SCHOOL:…… NAME……ADM…..

INDEX NO.....

SIGN……DATE:……

232/2
BIOLOGY
PAPER 2
THEORY
MARCH/APRIL 2018
TIME: 2 HOURS

SCHOOL BASED EVALUATION EXAM
Kenya Certificate of Secondary Education (K.C.S.E)

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BIOLOGY
PAPER 2
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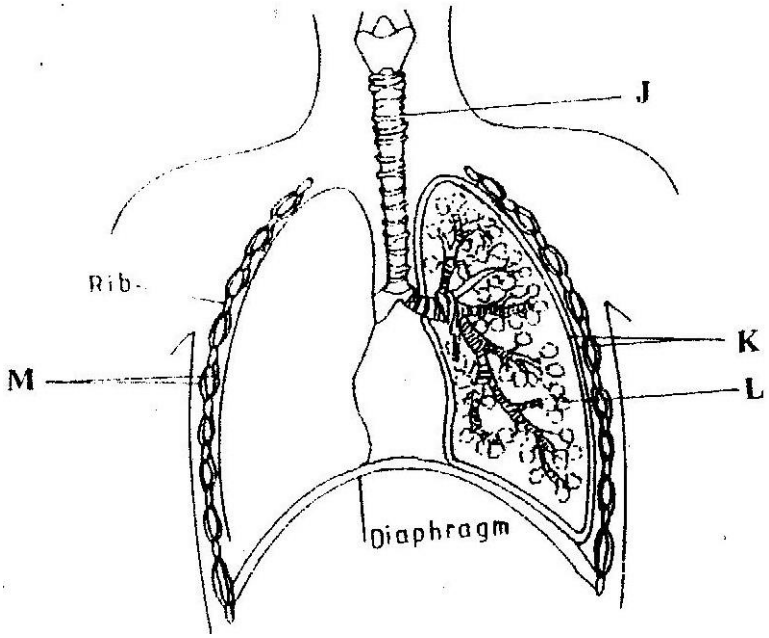
INSTRUCTIONS TO CANDIDATES

1. Write your name and Index number in the spaces provided.
2. Sign and write the date of examination in the spaces provided
3. This paper consists of two sections A and B
4. Answer all the questions in section A in the spaces provided.
5. In section B answer question 6 (Compulsory) and either question 7 and 8 in the spaces provided after question 8.

FOR EXAMINERS USE ONLY

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

1. The diagram below represents some gaseous exchange structures in humans



(a) Name the structures labeled K, L, and M (3 marks)

(b) How is the structure labeled J suited to its function? (3 marks)

(c) Name the process by which inhaled air moves from the structure labeled L into blood capillaries (1 mark)

(d) Give the scientific name of the organism that causes tuberculosis in humans (1 mark)

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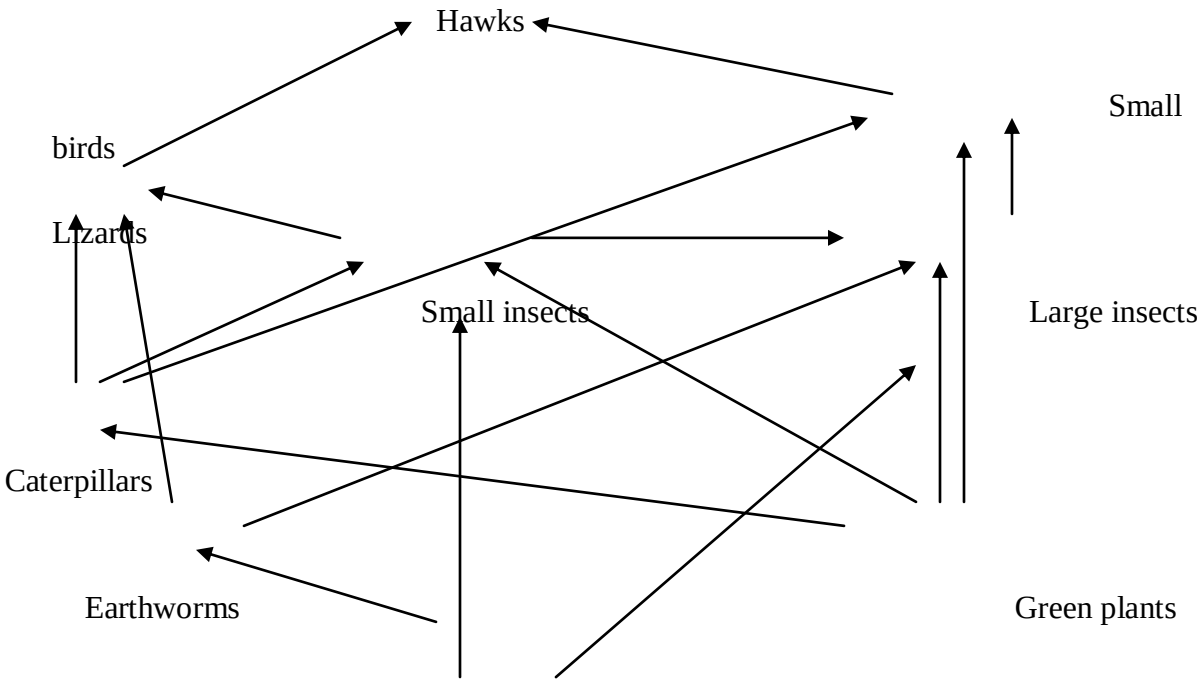
2. The diagram below represents a food web in certain ecosystem



