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

SCHOOL…………………………………………………..STREAM………………………

231/2

BIOLOGY

PAPER 2

JAN/FEB 2013

TIME 2HRS

BUNYORE-MARANDA JOINT EXAMINATIONS 2013

BIOLOGY

231/2

PAPER 2

2 HOURS

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in section A. In Section B answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8.

SECTION	QUESTION	MAX. SCORE	CANDIDATE'S SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
TOTAL		30	

1. A climbing plant twines around the stem of a tall tree.
   a. (i) Name the type of response exhibited by the climbing stem (1mk)

   ....

   (ii) Explain how the response named in a (i)n above takes place (3mks)

   ....

   ....

   ....

   b. An experiment was carried out to investigate the response of white termites to a certain stimulus. Ten termites were placed at the centre of glass tubing. Calcium chloride was placed at one end of the tubing and moist cotton wool at the other end as illustrated below.
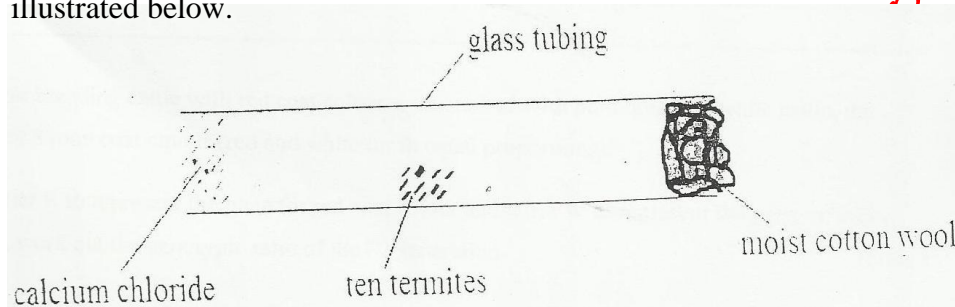
   (i) What observations are made after 20 minutes? (1mk)

   ....

   ....

   (ii) What type of response is exhibited by the termites? (1mk)

   ....

   (iii) What is the survival of the above response? (1mk

   ....

   ....

   (iv) Draw an experimental setup that would act as a control for the above experiment.
   (1mk)

2. When pure breeding cattle with red coat colour were crossed with pure white cattle, the offspring had a roan coat colour (re and white fur in equal proportions).
   a. Using letter R to represent the gene for red coat colour and letter W to represent the gen for white coat colour, work out the genotypic ratio of the F2 generation. (5mks)
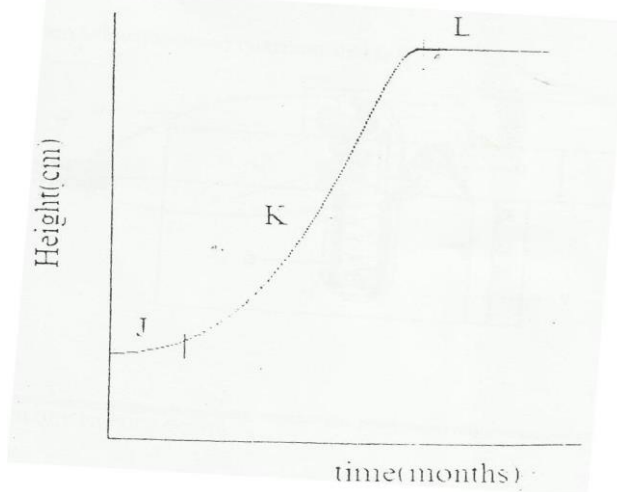
b. State the phenotypic ratio of F2 (1mk)

....

c. (i) Name the term used when two allies in heterozygous state are fully expressed phenotypically in an organism. (1mk)

....

(ii) Give an example of a trait in human being where the condition whose term is named in c (i) above expresses itself.

....

3. The graph below represents growth of an herbaceous plant over a period of time

(a) What happens at each of the sections J, K and L? (3mks)

....

....

....

(b) State three environmental factors that affect the growth at all sections (3mks)

....

....

