

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

SCHOOL: ..... DATE : .....

CANDIDATE'S SIGNATURE: .....

231/3  
BIOLOGY  
PAPER 3  
(PRACTICAL)  
JULY / AUGUST 2014  
TIME: 1 ¾ HOURS

## NANDI CENTRAL JOINT DISTRICT MOCK 2014

*Kenya Certificate of Secondary Education (K.C.S.E.)*  
BIOLOGY  
PAPER 3  
TIME: 1 ¾ HOURS

### **INSTRUCTIONS TO CANDIDATES:**

- (i) Write your **Name** and **Index Number** in the spaces provided.
- (ii) **Sign** and write the **Date** of Examination in the spaces provided.
- (iii) Answer all the questions in the spaces provided.
- (iv) You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (v) Additional pages must not be inserted.
- (vi) This paper consists of 4 printed pages.
- (vii) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

### **FOR EXAMINER'S USE ONLY**

QUESTION	MAX. SCORE	CANDIDATE'S SCORE
1	12	
2	14	

3	14	
<b>TOTAL</b>	<b>40</b>	

**SECTION A (40 MARKS)**

**Answer all questions in this section in the spaces provided.**

1. You are provided with specimen Q, which is a fresh potato, liquid R (Hydrogen peroxide) and reagents 1% copper sulphate, 2M sodium hydroxide and iodine solution. Use them to carry out the tests below.

(a) Using a scalpel, cut two small cubes measuring 1cm x 1cm x 1cm from the fresh potato. Place one of the cubes in boiling water for 10 minutes, then remove the cube and let it cool. Place it in a boiling tube and label it A.

Place the fresh piece of potato cube in another boiling tube labelled B and then add equal amounts of hydrogen peroxide to each test tube at the same time. Write your observations.

**Observations:**

(i) Boiling tube A (1mk)

.....

(ii) Boiling tube B (1mk)

.....

(b) Explain your observation in (i) and (ii) above. (4mks)

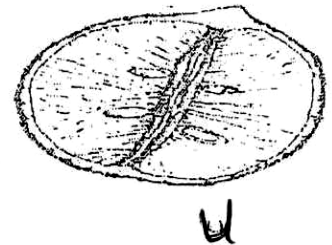
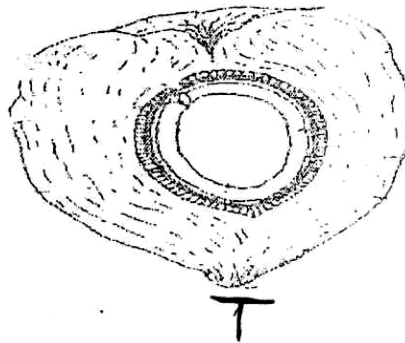
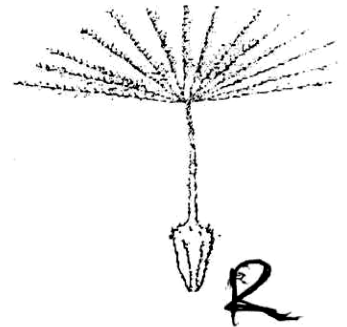
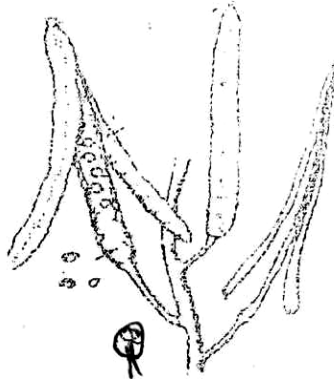
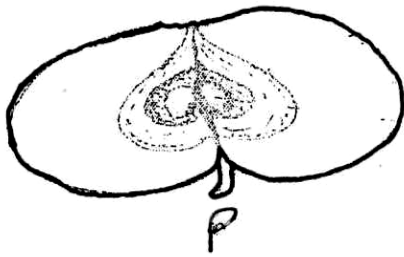
.....  
 .....  
 .....  
 .....

(c) Crush a small piece of the remaining potato in a mortar. Add a little amount of distilled water to make a mixture. Use it to carry out food tests below. (6mks)

Food substance	Procedure	Observation	Conclusion

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2. Below are photographs labeled P, Q, R, S, T and U of fruits obtained from different plants. Examine them and answer the questions underneath.



(a) With reasons, determine the modes of dispersal for the fruits labeled Q and R. (4mks)

Q:.....

Reasons:.....

.....

R:.....

Reasons:.....

.....

(b) State the form of placentation in Q, S, T and U.

(4mks)

Q:.....

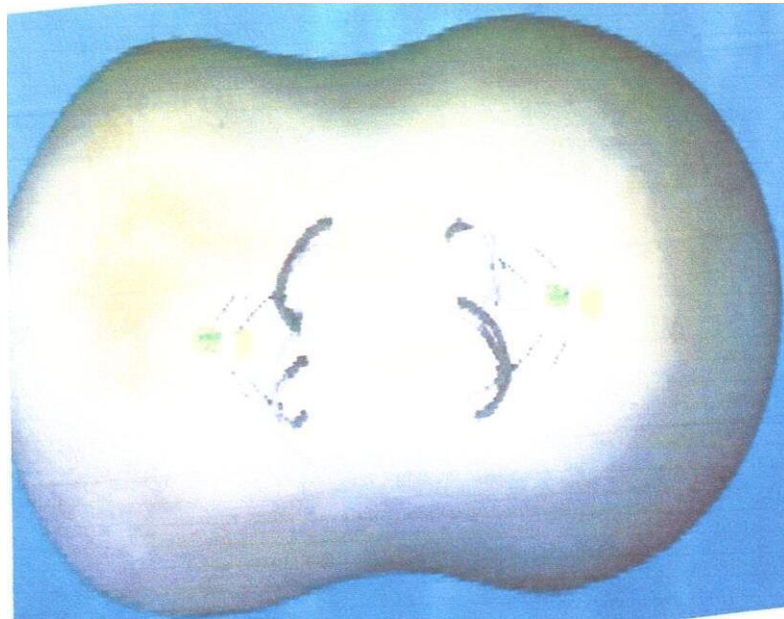
S:.....

