**KASSU JOINT EXAMINATION TEST**

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

**231/1**

**BIOLOGY**

**PAPER 1**

**JUNE 2015**

**TIME: 2 HOURS**

**Name……………………………………………………………. Index No…………………..**

**School…………………………Candidate’s Sign…………………..Date………………………**

**INSTRUCTIONS TO CANDIDATES**

1. Answer **ALL** the questions.

2. This paper consists of 23 questions

**FOR EXAMINERS USE ONLY**

|  |  |  |
| --- | --- | --- |
| **QUESTION** | **MAX SCORE** | **CANDIDATE’S SCORE** |
| 1 – 23 | 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)**

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

1. (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 …………………………………………………………………………………………

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

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

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

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

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

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

…………………………………………………………………………………………………

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

Oxygen concentration

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

Metabolic poisons

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

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

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

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

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

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

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

…………………………………………………………………………………………………

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

Leaf fall

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

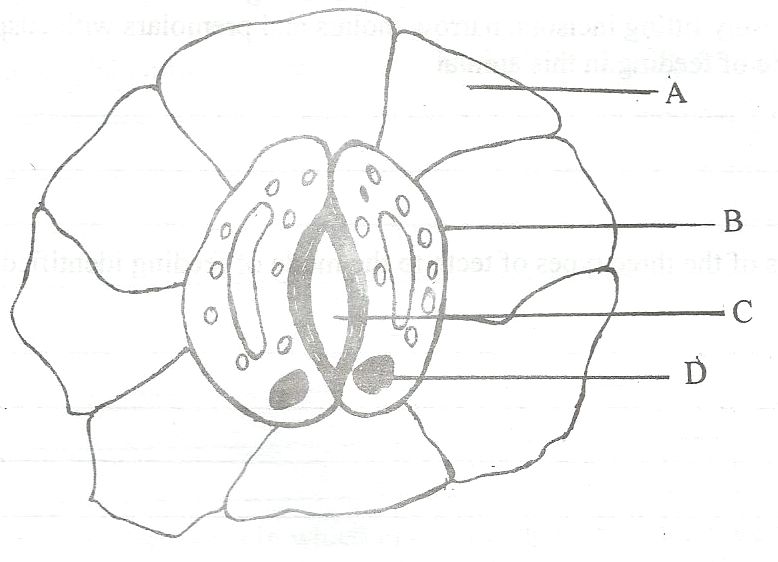
Sunken stomata

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

Thin cuticle

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

1. 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)**

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

1. Name the causative agent of whooping cough (**1mark)**

…………………………………………………………………………………………………

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

Nicotine …………………………………………………………………………………………………

Quinine

…………………………………………………………………………………………………

11. Give **three** distinguishing features of class Aves **(3marks)**

…………………………………………………………………………………………………

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

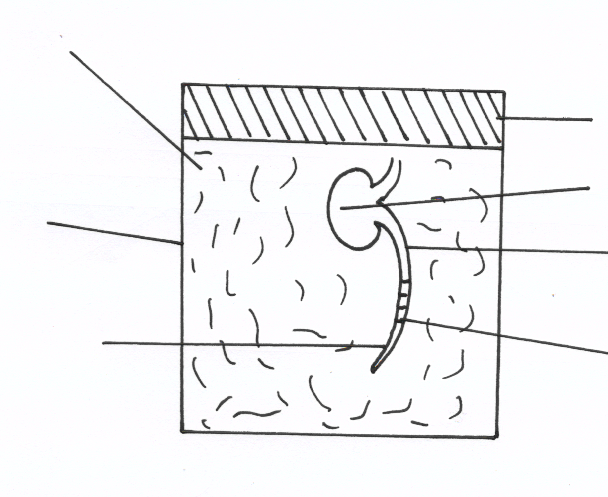
…………………………………………………………………………………………………

1. State two differences in the roots of ***Monocotyledonae*** and ***Dicotyledonae?*** (**2marks)**

|  |  |
| --- | --- |
| *Monocotyledonae* | *Dicotyledonae* |
|  |  |
|  |  |

1. A student set up an experiment as shown in the diagram below.

**Cotton wool**



**Cork**

**Cotyledons**

**Glass Container**

**Bean seedlings**

**Radicle**

**Marking**

a) (i) What was being investigated in the experiment? **(1mark)**

……………………………………………………………………………………………..

(ii) Draw a diagram to indicate the expected results of the experiment after three days.

