

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

School.....Date

Candidate's Signature.....

231/2

BILOGY

PAPER 2

JULY/AUGUST - 2012

Time: 2 Hours

LOITOKITOK DISTRICT JOINT EVALUATION TEST - 2012

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

INSTRUCTIONS TO CANDIDATES

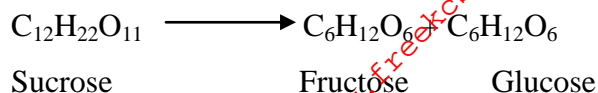
1. Write your name and Index Number in the spaces provided above.
2. Sign and write the date of the examination in the spaces provided above.
3. This paper consists of TWO sections; A and B.
4. Answer all the questions in section A in the spaces provided.
5. In section B answer questions 6 (Compulsory)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

This paper consists of 12 printed pages.

Candidates should check the question paper to ascertain that all pages are printed as indicated and no questions is missing.

SECTION A – Answer all the questions in this section.

1. In an experiment to investigate the rate of reaction indicated by the equation.



It was found out that for products fructose and glucose to form, substance “K” was needed.

Temperature was maintained at 37°C. When substance “L” was added, reaction slowed and then stopped.

- (a) Suggest identity of the substances (2mks)

K

L

- (b) Other than temperature, state three factors that increase the rate of reaction. (3mks)

- (c) Explain how substance “L” slowed the rate of reaction. (2mks)

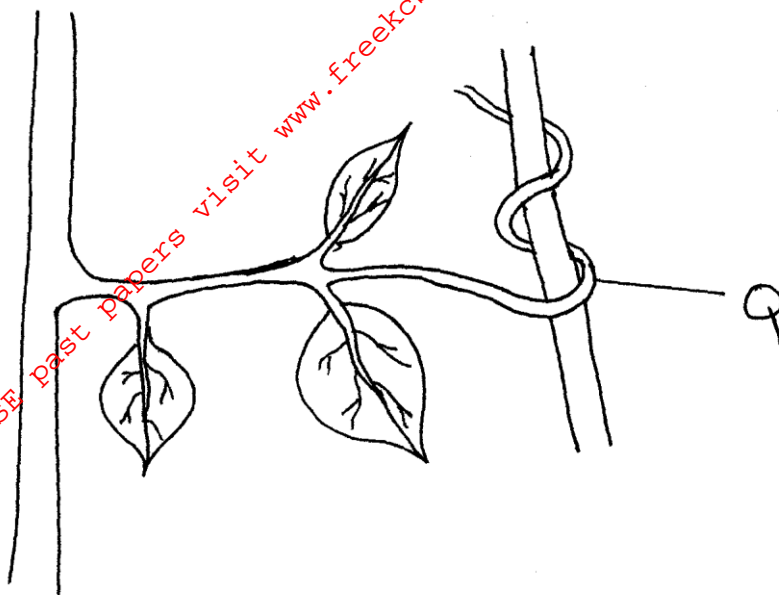
- (d) What type of reaction is represented by the equation above? (1mk)

2. (a) Give the differences between the following structures in wind and insect pollinated flowers. (6mks)

Structure	Insect pollinated flower	Wind pollinated flower
(i) Anther		
(ii) Stigma		
(iii) Pollen grain		

- (b) State two mechanisms that hinder self pollination in flowering plants

3. Study the diagram below and answer the questions that follows.



- (a) Identify part labeled Q. (1mk)
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- (b) (i) What type of response is shown above? (1mk)
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- (ii) What is the importance of the above response? (1mk)
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- (c) Explain how the response exhibited by the part Q occurs. (4mks)
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- (d) Name the plant hormone that is responsible for this response. (1mk)
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4. In a certain species of flies, the genotypes of pure breeds RR and rr, a cross was made between the two genotypes. When sprayed with an insecticides, it was found that it would only kills flies of genotype rr.

(a) Perform a cross to show the results of a cross between two heterozygote flies. (3mks)

(b) What percentage of flies would be killed by the insecticides show your working. (2mks)

(c) Explain why the insecticides kills only flies of genotype rr. (2mks)

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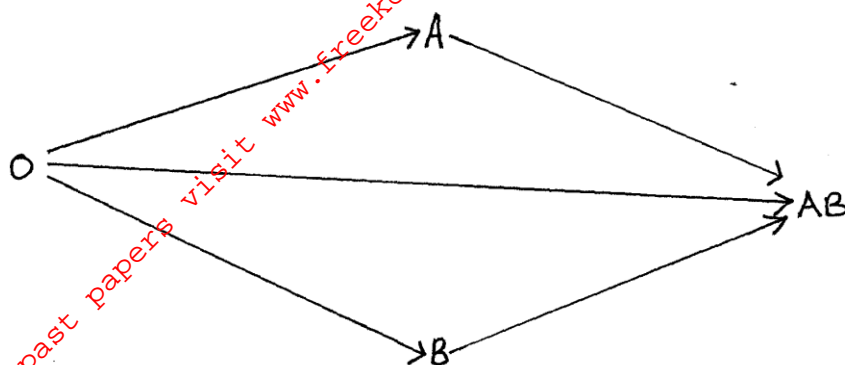
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(d) What is an allele? (1mk)

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5. The flow chart below shows blood transfusion pathway.



- (a) What five conclusions can you draw from the above flow chart? (5mks)

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- (b) Why is the knowledge of blood groups necessary before blood transfusion? (1mk)

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- (c) Apart from knowledge of blood groups state two precautions that must be observed during blood transfusion. (2mks)

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SECTION B(40 MARKS)

Question 6 is compulsory. Then answer either 7 or 8.

