

BIOLOGY 231/3**July/Aug,2011**

TIME 1HR 45 MIN

BARINGO COUNTY IMPROVEMENT EXAMS**INSTRUCTIONS TO CANDIDATES*****Answer all questions***

You are required to spend the first 15 minutes of the 1³/₄ hours allowed for this paper reading the whole paper carefully before commencing your work.

Answers must be written in the spaces provided in the question paper.

Additional pages ***must*** not be inserted

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's score
1	16	
2	14	
3	10	
Total score	40	

- Q1.** (a) Using the reagents provided, carry out starch and reducing sugar tests of substance labeled **Q** in a beaker. Fill in the procedures, observations and your conclusions in the tables below. (3mks)

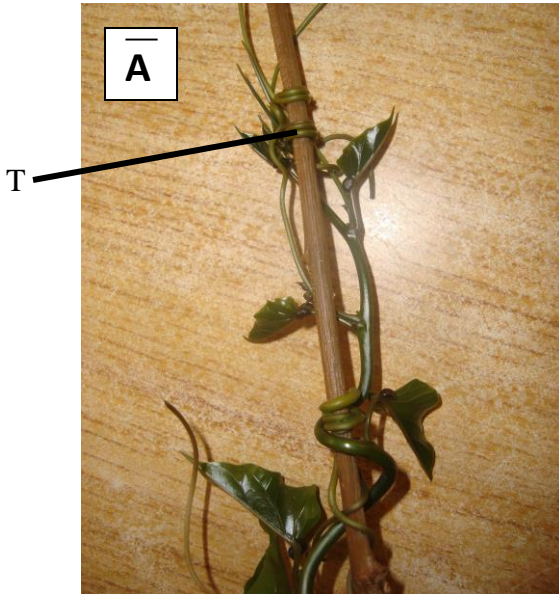
Food substance	procedure	observation	conclusion
Starch			
Reducing sugar			

- (b) Label two test-tubes **A** and **B**
 Into the test-tube labeled **A**, add 1ml of solution **Q** and 1ml of **R**
 Into the test tube labeled **B**, add 1ml of **Q** and 1ml of **boiled R**
 Place the two test-tubes labeled **A**, and **B** into a water bath maintained at 37⁰C, for at least 30 minutes.
(Ensure that the temperature of the water bath does not fall below 35⁰C exceed 38⁰C.)
 After 30 minutes , test the contents of each of the test tubes **A** and **B** again for starch and reducing sugar following the procedure in (a) above.
 Record your observations in the table below. (4mks)

Test tube	Food substance	observation	conclusion
A	Starch		
	Reducing sugar		
B	Starch		
	Reducing sugar		

- c) Account for the results at the end of the experiment in the test tube labeled.
- (i) **A** (2 marks)
- (ii) **B** (2 marks)
- (d) (i) Give the identity of solution **R**. (1 mark)
- (ii) Give two reasons for your answer (d)(i) above. (2 marks)
- (e) (i) Name one part of the mammalian body where the process being investigated in this experiment would take place. (1 mark)
- (ii) Give a reason for your answer in (e)(i) above. (1 mark)

Q2. (a) Examine photograph **A**, **B1** and **B2** carefully and answer the questions that follow. B2 was extracted from B1



B2

B1



- (i) **What** name is given to the coiled part labeled **T** found on specimen **A** (1 mark)
- (ii) **Name** the type of response exhibited by the coiled part on specimen **A** (1mark)
- (iii) **Name** the stimulus responsible for the response named in (ii) above. (1mark)
- (iv) **Explain** how the response exhibited by the coiled part on specimen **A** occurred (3 marks)

(v) **State** the biological significance of the response described in (iv) above to the survival of the specimen. (1 mark)

b) Use photographed specimens labeled **B1** and **B2** above to answer the questions below.

