**NAME: ………………………………………………… INDEX NO: ………………….……………..**

**SCHOOL ………………………………………….……. DATE: ………………………….….…………**

**CANDIDATE’S SIGN..………………….……………**

**231/1**

**BIOLOGY**

**PAPER 1**

**OCT/NOV 2013**

**TIME: 2 HOURS**

***Kenya Certificate of Secondary Education***

 ***( Form Three)***

**BIOLOGY**

**Paper 1**

**Time: 2 Hours**

**INSTRUCTIONS TO CANDIDATES:**

* *Write* ***your name*** *and* ***Index Number*** *and* ***School*** *in the spaces provided above.*
* *Answer* ***all*** *the questions*
* *All answers* ***must*** *be written in the spaces provided in this booklet.*
* *Sign and write the date of examination in the spaces provided above.*
* *Additional pages must* ***not*** *be inserted*
* *Candidates should check the question paper to a certain that all the pages are printed as indicated and that no questions are missing.*

**EXAMINER’S USE ONLY**

|  |  |  |
| --- | --- | --- |
| **Question**  | **Maximum score** | **Candidates score**  |
| **1-28** | **80** |  |

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

1. Name the r of biology that deals with the following areas of study (2mks)
2. Inheritance and variation

……………………………………………………………………………………………….

……………………………………………………………………………………………….

1. Study of insects

……………………………………………………………………………………………….

……………………………………………………………………………………………….

1. The equation below shows a reaction that occurs in plants

 6 CO2 + 12H+ C6H12O6 + 3O2

1. Identify the process. (1mk)

……………………………………………………………………………………………….

……………………………………………………………………………………………….

1. In which part of the chloroplast does the process represented by the above reaction occur? (1mk)

……………………………………………………………………………………………….

……………………………………………………………………………………………….

1. Name **two** site of gaseous exchange in plants. (2mks)

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

1. Why is Saliva important in the breakdown of ingested food? (3mks)

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

1. List **two** surfaces were gaseous exchange occurs in Amphibians (2mks)

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

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

1. Explain **three** ways in which the mammalian erythrocytes are adapted to their function. (3mks)

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

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

1. The diagram below shows the changes in a cell when put in a solution **Z**



Vacuole

Before

After

Nucleus

Nucleus

1. Name the solution **Z**

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

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

1. Explain the observation at the end of the experiment. (3mks)

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

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

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

1. State the causative agents of the following diseases
2. Bilhazia (1mk)

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

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

1. Syphilis (1mk)

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

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

1. (a) Blood group **AB** is a universal recipient. Explain (1mk)

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

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

1. Describe the characteristics of blood group O+ve (2mks)

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

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

1. Name **three** factors that would slow down enzyme acitivity. (3mks)

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

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

1. The diagram represemts a cross-section obtained from a plant – use it to answer the questions that follow.

**A**

**B**

1. Identify the:
2. Class of the plant from which the section was obtained. (1mk)

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

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

1. Part of the plant from which the section was obtained. (1mk)

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

1. Give **two** reasons for your answer in a (ii) above. (2mks)

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

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

1. State the functions of the parts labeled **A** and **B**

**A** ……………………………………………………………………… (1mk)

**B** ……………………………………………………………………… (1mk)

12. Explain how sweating bring cooling effect of the body. (2mks)

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

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

13. (a) A molecule of lipid gives more energy than one molecule of glucose when respired

 aerobically but it is not always used a respired substrate give two reasons for this? (2mks)

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

 (b)Give the significance of respiratory quotient (RQ) (2mks)

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

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

14. Name the end products of light stage of photosynthesis that are used in dark stage. (2mks)

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

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

15. A certain organ W was surgically removed from a rat, late drastic in glucose level in the

blood was reported but when substances Q was injected into the animal the whole process was reversed.

 (a) Identify: ( 2mks)

(i) Organ W ……………………………………………………………………

ii) Substances Q ……………………………………………………………………

 (b)State the effect of substance Q on the body of this organism. (3mks)

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

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

16. State **two** roles of fallopian tube in mammalian reproductive system. (2mks)

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

17. (a) State **two** density dependent factors that affect population growth in an ecosystem. (2mks)

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

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

 (b) Name the instruments used in measuring the following parameters in a habitat.

 (i) Light penetration (1mk)

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

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

 (ii) Wind speed (1mk)

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

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

18. State the functions of the following organelles ( 2mks)

 a) Nucleolus

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

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

 b) Golgi apparatus

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

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

19. Give a reason why scientific names are given in latin. ( 1mk)

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

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

20. A group of Form one stundents observed 8 cells across the diameter of the filed of view of a

microscope, if the eyepiece lens magnification was x 5 and objective lens magnification was x 40, find the actual diameter of each cell given than the diameter of filed of view was 0.5 mm. Find the answer in micrometers. ( 3mks)

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21. State the role of the following plant excretory products; ( 2mks)

 (a) Quinine

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

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

 (b) Rubber

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

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

22. List **three** external conditions necessary for germination. ( 3mks)

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

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

23. State **three** features and mechanisms that winder self-pollination and self-fertilization in

 flowering plants. ( 3mks)

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

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

24. Explain why respiratory surfaces should be:

 (a) Moist ( 1mk)

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

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

 (b) Thin ( 1mk)

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

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

25. Give **one** importance of each of the following processes in living organisms. (3mks)

 (a) Locomotion

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

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

 (b) Irritability

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

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

 (c) Excretion

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26. State the characteristics of Kingdom Monera that are not found in other kingdoms. (3mks)

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27. List the components of carpel inplants. ( 3mks)

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28. Study the diagram below to answer the question that follow.



1. With a reason give the phylum and class to which the organism belong.

Phylum ( 1mk)

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

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Reason (1mk)

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

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

Class (1mk)

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

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

Reason ( 1mk)

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

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