NAME ---------------------------------------------------------------------INDEXNO-------------------------

DATE--------------------------

CANDIDATE SIGNATURE--------------

GATUNDU SOUTH SUB-COUNTY FORM FOUR 2015 EVALUATION EXAM

231/2

BIOLOGY

PAPER 2

(THEORY)

JULY /AUGUST 2015

2HRS

GATUNDU EVALUATION TEST

Instruction to candidates

* Write your name index number in the space provided above.
* This paper consist two sections ,A and B
* Answer all the questions in section A n the space provided.
* In section B answer question 6(compulsory) and either question 7or 8.

**For examiner’s use only.**

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| SECTION | QUESTION | MAXIMUM SCORE | CANDIDATES SCORE |
| A | 1  2  3  4  5 | 8  8  8  8  8 |  |
| B | 6  7  8 | 20  20  20 |  |

1. The genetic disorder hemophilia is due to a recessive sex linked gene .A man who is hemophilia maries a woman who is carrier for the condition .

a)Using letter H to represent the normal condition and letter h for the hemophiliac condition .

i)What is the genotype for the man and the woman ?(2mrks)

Man

Woman

ii) Work out a cross between the man and woman (3mrks)

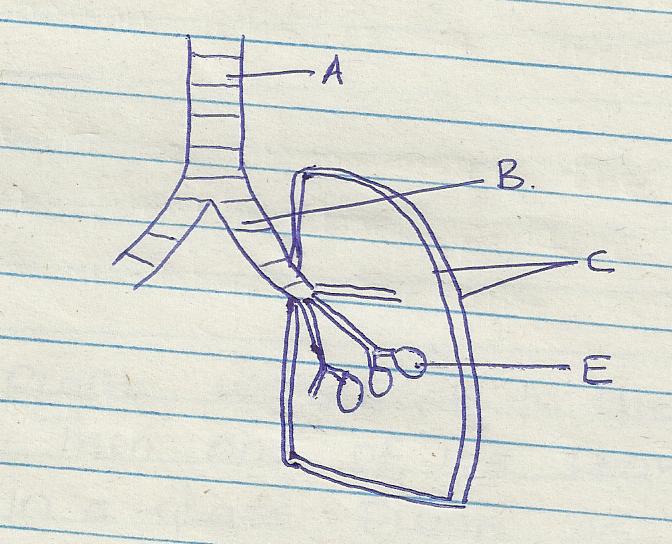
b) What is the chance that both the first and second sons will be hemophiliac?(2mrks)

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c) Hemophiliac is more common in males than in female human .Explain (1mrk)

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2. Study the diagram below and answer the questions that follow.



a)Name the part labeled A and B (2mrks)

A------

B-----

b) State the function of the part labeled C (2mrks)

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c) How is he part labeled E adapted to its function (2mrks)

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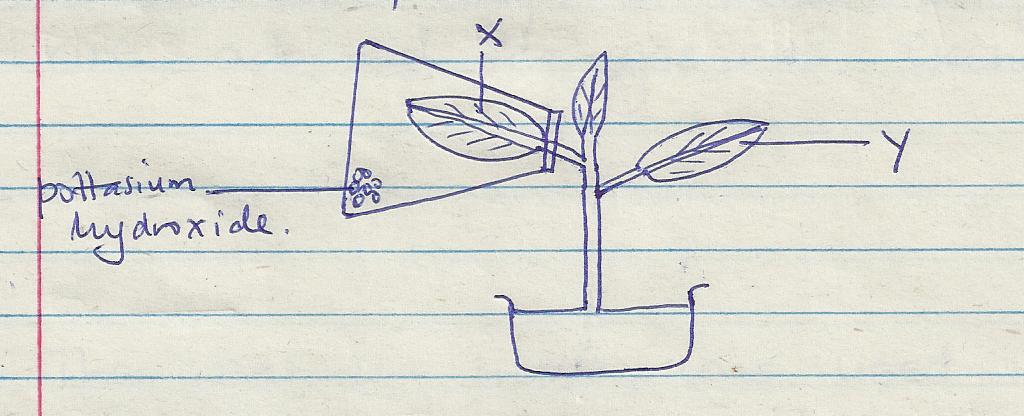
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d) Indentify the structure that perform the same function as one illustrated above in(2marks)

i) Amoeba ---

ii) Fish ----

3. A health plant was kept in the dark for 48 hrs .Then one of its leaves (x) was enclosed in a glass flask as down below .The whole plant was then returned to light



1. After 48 hrs the leaves were tested for starch .What observations do you expect .(2mrks)

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bi) What conclusions can you draw from this observation (1mrk ....................................................................................................................................................................................................................................................................................................................................

ii) Explain your conclusion in b(i) above (2mrks)

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1. Why was the plant kept in the dark for 48 hrs (1mrk?)