**(2mks)**

(iii) Why was it necessary to have wet cotton wool in the container (**1mark)**

…………………………………………………………………………………………………

b) What is the role of the following in a germinating seed **(2 marks)**

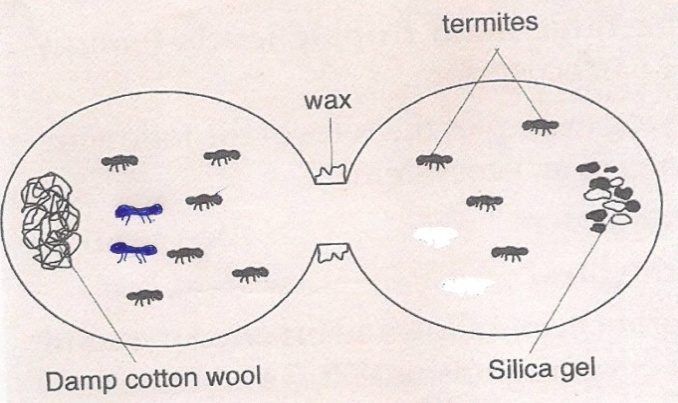
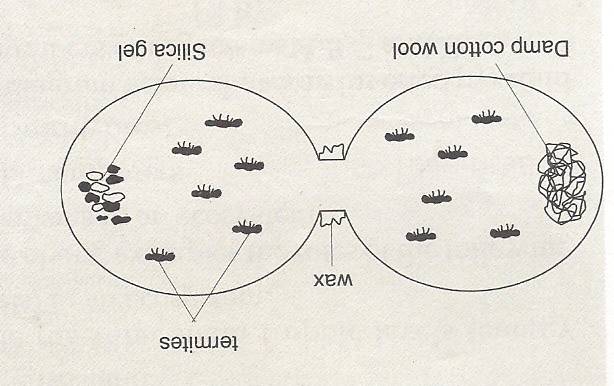
(i) Oxygen

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

(ii) Cotyledons

………………………………………………………………………………………………

1. The following set up was used in an experiment



**At the start of experiment at the end of experiment**

(a) State the function of the following in the set –up **(3 marks)**

i). damp cotton wool

………………………………………………………………………………………

ii) Silica gel.

………………………………………………………………………………………

iii) Wax

……………………………………………………………………………………

b) Deduce the condition that must be present in a termite habitat **(2 marks)**

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

1. (a) Give the importance of nitrogen cycle. **(1mark)**

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

(b)What are the roles of the following organisms in an ecosystem? **(2 marks)**

Decomposers

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

Detrivores

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

1. Define the term:

Greenhouse effect (**1mark)**

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

Global warming **(1mark)**

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

1. (a)What is organic evolution? **( 1mark)**

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

(b)Briefly explain how the peppered moth ***(Bistonbetularia***) shows natural selection

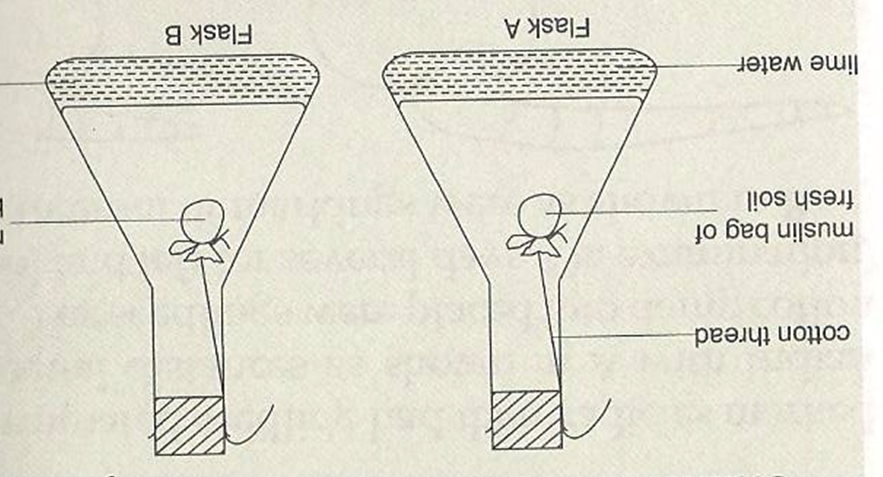
**(3marks)**

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

c) Distinguish between convergent and divergent evolution **(2 marks)**

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

1. Study the diagram and answer the questions that follow



Muslin bag of baked soil

(a) In which set-up did the lime water become turbid**? ( 1 mark)**

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

(b) Explain your answer in (a) above **( 2 marks)**

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

1. State the **three** structural adaptations of the lungs in mammals  **( 3marks)**

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

1. What are the roles of each of the following on transmission of impulses:**( 2 marks)**
2. Nodes of Ranvier

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

ii) Myelin Sheath

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

1. (a) Give **three** effects of over secretion of adrenaline**? ( 3 marks)**

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

…………………………………………………………………………………………………

21. (a) Define non disjunction? **(1 mark)**

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

(b) Name **two** genetic disorders of the blood**. (2marks)**

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

…………………………………………………………………………………………………

22. (a) How are female parts of wind pollinated flowers adapted to perform their function?

**(2marks)**

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………23. State how herbaceous plants obtain their support?  **(3marks)**

1. …………………………………………………………………………………………
2. ………………………………………………………………………………………
3. …………………………………………………………………………………………