

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.

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

1. The genetic disorder hemophilia is due to a recessive sex linked gene .A man who is hemophilia marries 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)

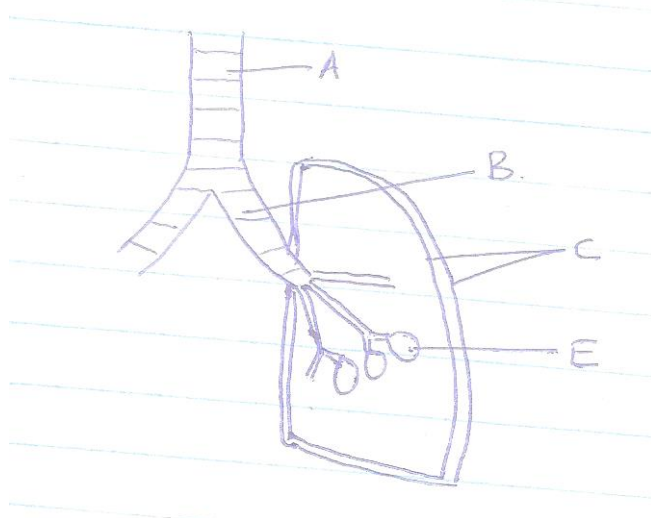
b) What is the chance that both the first and second sons will be hemophiliac?(2mrks)

.....
.....

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

.....
.....

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)

.....
.....

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

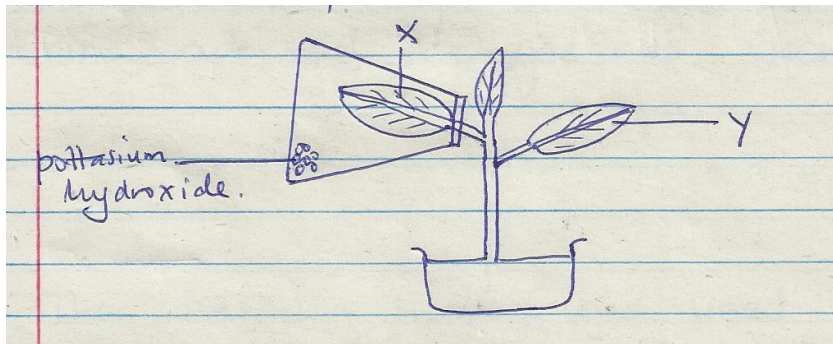
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d) Identify the structure that perform the same function as one illustrated above in (2marks)

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 shown below .The whole plant was then returned to light



a) 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)

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.....

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

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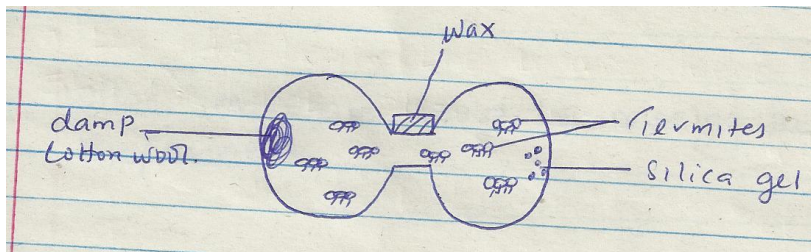
b) Why was the plant kept in the dark for 48 hrs (1mrk?)

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

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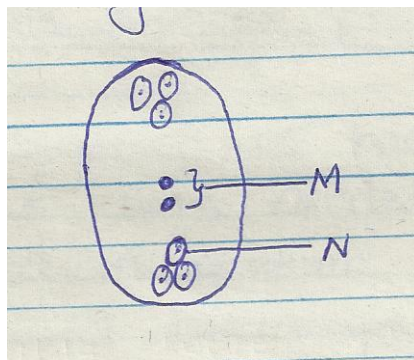
d) Name the type of response shown by termites (1mrk)

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.....

e) What material would be missing in a control experiment (2mrks)

.....
.....

5 Below is a diagram of a structure found in plants



a (i) Identify 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.