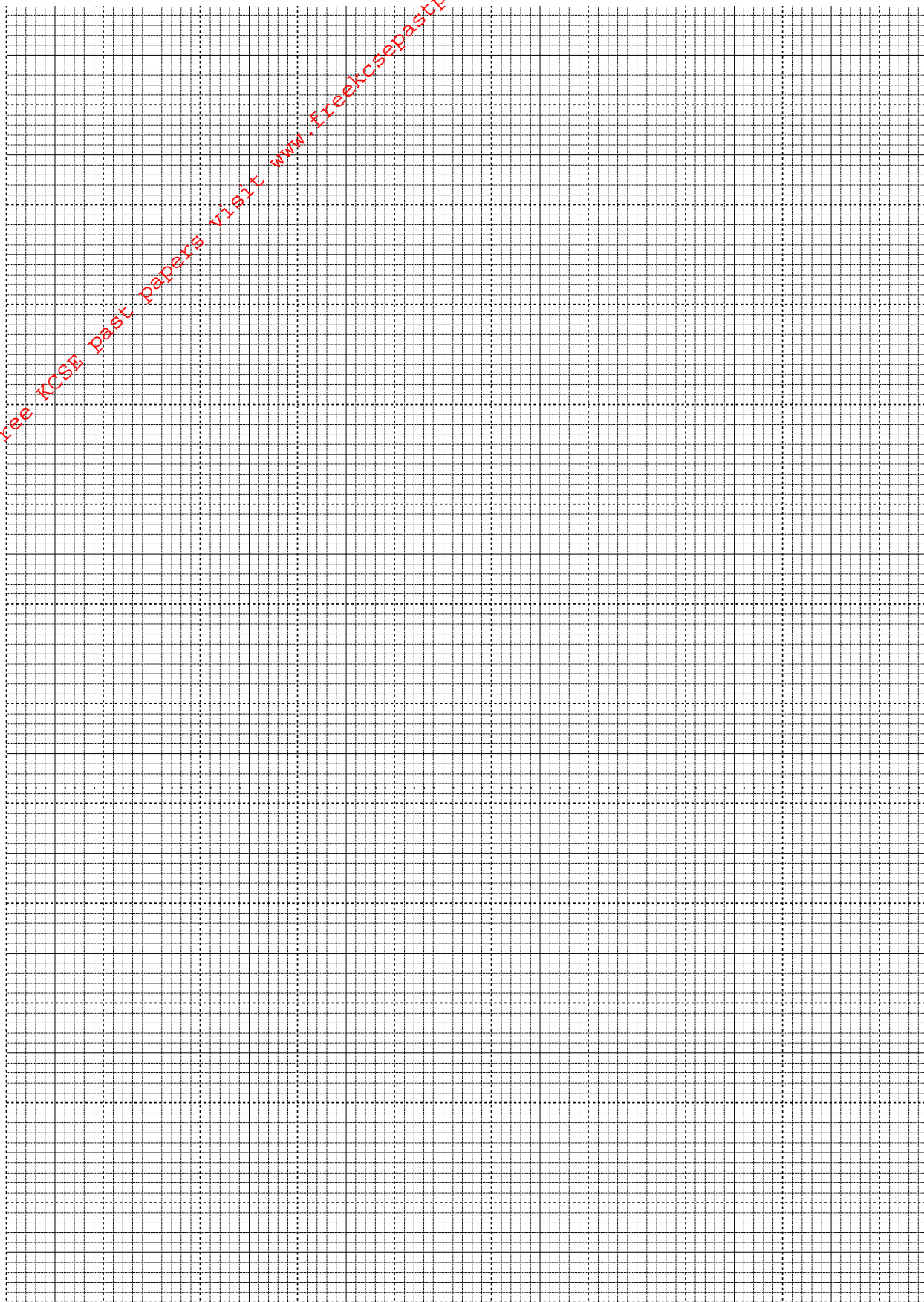
6. A person had gone for 24 hours without food. Then he was served with a well balanced meal after which the concentration of glucose and amino acids in the blood were determined every one hour for the next 8 hours after the meal, the concentration were measured as blood passed through the hepatic portal vein and hepatic vein.

The results were as shown in the data below.

Time in hours	Concentration of Glucose & amino Acids in blood (Mg/100 cm ³ of blood)
	HEPATIC PORTAL VEIN
	HEPAT IC VEIN
	GLUCOSE
	AMINO ACIDS
0	79
1	79
2	160
3	140
4	120
5	100
6	90
7	90
8	90

- (a) On the same axis plot graphs of glucose concentration in hepatic portal vein and hepatic vein against time. (7mks)

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- (b) Account for the difference in blood sugar level in hepatic portal vein and hepatic vein.
 (i) Between 0-1 hours. (4mks)

 (ii) Between 2-4 hours (5mks)

 (c) (i) Give one reason that delayed increase in amino acids concentration in hepatic portal vein. (1mk)

 (ii) Account for the difference in concentrations of amino acids in hepatic portal vein and hepatic vein between 3rd -6th hours (2mks)

 (d) Name the enzyme that completes fat digestion in man (1mk)

 7. A student ate lean meat for break fast, Explain fully how the meal eventually becomes part of the body tissue. (20mks)
 8. (a) With aid of a large labeled diagram describe the process of fertilization in a flowering plant. (14mks)
 (b) How does the process above differ from that in Bryophytes. (6mks)

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