**(Theory)**

**OCTOBER/NOVEMBER 2013**

**2 HOURS**

**INSTRUCTIONS TO CANDIDATES:**

* Write your name and **ADM.** Number in the spaces provided above.
* Sign and write date of examination in the spaces provided above.
* Answer **ALL** questions in the spaces provided.
* All workings **must** be clearly shown where necessary.
* This paper consists of 8 [ Printed pages.

Candidates should check the question paper to ensure that all the papers are printed as indicated and no questions are missing

**FOR EXAMINERS USE ONLY:**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidates Score** |
| 1 – 30 | 80 |  |

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231/1

Biology (Theory)

Paper 1

1. Which organelle would be very abundant in:-

(a) Palisade cell (1 mark)

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(b) Sperm cell ( 1mark)

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2. Photosynthesis takes place in two stages. Name the part of the chloroplast where:-

(a) Light stage occurs (1 mark)

………………………………………………………………………………………………………………

(b) Dark stage occurs

………………………………………………………………………………………………………………

(c) How is dark stage dependant on the light stage of photosynthesis? (2 marks)

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3. Name the part of a flower that develops into:-

(a) Seed (1mark)

………………………………………………………………………………………………………………

(b) Fruit ( 1mark)

………………………………………………………………………………………………………………

4. State two reasons why fruit and seed dispersal is important to the plants. ( 2 marks)

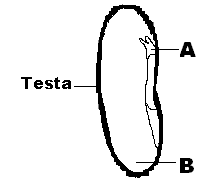
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5. Below is the internal structure of a bean seed.



(i) Name the parts labelled:- (2 marks)

A. ………………………………

B……………………………….

(ii) State the function of part B. (1 mark)

……………………………………………………………………………………………………………...

………………………………………………………………………………………………………………

(iii) State two differences between a bean seed and a maize grain. ( 2marks)

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6. State one disadvantage of taking a diet without roughage for many days. (1 mark)

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………………………………………………………………………………………………………………

7. The scientific name of a human being is **Homo** **Sapiens.**

(a) Name the above method of naming organisms. (1mark)

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………………………………………………………………………………………………………………

(b) Give two advantages of using the above method of naming organisms, instead of using vernacular

names. (3 marks)

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8. The equation below shows what happens in cellular respiration.

C6H12O6 + 6O2 6CO2 + 6H2O + Energy

1. Name the type of respiration shown and where it occurs in the cell. ( 2marks)

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1. Determine respiratory quotient of the process. ( 2marks)

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1. What food substrate is broken down in the above respiration? (1 mark)

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9. Explain how sweating helps in cooling the body during a hot day. (2 marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………...............

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10. Name the tissues in a dicotyledonous plant responsible for:-

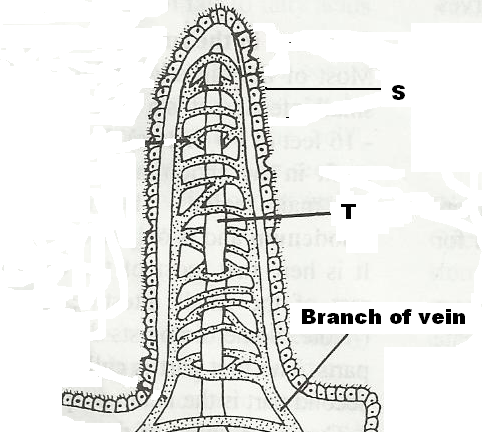
(i) Increase in length (1 mark)

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(ii) Increase in girth (1mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………...............

11. The diagram below represents the ileum lining.



1. Name the structure and its function. (2 marks)

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1. Name parts:-

S –

…………………………………………………………………………………………………………..

T ­–

…………………………………………………………………………………………………………

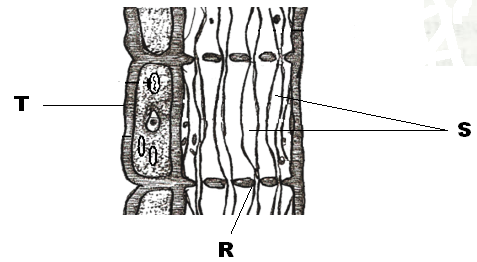
12. State three ways in which spread of HIV/AIDS can be controlled. (3 marks)

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13. Below is the structure of a phloem tissue.



1. (i) Name T \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 1mark)

(ii) Structure R (1mark)

1. State the function of structures S ( 1mark)

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1. Name one organelle abundant in structure T. ( 1mark)

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14. State any 3 properties of enzymes. (3 marks)

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15. (a) State one advantage of heterodonts over homodonts. (1 mark)

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1. Below is a dental formula of an organism

c pm m

(i) What is the total number of teeth in the organism? (1mark)

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(ii) Name the diet of the organism, and give one reason for your answer. (2 marks)

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16. (a) Give one difference between the term predators and parasites. ( 2 marks)

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(b) Name the causative agent of amoebic dysentry and state two ways that can be used to prevent the

disease.

Causative agent (1mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

Prevention (2 marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

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17. Complete the table below showing hormones, their site of production and the effect they have on the

animal or plant.

|  |  |  |
| --- | --- | --- |
| Name of hormone | Site of hormone production | Effect |
| (i) Follicle stimulating  hormone | Anterior pituitary gland |  |
| (ii) Auxins | Root apex and shoot apex |  |
| (iii) Gibberellins | All young plant tissues |  |

18. Complete the table below showing blood groups, antigens and antibodies in various blood groups.

|  |  |  |
| --- | --- | --- |
| Blood group | Antigen (on red blood cells) | Antibodies (in plasma) |
| A | A |  |
| B | B |  |
| AB |  |  |
| 0 | None |  |

19. State two differences between open and closed circulatory systems. (2 marks)

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20. Name two nutrients that are absorbed without being digested by enzymes in humans. (2 marks)

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21. What is the function of contractile vacuoles in amoeba?

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22. (a) Name the part of the microscope that holds the eye-piece and revolving nose-piece. (1mark)

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(b) How would you transport a microscope from one bench to another? (1mark)

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23. State three factors that affect the rate of diffusion. (3 marks)

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24. Name 3 sites of gaseous exchange in a frog. (3 marks)

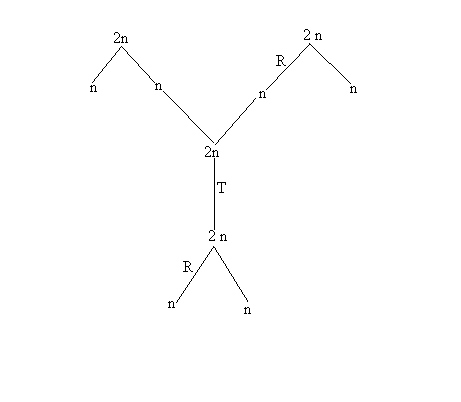
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25. How does nutrition as a characteristic differ in plants and animals? (2marks)

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26. Name two substances that are completely reabsorbed into the blood in the Nephrone. (2 marks)

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27. The chart below shows some cell divisions and the number of chromosomes involved.

1. What type of cell division occurs in;-

R………………………………………………………………………………………………… (1mark)

…………………………………………………………………………………………………………

T…………………………………………………………………………………………………..(1mark)

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1. State one significance of cell division T. (1 mark)

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…………………………………………………………………………………………………………