

Name: Index no

School: Candidate's sign

Date:

231/2
 BIOLOGY
 PAPER 2
 MARCH/APRIL 2011
 TIME: 2 HOURS

BUTERE EAST ZONE JOINT EXAMINATION

Kenya Certificate of Secondary Education (K.C.S.E.)

Biology
Paper 2

INSTRUCTIONS TO CANDIDATES:

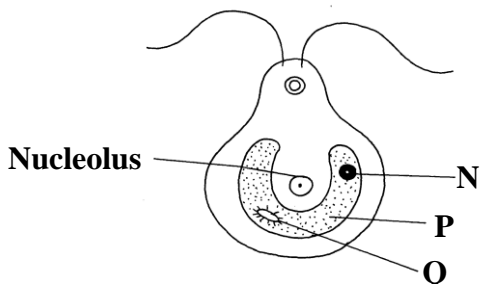
- Write your *name* and *Index number* in the spaces provided.
- Answer *ALL* the questions in Section *A* in the spaces provided.
- In section *B* answer questions *6* (compulsory) and either question *7* or *8* in the spaces provided

For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2		
	3	8	
	4		
	5		
B	6	20	
	7	20	
	8	20	
	TOTAL	80	

This paper consists of 8 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing

1. A student placed a drop of pond water in a cavity slide and observed it under the microscope. He observed many organisms, one of which is represented below.



- a) (i) Name the kingdom to which the organisms belongs. (1mk)
 (ii) Give **two** differences between members of the Kingdom named in (a) (i) and members of kingdom Monera. (2mks)
 b) Name the structures labeled **N,P** and **Q** (3mks)

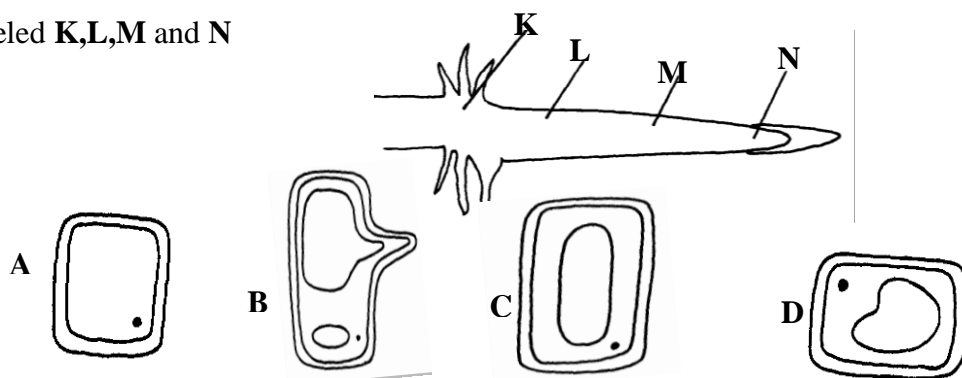
N

P

Q

c) State **two** observable features on the organisms that are only found in animals and not plants. (2mks)

2. The diagram below represents a young root tip and four cells which occur in the different regions of the root labeled **K,L,M** and **N**

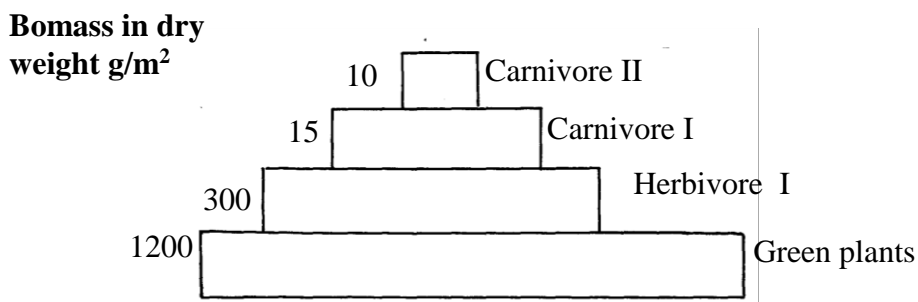


a) Using the letter labels in the drawing of the root, state the regions of the root tip where each of the cells **A,B C** and **D** occur.

Cell	region of root tip
A
B
C
D

b) State **four** characteristics of the cells that occur at region **N** of the root tip. (4mks)

3. a) The diagram below shows different groups of organisms and their biomass.



i) Define the term biomass. (1mk)

ii) Account for the decrease in biomass in the successive group of organisms. (2mks)

iii) Describe how energy from the sun is made available for carnivore II (3mks)

b) Explain why the carrying capacity for wild herbivores is higher than that for cattle in a given habitat. (2mks)

4. a) List down any **two** characteristics of respiratory surface in animals. (2mks)

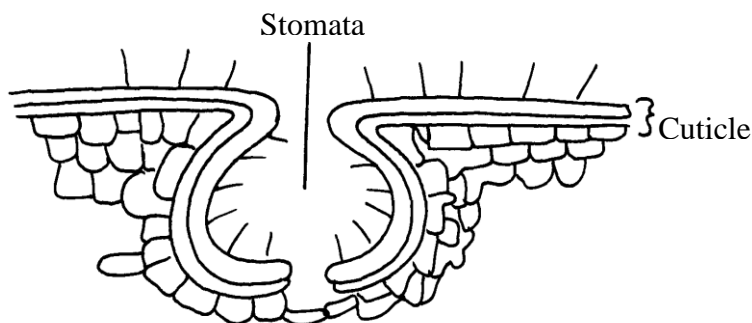
b) Name the type of respiratory surface of the following organisms. (3mks)

i) Amoeba.....

ii) Fish.....

iii) Insects.....

c) The diagram below represents a transverse section of a lower leaf epidermis of a desert plant:



Explain the adaptive features in the section. (3mks)

5. A true breeding black male mouse was mated with a true breeding brown female mouse. All the offspring were black coloured.

a) Giving a reason, state which of the two genes, one for black colour and the one for brown colour is recessive. (1mk)

b) Using the letter **B** to represent the dominant gene and b to represent recessive gene, write down the genotype of the black parental mouse. (1mk)

c) If the black parental mouse was mated with a mouse that is heterozygous for coat colour, work out

i) The genotypic ratio of the offspring. (5mks)

ii) The phenotypes of the offspring. (1mk)

SECTION B 40 MARKS.

Answer Question 6 compulsory and either question 7 or 8

6. The table below shows data collected on the concentration of lead in blood of people of different occupation in a certain city. Use it to answer the questions that follow:

<u>Occupation</u>	<u>Concentration of lead mg/100cm³ of blood</u>
Office worker	19
Policeman	21
Post man	23
Parking attendant	34
Garage Mechanic	33

- a) Who among the occupations is likely to suffer from Carcinogenic related problems? Give a reason. (2mks)
- b) Explain the source of lead in the city. (4mks)
- c) Explain the difference in concentration of lead in blood of a garage mechanic and office worker. (4mks)
- d) Explain how lead gets into blood of victim. (3mks)
- e) How can lead pollution be reduced in our environment? (3mks)
- f) Name **four** other sources of environmental pollution (4mks)
7. Explain how the male reproductive system is adapted to its functions (20mks)
8. Name **two** processes by which flowering plants excrete waste products, for each process state two waste products that are eliminated. (6mks)
- b) Explain the roles of the
- i) Liver
- ii) Kidney in eliminating excess amino acids from the human body. (14mks)