NAME:…………………………………. INDEX NO. ………………..……

SIGNATURE: ………………….

231/3
BIOLOGY
PRACTICAL
Paper 3
March/April, 2011
Time: 2 Hours

MOKASA JOINT EVALUATION EXAMINATION
Kenya Certificate of Secondary Education (K.C.S.E)
Biology
Paper 3
(PRACTICAL)
March/April, 2011

Instructions To Candidates

- _Write **your name** and **Index number** in the spaces provided._
- _You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper. Reading the whole page carefully before commencing you work._
- _Answer **All** the questions and answers **MUST** be written in the spaces provided in the question paper._
- _Additional pages **MUST NOT** be inserted._

For Examiner's Use Only:

QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
1	12	
2	14	
3	14	
TOTAL	**40**	

**This paper consists of 4 printed pages.**

1. You are provided with a specimen labeled X . Cut lengthwise six strips of the specimen 1.0 mm wide and 4.0 cm long. Place three strips into solution labeled P and the other three strips into a solution labeled Q in the two test tubes provided . make sure the solutions cover the strips completely. Leave the strips for at least thirty minutes

a) After thirty minutes, remove the strips and dry them using filter /blotting /tissue paper provided . Fill in the table below. (4mks)

Strips (length in mm)	P Length in mm	Q (length in mm)
1		
2		
3		
Average length in mm		

b) Describe how the strips felt to touch:
   i) Strips in P (1 mk)
   ii) Strips in Q (1mk)

c) What is the nature of the solutions P and Q in relation to cell sap ?
   P …………….(1 mk)
   Q ……………..(1 mk)

d) Measure 5.0 cm3 of distilled water . Chop the remaining piece of specimen X into small pieces . Transfer the pieces to the water in the mortar. Gently crush the pieces using a pestle into a pulp. Decant the solution into a clean test tube . Use this solution to test for food compounds using the reagents provided (4mks)

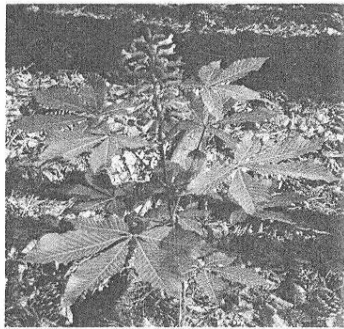| Test	Procedure	Observation	Conclusion

2. Below are photo graphs of plants labeled A, B, C, D and E. Study them and the dichotomous key constructed below then answer the questions that follow.
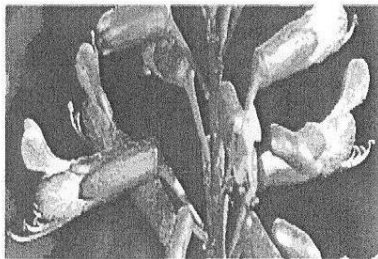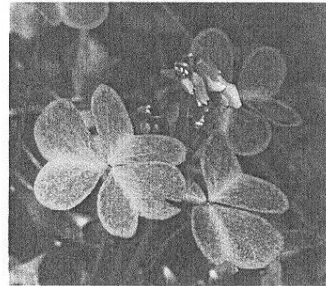

PHOTOGRAPH A
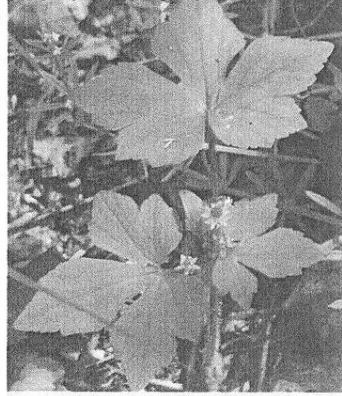
PHOTOGRAPH B

PHOTOGRAPH C

PHOTOGRAPH D

Enlarged portion of photograph C

PHOTOGRAPH E

1. a) Leaf simple …………………………… go to 2
   b) Leaf compound …………………………go to 5
2. a) Leaf parallel veined …………………….go to 4
   b) Leaf net veined………………………go to 3
3. a) Leaf with lobed apex …………………castor oil
   b) Leaf with pointed apex…………………Ranunculus recurova
4. a) Flower with conscipicous petals ……….Sisyrinchium angustifolium
   b) Flower with inconscipicous petals ……..Carex crinita
5. a) Leaf palmate……………………………..Aesculus pavia
   b) Leaf Trifoliate …………………………..Oxalis violacea

a) Fill the table below

Specimen	Identity	Steps followed
A		
B		
C		
D		
E		

b) Using an observable feature only, state the likely agent of pollination for plants in photographs C and D .

c) Agent ………………………………(1 mk)

   Reason…………………………………..(1 mk)

d) Agent ……………………………….(1mk)

   Reason ……………………………………(1mk)

3. The figure below represents parts of two adjacent cells as seen under an electron microscope. Study the micrograph and answer the questions that follow.

