

Name.....

Index No...../.....

School.....

Candidates Signature.....

Date

231/3
BIOLOGY
(PRACTICALS)
Paper 3
July/August 2009
1³/₄ Hours

BORABU INTER - SECONDARY SCHOOL
JOINT EVALUATION TEST - 2009
Kenya Certificate of Secondary Education (K.C.S.E)

231/3
BIOLOGY
(PRACTICALS)
Paper 3
July/August 2009
2 Hours

INSTRUCTIONS TO CANDIDATES

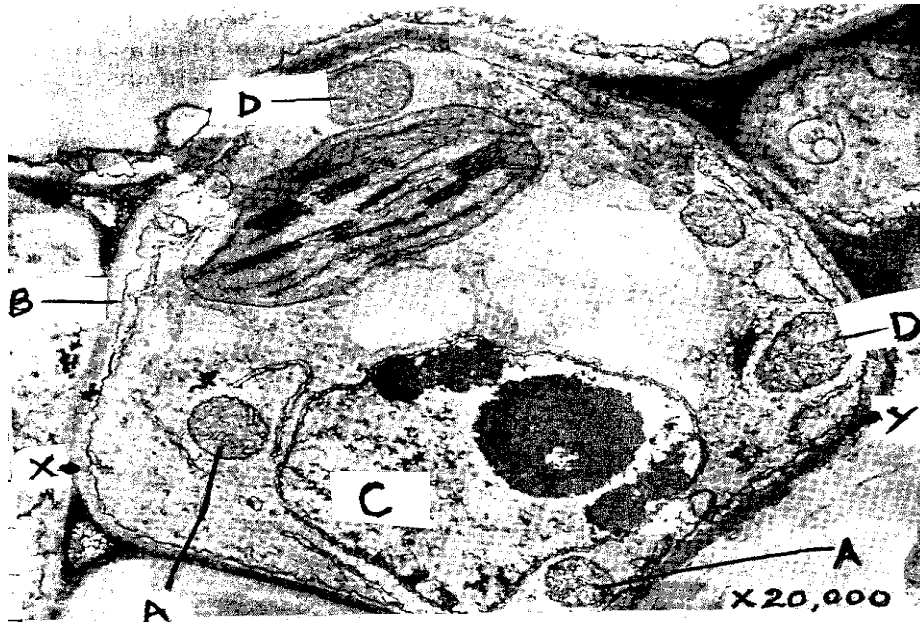
- Write your name and Index Number in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **ALL** questions in the spaces provided in the question paper.
- You are **NOT** allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.
- All workings **MUST** be clearly shown where necessary.
- Mathematical tables and silent electronic calculators may be used.

For Examiners use only.

Section	Question	Maximum Score	Candidates Score
	1	14	
	2	12	
	3	14	
	TOTAL SCORE	40	

*This paper consists of 6 Printed pages.
Candidates should check the question paper to ensure that all the
Papers are printed as indicated and no questions are missing*

1. The photomicrograph below is of a cell. Study it carefully and answer the questions that follow.



(a) State whether the photomicrograph is of a plant or animal cell. (1mk)

.....

(b) Identify structures labeled A, B and C and give their functions (6mks)

Structure	Identity	Function
A		
B		
C		

(c) State one observable adaptations of the structures labeled D (1mk)

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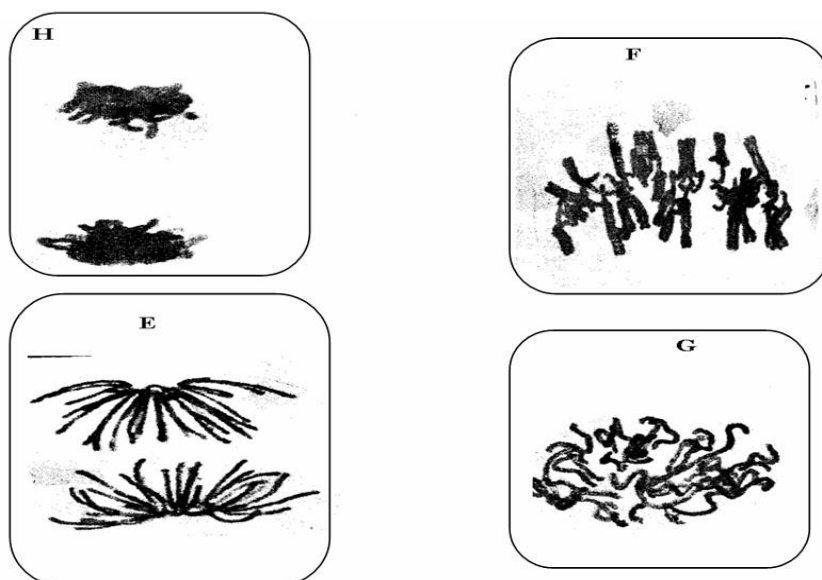
(d) (i) Measure the distance from point X to Y in mm (1mk)

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(ii) Calculate the actual length of X – Y in micrometers (2mks)

.....

- (e) The pictures below are photomicrograph of cells from the root tip of Lillium Regale showing some stages in cell division.