Sodium chloride conce .g/cm ³ (%)	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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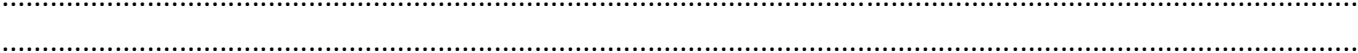
d) State two adaption of red blood (2mrks)

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

(i) Auxins (4mrks)

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GATUNDU FORM 4 EVALUATION EXAM

BIOLOGY PRACTICAL 231/3

MARKING SCHEME

1 .A) Angiospermae/angiospermaphyta/angiospermatophyta;

B) Presence of the flower; presence of veins;

C) Insect;

D) –conspicuous/brightly coloured /coloured petals, sepals;

-Tubular corolla/stamen and pistil enclosed in a tube;

-Landing stage/corolla platform;

E) –Dicotyledonae; rej dicotyledon, dicotylendon

F)- Net/ reticulate /net venation;

-5 petals/5 sepals

-floral parts arranged in fives/multiples of five;

G) –Sticky in order to hold the pollen grains;

-located inside the flower to ensure good contact with the insect ;

2.(i) Arthropoda;

(ii) X- Arachnida;

Y- Insecta;

Z- Crustacea;

(iii)- Useful in plant pollination;

-Produce edible food eg. Honey and royal jelly;

(iv) –Transmits disease causing organisms/disease vector;

-Sucks blood hence can cause anemia;

(any three)

-Bites on animals destroy the quality of hides and skins;

-Wounds created become avenues for secondary bacterial infection;

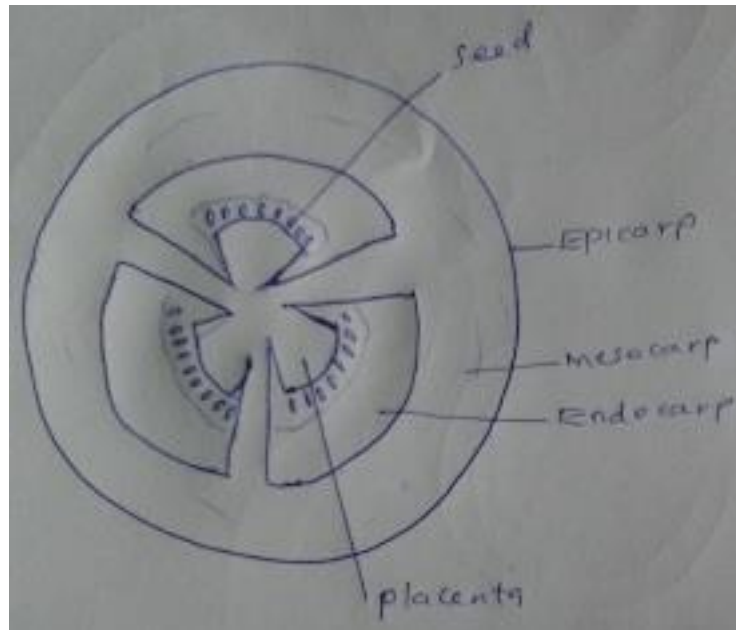
(v) a) Flight;.....presence of wings;

b) Walking;.....presence of legs;

3 (i) Fruit;

(ii) Presence of two scars;

(iii) Award one mark for a well drawn unaided diagram; and two marks for labels.



(iv) Axile;

(iv) Agent....animal / animals rej specific animal.

Reason.....brightly coloured to attract animals

Fleshy/juicy/succulent to attract animals

Food/test	Procedure	observations	Conclusion
Starch;	To food add iodine;	No colour change/colour of iodine remains;. Rej no change.	Starch absent;
Reducing sugars;	To food add benedicts solution and heat;	Colour changes to green-yellow-orange-brown; rej. Red.	Reducing sugars present;
Vitamin c/ascorbic acid;	To DCPIP add food;	DCPIP is decolourised;	Vitamin c/ascorbic acid present;

NB .Award half mark for test, procedure , observations and conclusion.