....
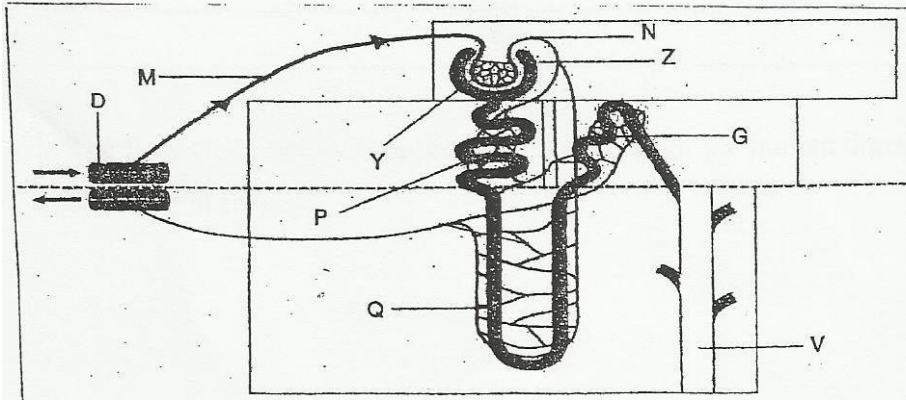
c. Other than height, state two other methods used to measure growth in herbaceous plants (2mks)

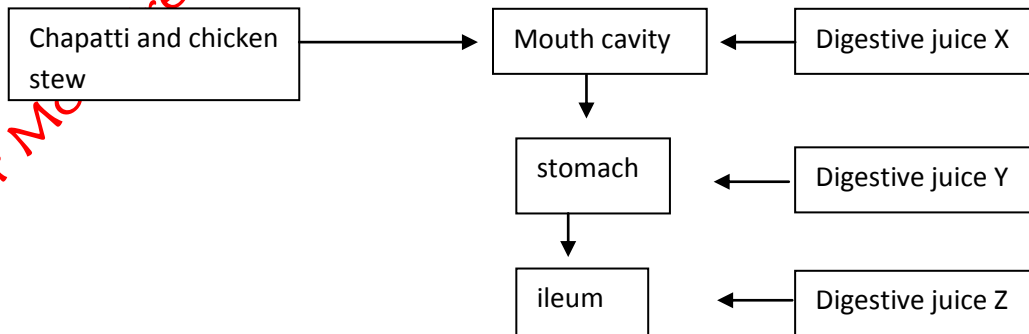...

....

4.   Use the diagram below to answer questions that follow

a. Name the structure represented by the diagram   (1mk)

....

b. Name the parts labeled M and Z   (2mks)

....

....

c. List any two likely contents for each of the parts labeled N and V   (2mks)

....

....

d. The contents of part V boiled with Benedict's solution and an orange precipitate was
    formed. Account for the results   (2mks)

....

....

....

e. State one function of part labeled Q.   (1mk)

....

5. The follow chart below represents a meal through the human digestive system. Study it
    and answer questions that follow.

Chapatti and chicken stew	→	Mouth cavity	←	Digestive juice X
		↓		
		stomach	←	Digestive juice Y
		↓		
		ileum	←	Digestive juice Z

a. Name the physical process that will occur in the mouth cavity   (1mk)

....

b. Name the digestive juices Y and Z. (2mks)

....

....

c. Explain two ways in which the digestive system is protected from corrosive effects of digestive juices. (2mks)

....

....

....

....

d. Name the hormone that stimulates the secretion of juice Y. (1mk)

....

e. Identify two contents of digestive juice X. (1mk)

....

SECTION B (40MKS)

Answer questions 6(compulsory) and either question 7 or 8 in the space provided after question 8.

6. The approximate number of ticks per cattle in certain farm before and after spraying with conk constant concentration of a specific acaricide was determined for a period of 20 years. The spraying was done once per month. The results were as shown below

TIME (YRS)	0	1	3	6	10	15	18	20
NO OF TICKS/CATTLE	200	120	40	20	19	25	45	90

a. On the grid provided, plot a graph of number of ticks per cattle against time (6mks)

b. What was the number of ticks per cattle after two years? (1mk)

....

c. Account for the changes in the number of ticks per cattle between:

(i) 0 to 10 years (2mks)

....

....

....

(ii) 15 to 20 years (3mks)

....

....

....

....

d. Explain two disadvantages of using acaricides in tick control. (2mks)

....

....

e. State three alternative methods that would have been used instead of an acaricide in the control of ticks. (3mks)

....

....

....

f. Name the class to which the tick belongs. (1mk)

....

g. (i) Name the class to which the tick belongs (1mk)

....

(ii) Give one reason for your answer above (1mk)

....

7. (a) What is homeostasis (2mks)

(b) Name any three factors that must be maintained constant in the mammalian bodies. (3mks)

(c) Explain how endotherms respond to hot and cold conditions in their environment (15mks)

8. (a) What are halophytes? (1mk)

a. Explain the adaptations of the halophytes to their habitats (14mks)

b. To ensure the population of fish in lake, 600 fish were caught, marked and returned to the lake. Four days later 226 fish less than in day one were caught out of which 100 had marks

(i) Calculate the population of fish in the lake. (2mks)

(ii) State two assumptions made during the investigations and one limitation of the above method (3mks)