Name……. Index No……/…….

School…… Date ……..…

Candidate's Signature……

231/2
BIOLOGY
Paper 2
(THEORY)
July / August, 2012
Time: 2 Hours

TESO SOUTH DISTRICT JOINT EVALUATION TEST - 2012

Kenya Certificate of Secondary Education – K.C.S.E

231/2
BIOLOGY
Paper 2
(THEORY)
July / August, 2012
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

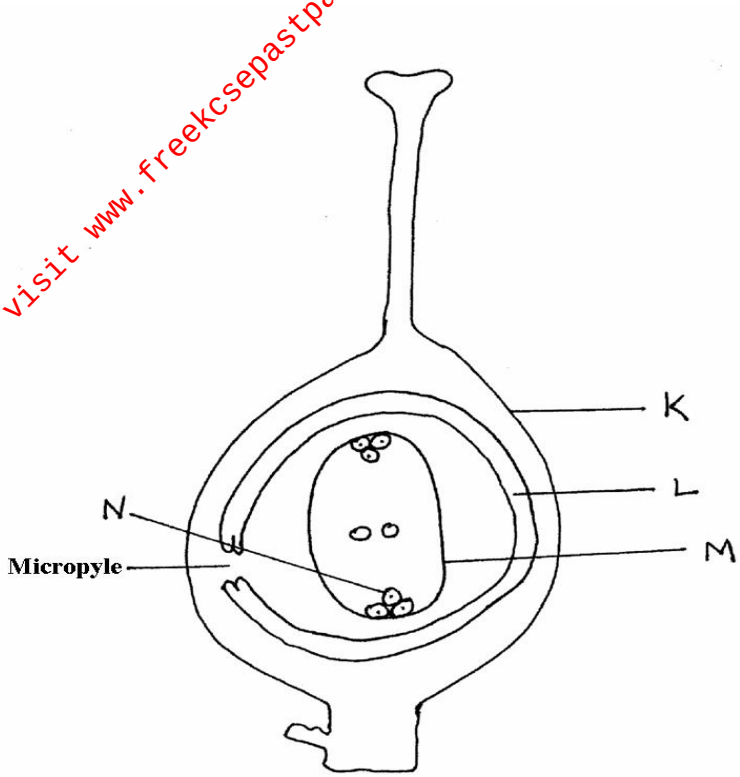
1. Write your name and Index Number in the spaces provided above.
2. Sign and write the date of the examination in the spaces provided above.
3. This paper consists of TWO sections; A and B.
   Answer all the questions in section A in the spaces provided.
   In section B answer questions 6 (Compulsory)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

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
Total Score		80	

This paper consists of 8 printed pages.
Candidates should check the question paper to ascertain that all pages are Printed as indicated and that no question is missing

1. The diagram below shows a cross – section through a pistil.



(a) Name the structures labeled K, L and M:- (3 mks)

K

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……

L

……

……

M

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……

(b) What do the following parts develop into after fertilization:- (3 mks)

Part M:-

……

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Part L:-

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Part N:-

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(c) In which ways do plants promote cross fertilization. (4 mks)

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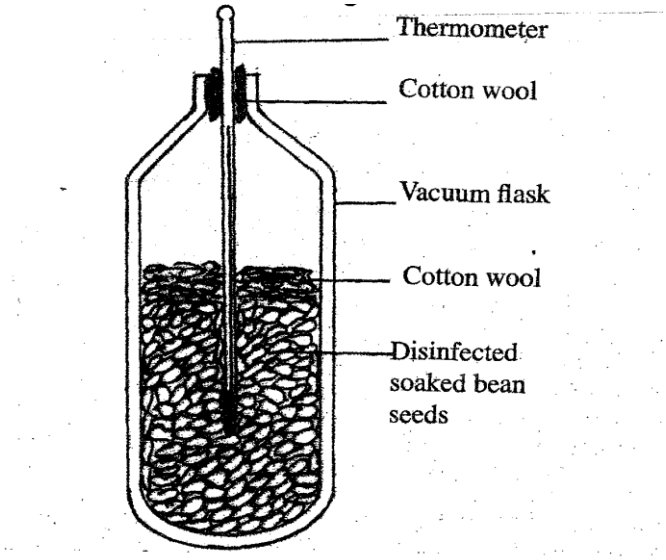
2. In an experiment, disinfected soaked bean seeds were put in a vacuum flask which was then fitted with a thermometer as shown in the diagram below.