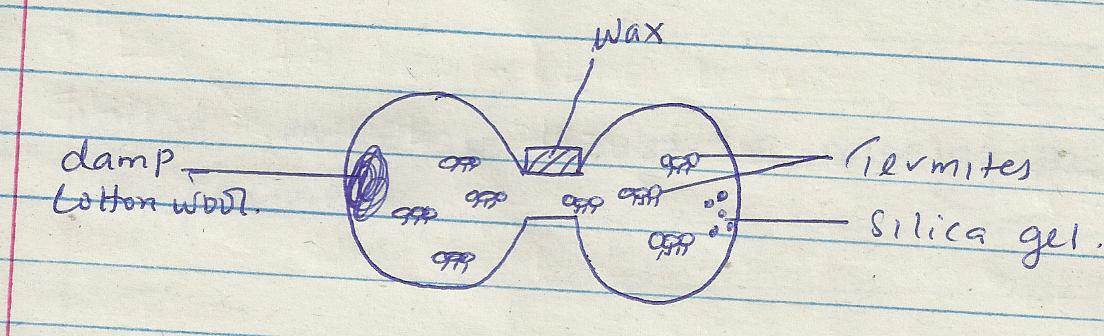
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1. State two ways in which the green leaves are adapted for gaseous exchange ((2mrks)

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4) The set up below was used to demonstrate a certain behavior of termites



a) State the function of the following in this experiment

i) Damp cotton wool (1mrk)

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ii) Silica gel (1mrk)

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Iii) Wax (1mrk)

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b) What result were obtained from this experiment after 12 hrs (1mrk)

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1. Account for the results in (b) above (1mrk)

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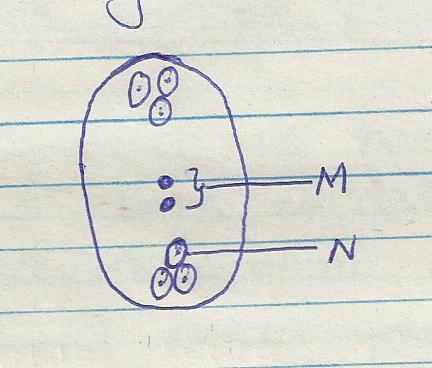
1. Name the type of response shown by termites (1mrk)

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1. What material wound is missing in a control experiment (2mrks)

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5 Below is a diagram of a structure found in plants



a (i) Indentify the structure (1mrk)

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(ii)Name the parts labeled M and N(2mrks)

M---

N----

b) Explain why cross pollination is more advantageous to a plant species than self –pollination (2mrks)

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c) Explain how double fertilization takes place in the above structure.(3mrks)

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**SECTION B;(40 MRKS)**

**Answer question 6(compulsory )and either question 7 or 8**

**in the space provide after question 8 .**

**6** An investigation of haemolysis of human red blood cell was carried out .Red blood cells were placed in sodium chloride solution and percentage of haemolysed cell established.

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| Sodium chloride conce .g/cm3(%) | 0.33 | 0.36 | 0.38 | 0.39 | 0.42 | 0.44 | 0.48 |
| Haemolysed red blood cells (%) | 100 | 91 | 82 | 69 | 30 | 15 | 0 |

A (i) Using the data above, plot a graph of haemolysed red blood cell against salt concentration (6mrks)

(ii) At what percentage of sodium chloride was the number of haemolysed cells equal to those that are

not haemolysed. ( 1mrk)

(iii) What is the percentage of cells haemolysed at salt concentration of 0.45 percent. (1 mark)

b) Account for the result obtained at

(i)0.33% salt concentration (2mrks)

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(ii) 0.48% salt concentration (2mrks)

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iii) Suppose the red blood cells were placed in 0.50%salt concentration .Explain what would happen (2mrks)

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c (i)Distinguish between lymphocytes and phagocytes (2mrks)

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(ii) State two ways in which white blood cells defend the body against infections. (2 marks)

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d) State two adaption of red blood (2mrks)

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7 a) Explain the role of the following hormones in growth and development of plants.

1. Auxins (4mrks)

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1. (ii)Gibberellins (4mrks)

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8 Explain the adaptation of the small intestine to their functions.(20mrks)

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