(i) State the agent of pollination for the specimen above. 1mk

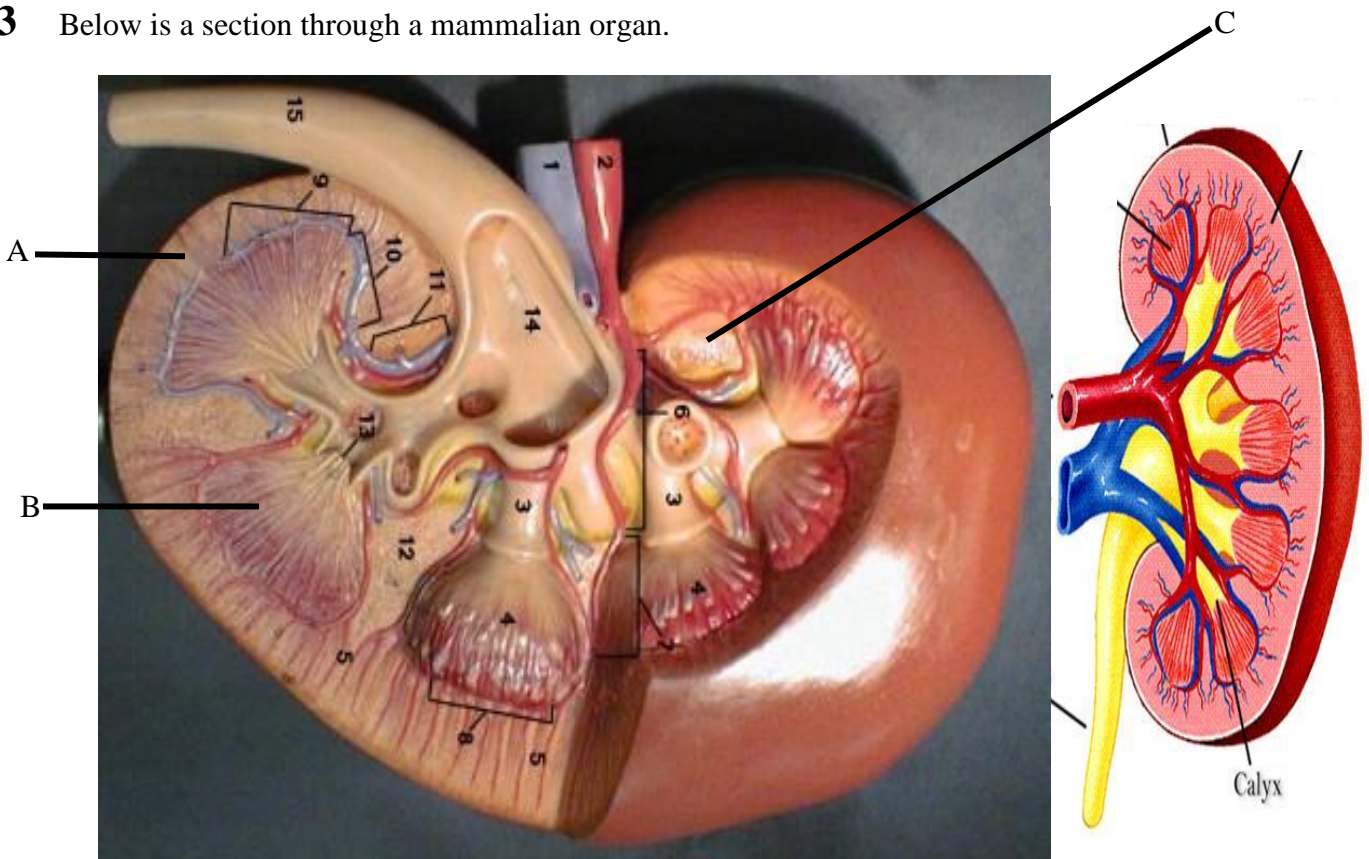
(ii) Give a reason for your answer. 1mk

(iii) Describe the external features of leaves of the specimen **B2**. (3mks)

(iv) Based on the floral parts, state the class to which specimen **B** belongs. 1mk

(v) Give a reason for your answer in (iv) above. (1mk)

Q3 Below is a section through a mammalian organ.



i) Identify the section _____ (1mk)

ii) Name the parts labeled **A**, **B** and **C** (3mks)

A _____

B _____

C _____

- iii) State two functions of the photographed specimen. (2mks)
- iv) Label on the photograph using **G** and **L** the region where the **Glomerulus**, and **Loop of Henle** are located respectively. (2mks)
- (v) Name a process that occurs in the glomerulus and Loop of Henle
Glomerulus _____
Loop of Henle _____ (2mks)