The temperature readings were taken every morning for three consecutive

(a) Which process was being investigated? (1 mk)

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(b) (i) What were the expected results? (1 mk)

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(ii) Account for the answer in b(i) above. (2 mks)

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(c) Why were the seeds disinfected? (2 mks)

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(d) Why was a vacuum flask used in the set up? (1mk)

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(e) How would a control for this experiment be set? (1 mk)

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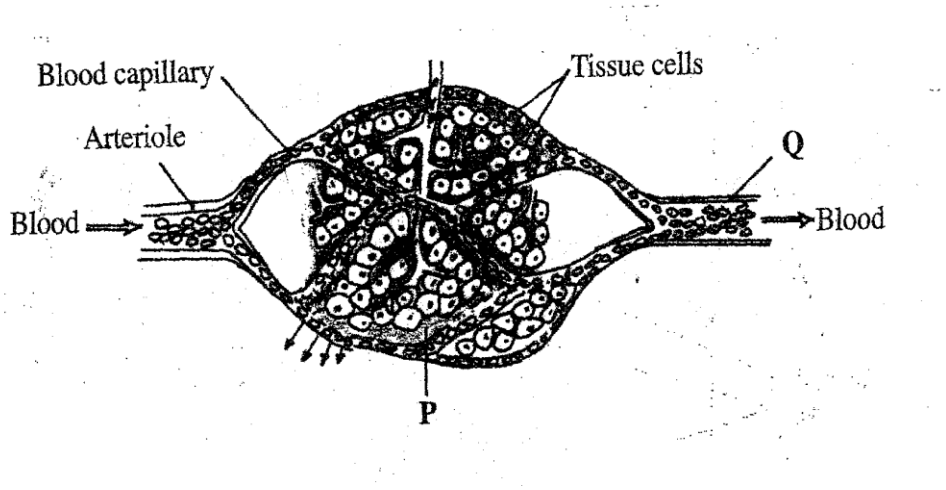
3. The diagram below shows blood circulation in a mammalian tissue.



(a) Name the parts labeled P and Q (2 mks)

P

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Q

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……

(b) Name the substances that are:

(i) Required for respiration that move out of capillaries. (1 mk)

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(ii) Removed from tissue cells as a result or respiration. (1 mk)

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(c) Explain how substances move from blood capillaries into the tissue cells. (3 mks)

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d) Name one component of the blood that is not found in the part labeled P. 1 mk)

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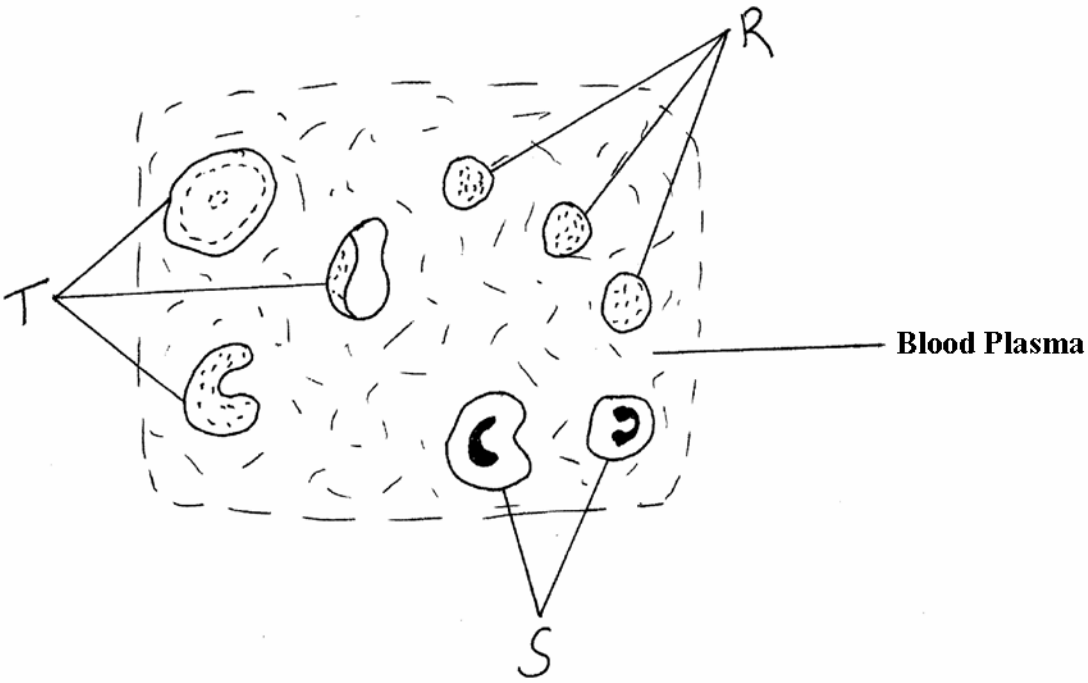
4. The figures below represent mammalian tissue as seen under a light microscope.



(a) Identify the tissue (1 mk)

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(b) Name the cells represented by (3 mks)

R

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S

……

……

T

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……

(c) State the function of structure S and R (2 mks)

S

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R

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(d) Explain how structure T is adapted to its function (6 mks)

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(e) Name heredity condition a person with structures T is suffering from. (1 mk)

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5. In a garden with plants of the same species 705 plants had red flowers while 224 had white flowers.

(a) Work out the ratio of red to white flowered plants.

(b) (i) Using letter R to represent the dominant gene, work out a cross between F_1 offspring and a white flowered plant.