T:.....

U:.....

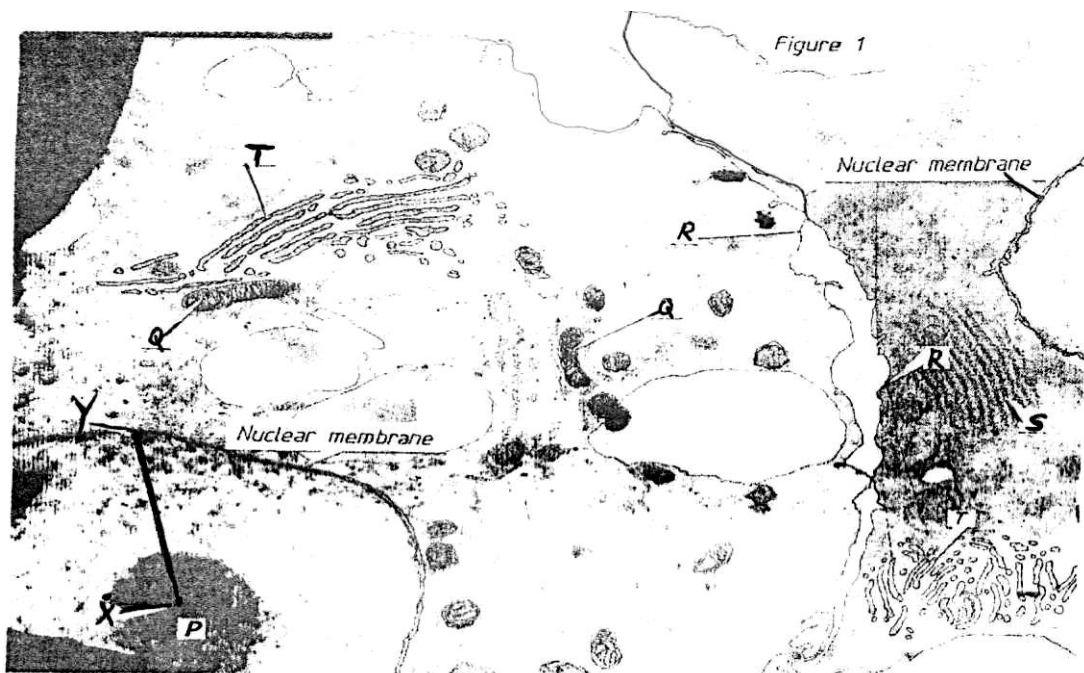
- (c) With a reason, identify the type of fruit represented by specimen P. (2mks)  
Type of fruit:.....  
Reason:.....

- (d) Below is a photomicrograph of a certain process in reproduction. Study it carefully and answer the questions that follow.



- (i) Identify the process shown in the photomicrograph. (1mk)  
.....
- (ii) Name the exact stage and place of the process shown in the photomicrograph.(1mk)  
.....  
.....
- (iii) What is the significance of the process at its completion? (1mk)  
.....  
.....

3. Figure 1 represents parts of two adjacent liver cells as seen under an electron microscope. Study the micrograph and answer the questions that follow.



(a) (i) Name the organelles labelled P, R, T. (3mks)

P:.....

R:.....

T:.....

(ii) State **one** function of each of the organelles labelled Q and S. (2mks)

Q:.....

S:.....

(iii) The magnification of the cells in the micrograph is x20,000. Use a ruler to measure the radius of the nucleus between points X and Y in millimeters.

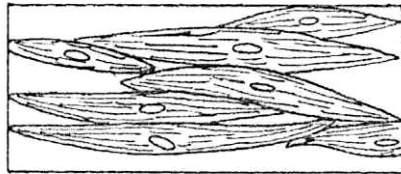
Radius of nucleus:.....mm (1mk)

(iv) Calculate the actual radius of the nucleus before magnification in micrometers ( $\mu\text{m}$ )

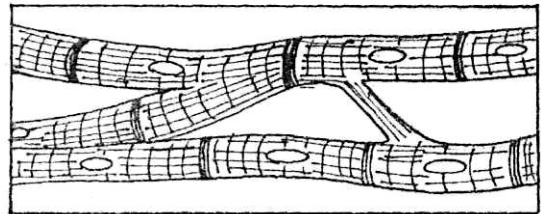
Q:

(1mk)

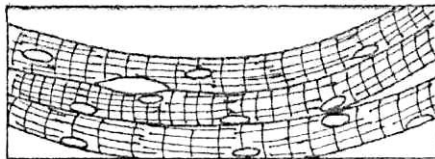
(b) Figure 2 represents different types of muscles. Study them carefully and answer the questions that follow.



B



C



D

(i) Identify the muscles labelled C and D. (2mks)

C:.....

D:.....

(ii) Using observable features only; state **two** differences between muscles labelled B and D. (2mks)

.....  
.....  
.....  
.....

(iii) State **one** function of each of the muscles labelled B and C. (2mks)

B:.....

C:...../

(iv) Give **one** adaptation of a muscle labelled C to its function. (1mk)

.....  
.....

**ANSWERS:**

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