Figure 1
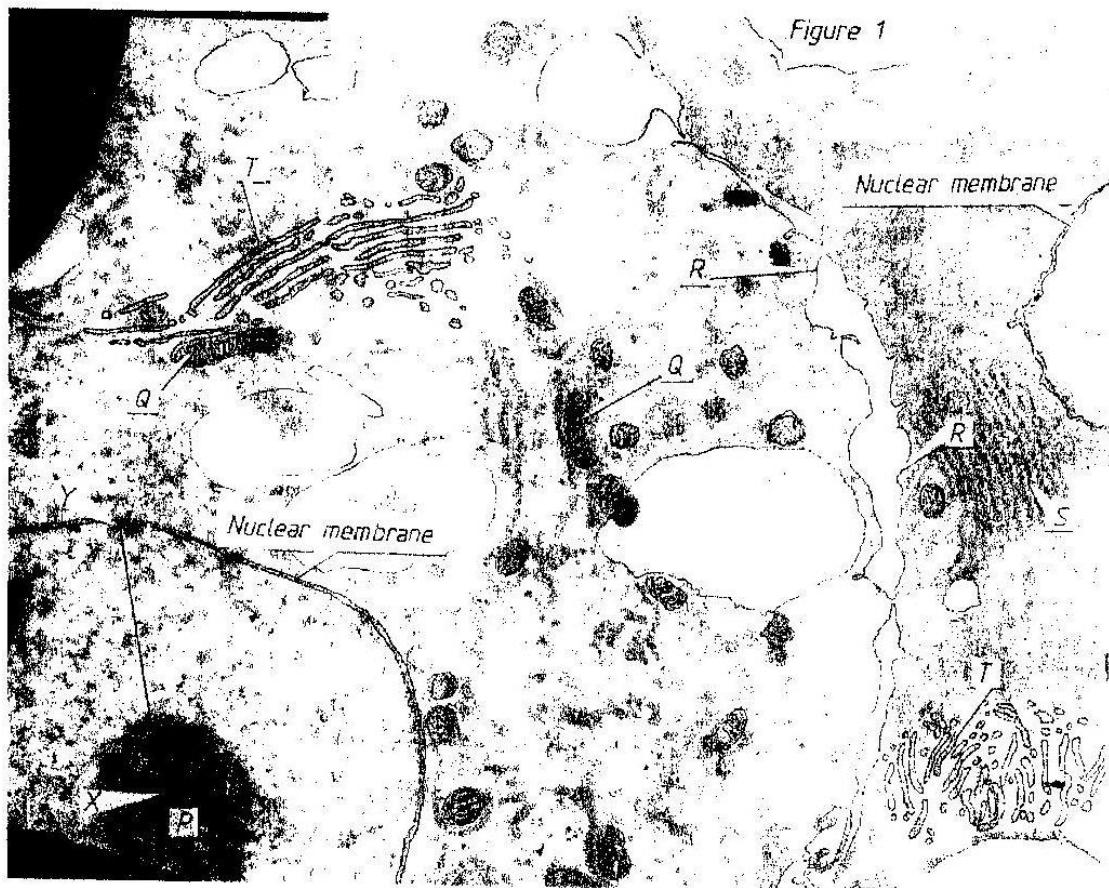
a) In the space below , name the organelles P, Q ,R,S and T

   P identity ………………………………….(1mk)

   Function ……………………………………(1mk)

   Q identity …………………………………(1 mk)

   Function …………………………………….

   R identity …………………………………...

   Function……………………………………..

   S identity…………………………………….

   Function……………………………………..

   T identity …………………………………...

   Function……………………………………

b) Explain why the structures labeled Q would be more abundant in an actively respiring tissue (1 mk)

c) The magnification of the cells in this micrograph is X20,000. Use a ruler to measure the radius of the nucleaus between points X and Yin millimeters. Calculate the actual radius of the nucleus before magnification in micrometers (μm)

   Length …………………………….(1mk)

   Actual radius of nucleus ………….(2mks)

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