(ii) What is the genotypic ratio from the cross in b (i) above? (1 mk)

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(c) What is meant by the terms (2 mks)

(i) allele

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(ii) Test - cross

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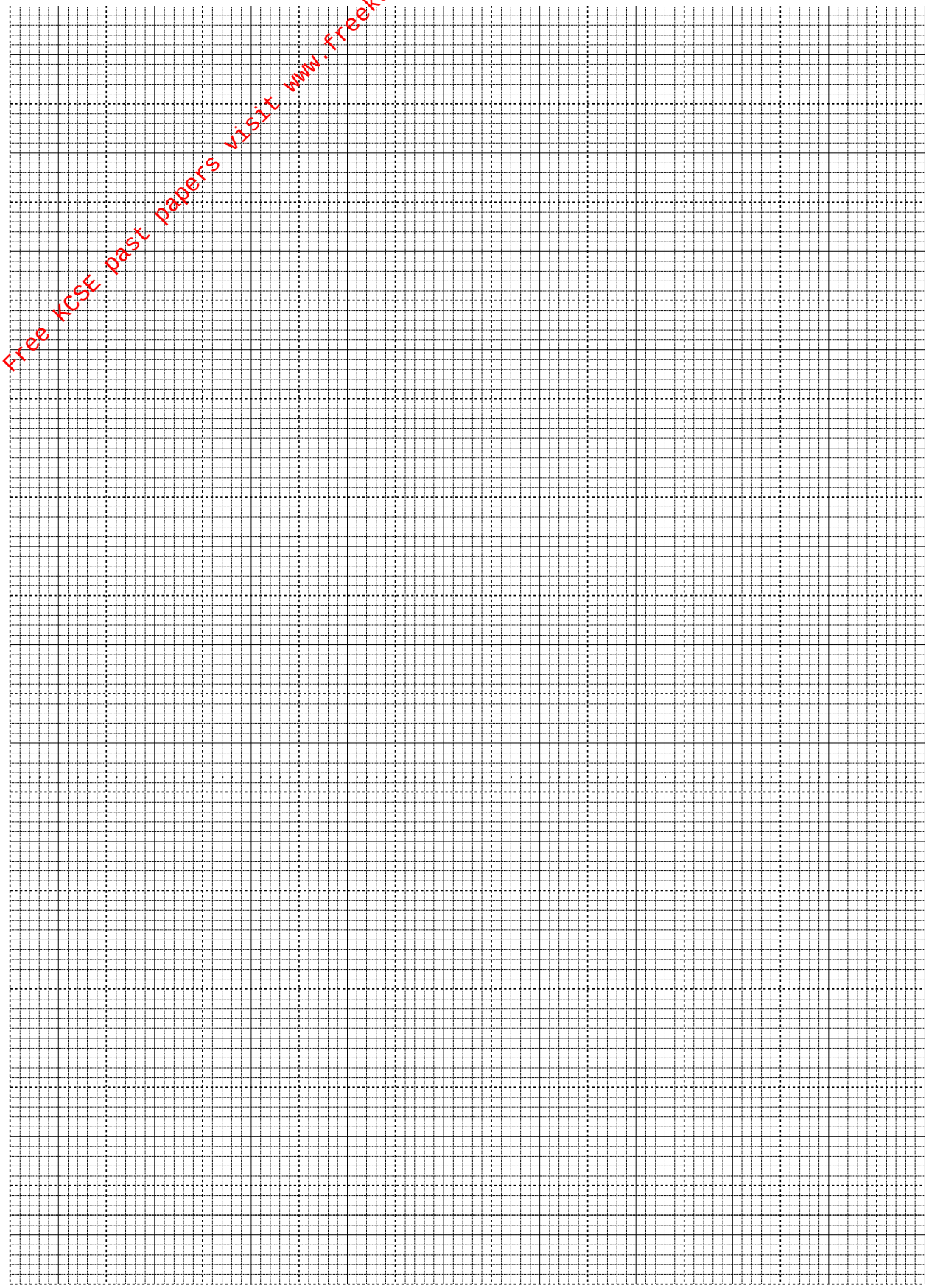
6. During germination and growth of a cereal, the dry weight of endosperm, the embryo and the total dry weight were determined at two day intervals.
The results are as shown in the table below:-

Time after planting (days)	Dry weight of endosperm (mg)	Dry weight of embryo (mg)	Total dry weight (mg)
0	43	2	45
2	40	2	42
4	33	7	40
6	20	17	37
8	10	25	35
10	6	33	39

(a) Using the same axes, draw graphs of dry weight of endosperm, embryo and the total dry weight against time:- (7 mks)



(b) What was the total dry weight on the 5th day?

(c) Account for:-

(i) Decrease in dry weight of endosperm from day 0 to 10. (2 mks)

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(ii) Increase in dry weight of embryo from day 0 to 10. (2 mks)

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(iii) Decrease in total dry weight from day 0 to 8. (1 mk)

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(iv) Increase in total dry weight after day 8. (1 mk)

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(d) State two factors within the seed and outside the seed that cause dormancy:-

(i) Within the seed: - (2 mks)

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(ii) Outside the seed: - (2 mks)

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7. (a) Name the parts of the body where mammalian blood cells are manufactured. (3 mks)

(b) Describe the functions of mammalian blood. (17 mks)

8. (a) Define pollution. (2 mks)

(b) Explain how various activities of human beings have caused air pollution. (18 mks)

  END