- (i) Name the type of cell division shown in the pictures (1mk)

.....

- (ii) Arrange the picture in order from the first to last stage during cell division. (1mk)

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- (iii) Describe the process illustrated in the picture labeled G (1mk)

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- (iv) State the biological significance of this type of cell division to living organisms. (1mk)

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2. You are provided with visking tubing labeled J, a piece of thread and a solution labeled K. Dip the visking tubing in distilled water to moisten it, open it, and then tie one end tightly with the thread provided.

Half-fill the visking tubing with solution K then tie the open end of the tubing tightly. Ensure solution K does not spill out of the tubing.

Immerse the visking tubing into distilled water in a beaker. Ensure that the visking tubing is completely immersed in the distilled water.

Leave the set-up for 20 minutes. Record your observations after 20 minutes.

(a) (i) Observations (1mk)

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.....

(ii) Explain your observations in a (i) above (2mks)

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.....

(b) Remove the visking tubing carefully. Ensure the contents of the visking tubing do not mix with that of the beaker. Using the reagents provided, test for the food substance present in the visking tubing and the beaker.

I Visking tubing

Food test	Procedure	Observations	Deductions

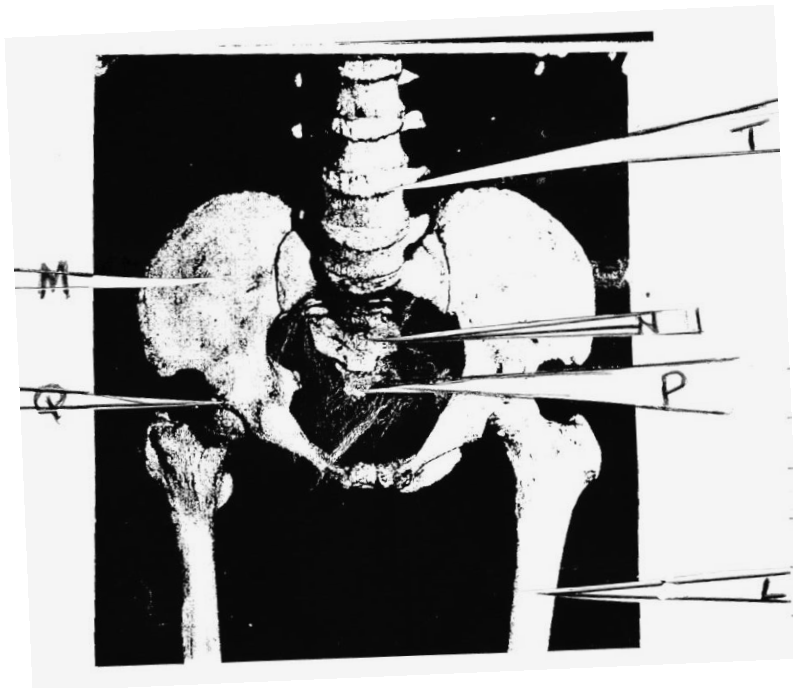
I Beaker

Food test	Procedure	Observations	Deductions
Starch			
Reducing sugars			

(c) Explain the observations and deductions in (b) above. (3mks)

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.....

3. The photograph below is a part of a human skeleton



(a) (i) Name the bones labeled L, M, N and P (5mks)

Bone	Identity
L	
M	
N	
P	
T	

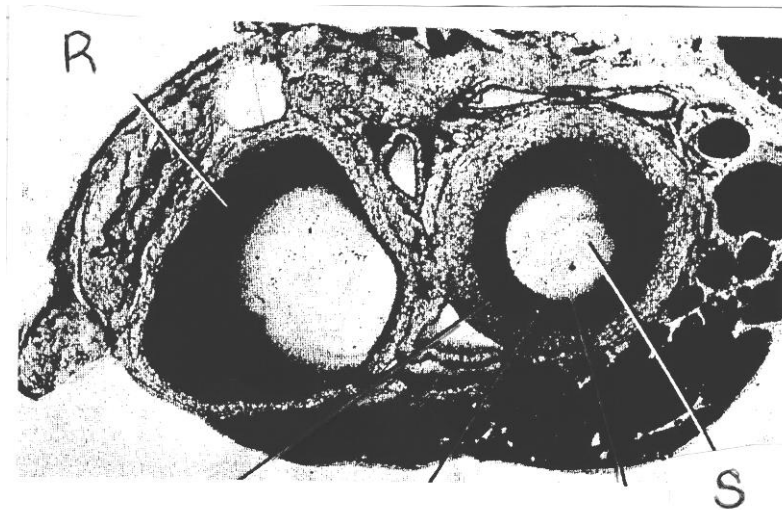
(ii) Name the type of joint found at point marked Q (1mk)

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.....

(iii) Explain how the bone labeled M is adapted to its function. (2mks)

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.....

- (b) The photomicrograph below is a section through a mammalian tissue showing two blood vessels R and S



- (i) Identify the blood vessels labeled R and S (2mks)

R.....
S.....

- (ii) State two observable differences between blood vessels R and S (2mks)

VESSEL R	VESSEL S

- (iii) Using observable features only, explain how blood vessel is adapted to its function. (2mks)

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