

NAME DATE

INDEX NO. CANDIDATE'S SIGNATURE

231/2
BIOLOGY
PAPER 2
(THEORY)
JULY/AUGUST, 2010.
TIME : 1½ HOURS.

MBOONI WEST DISTRICT JOINT EVALUATION TEST

Kenya Certificate of Secondary Education.

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BIOLOGY
PAPER 2
(THEORY)
TIME: 1½ HOURS.

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in spaces provided above.
- Sign and write the date.
- This paper consists of two sections; **A** and **B**. Answer **ALL** the questions in section A in the spaces provided.
- In section **B** answer Question **7 (compulsory)** and either question **8 or 9** in the spaces provided.
- Additional pages must not be inserted.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	5	
2	8	
3	6	
4	8	
5	8	
6	5	
7	20	
8	20	
9	20	
TOTAL SCORE	80	

*This paper consists of 10 printed pages.
Candidates should check to ensure that all pages are printed as indicated and no questions are missing*

SECTION A: (40 MARKS)

Answer all the questions in this section

1. (a) Apart from avoiding overcrowding give two other benefits of seed dispersal. 1 mark

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(b) State **two** ways through which overcrowding disadvantages plants process of photosynthesis. 2 marks

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(c) List **two** mineral elements necessary for chlorophyll formation. 2 marks

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2. A woman whose blood group is O gives birth to a son whose blood group is A and a daughter whose blood group is B

a. (i) State the possible genotype of the father. 1 mark

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(ii) Using a punnet square work out the genotypes of the offsprings. 3 marks

b. (i) If the mother is rhesus positive and the father is rhesus negative what condition is the child likely to develop? 1 mark

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(ii) How can the condition be controlled? 1 mark

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c. Explain why the second born child is at risk of death that the first born child if no precaution is taken

2 marks

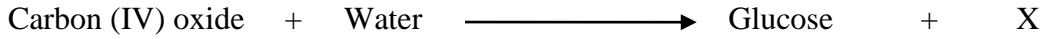
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3. The equation below shows a chemical reaction that takes place in green plants under certain conditions.



(a) What is the name of substance X ? 1 mark

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(b) Other than the reagents, state **two** conditions necessary for this reaction 2 marks

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(c) Name **two** types of cells in which this process occurs 2 marks

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(d) Name the process represented by the equation given above 1 mark

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4. The table below gives information about an aquarium community which is ecologically balanced;

Type of organism	Weight in grammes
Insect larva	500gms
Fishes	1200gms
Water plants	5000gms
Bacteria	10gms

a. What do you understand by the term ecological balance? 1 mark

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b. Calculate the total biomass of the aquarium. 2 marks

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c. Which organism in the table is

(i) Primary producer?

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(ii) Secondary consumer?

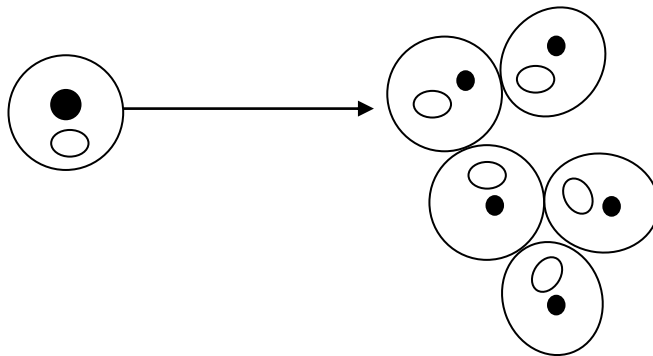
2 marks

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d. Construct a food web of the aquarium

3 marks

5. The diagram below represents a process in a given special of organisms;



(a) (i) Name the organism.

1 mark

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(ii) Identify the process that is shown to be taking place.

1 mark

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(iii) State the economic importance of organisms found in the kingdom which the organisms shown above belong.

2 marks

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(b) (i) Define the term species.

2 marks

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(ii) State **two** principals of binomial nomenclature.

2 marks

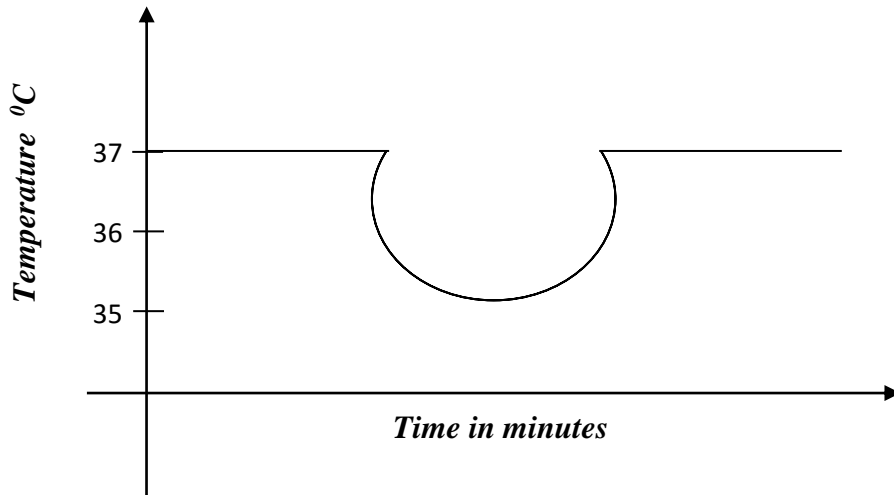
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6. The temperature of a person was taken before, during and after taking a cold bath. The results are as shown in the graph below.



(a) Explain why the temperature fell during bath.

2 marks

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(b) What changes occurred in the skin that enabled the body temperature to return to normal.

3 marks

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SECTION B. (40 MARKS)**Question 7 is compulsory.****Choose either question 8 or 9 and answer them in the spaces provided**

7. In an experiment to investigate a certain process in a given plant species, the rate of carbon (IV) oxide consumption and the rate of carbon (IV) oxide released were measured over a period of time of the day. The results of the investigation are shown in the table below.

Time of day (hrs)	6	8	10	12	14	16	18	20	22	24
CO ₂ consumption mm ³ /min	0	43	69	91	91	50	18	0	0	0
CO ₂ release mm ³ /min	38	22	10	3	3	6	31	48	48	48

- (a) On the same axis on the grid provided plot graphs of volume of CO₂ consumed and released against time
7 marks