a) Name the trophic level occupied by each of the following:
   i) Caterpillars (1 mark)

   ii) Small insect. (1 mark)

b) From the food web, construct **two** food chains which end with lizards as a tertiary consumer. (2 marks

c) i) Which organisms have the least biomass in this ecosystem? (1 mark)

ii) Explain the answer in (c)(i) above(2mks)

3.The equation below represents a process that takes place in plants

$$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$$

(a) Name the process (1 mark)

(b) State two conditions necessary for the process to take place (2 marks)

(c) State what happens to the end- products of the process (5 marks)

4. a) Name two disorders in human caused by gene mutation. (2 marks)

b) Describe the following chromosomal mutations. (2 marks)

a. Inversion

b. Translocation.

c) In mice the allele for black fur is dominant to the allele for brown fur. What percentage offspring would have brown fur form across between heterozygous black mice? Show your working.
Use letter B to represent the allele for black colour.
(4marks)

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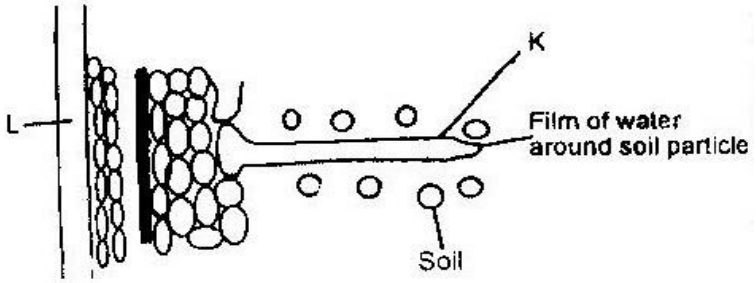
5. The diagram below represents then pathways of water from the soil into the plant.



(a) Name the structures labelled K and L. (2 marks)

(b) Explain how water from the soil reaches the structure labelled L. (5 marks)

(c) Name the process by which mineral salts enter into the plant (1 mark)

6. An experiment was earned out to investigate the effect of temperature on the rate of reaction catalyzed by an enzyme. The results are shown in the table below.

Temperature (°C)	Rate of reaction in mg of products per unit time
5	0.2
10	0.5
15	0.8
20	1.1
25	1.5
30	2.1
35	3.0
40	3.7
45	3.4
50	2.8
55	2.1
60	1.1

(a) On the grid provided draw a graph of rate of reaction against temperature. (6 marks)

(b) When was the rate of reaction 2.6 mg of product per unit time? (2 marks)

(c) Account for the shape of the graph between

(i) 5°C and 40° C (2 marks)

(ii) 45° C and 60° C (3 marks)

(d) Other than temperature name two ways in which the rate of reaction

between 5**°C** and **40°C** could be increased. (2 marks)

(e) (i) Name one digestive enzymes in the human body which works best in acidic condition. (1 mark)

(ii) How is the acidic condition for the enzyme named in (e) (i) above attained.

(f) The acidic conditions in (e) (ii) above is later neutralized

(i) Where does the neutralization take place? (1 mark)

(ii) Name the substance responsible for neutralization. (1 mark)

7.Explain how various hormones regulate growth and development in plants(20mks)

8 Explain the various evidences, which show that evolution has taken place. (20 marks)

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