

Name: Index no

School: Candidate's sign

Date:

231/2
BIOLOGY
PAPER 2
JULY /AUGUST 2011
TIME: 2 HOURS

NYAMIRA DISTRICT JOINT EVALUATION TEST

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		
	2		
	3		
	4		
	5		
B	6		
	7		
	8		
	TOTAL	80	

This paper consists of 7 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing

1. In tomatoes hairy stem are produced;
 a) By a dominant gen 'H' and hairless (smooth) stem by its recessive allele 'h'. Using a punnet square, work out the outcome between two heterozygous hairy stemmed plants. (4mks)

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b) State the phenotypic ratio of the products (1mk)

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c) What will be the genotypes if the smooth variety is crossed with one of its parents? (1mk)

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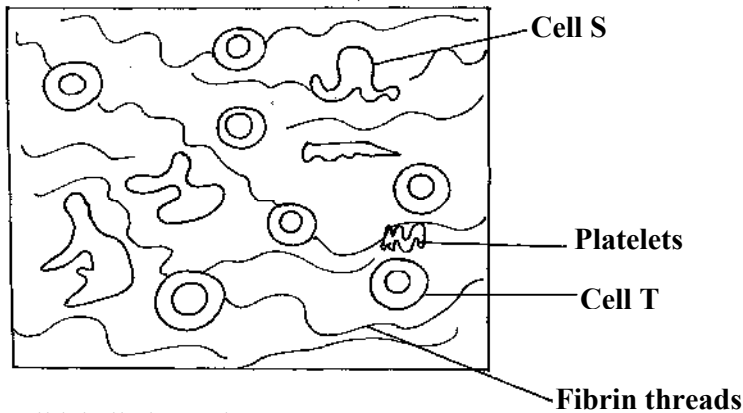
.....

d) State **two** ways in which genetics can be used in the field of Agriculture. (2mks)

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2. The diagram below represents a blood clotting formed in the body of a mammal



a. Name the cell labelled S and T. (2mks)

S.....

T.....

b. State the function of the cell labelled S in the body of a mammal. (1mk)

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c. Describe how fibrin are formed. (3mks)

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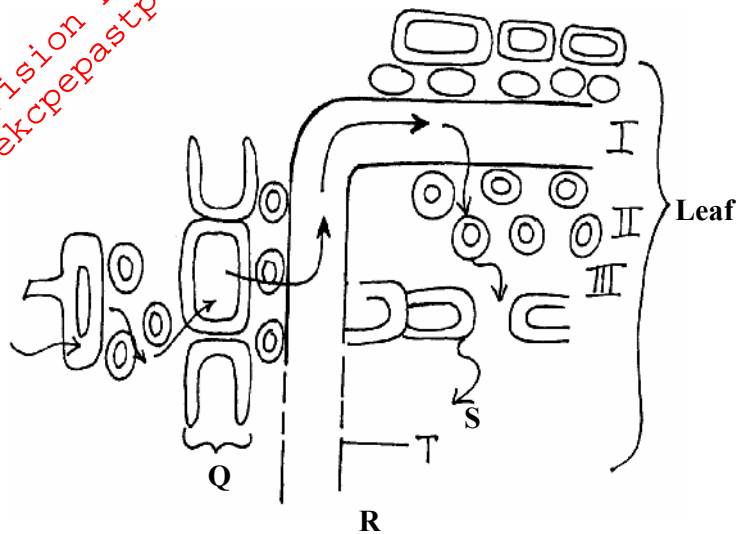
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d. Give **two** adaptations of cell labelled T to its functions. (2mks)

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.....

3. The diagram below represents a scheme diagram of movement of water from soil through leaves of a flowering plant into the atmosphere.



a. (i) Name parts labelled **Q R** and **S**. (3mks)

(ii) How is structure labelled **R** adapted to its functions. (2mks)

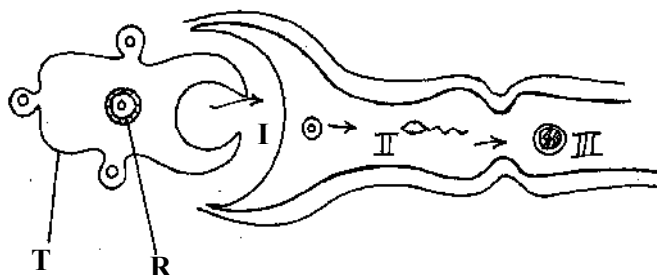
b. On the diagram draw alternative site for water loss through the leaf. (1mk)

c. Identify process (iii). (1mk)

d. How is structure T adapted to its function? (1mk)

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4. The diagram below shows some of the processes that take place in female reproductive system.



a. Name process labelled **I**. (1mk)

b. Name the structure labelled **T** and **R**. (2mks)

T.....

R.....

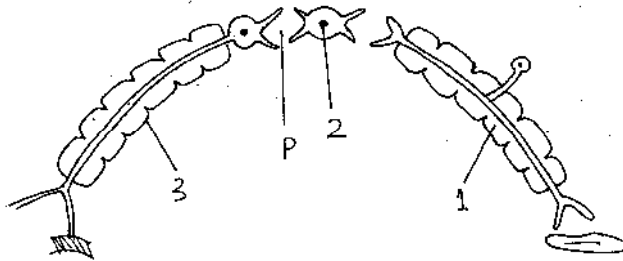
c. Identify hormones responsible for the formation of structures T and R.
(2mks)

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d. Explain what leads to processes at II. (3mks)

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5. The diagram below shows three different types of neurones along a reflex arc



a. Identify the neurone labelled 1,2 and 3 (3mks)

- 1
- 2
- 3

b. Using arrows show the direction of impulse transmission on the diagram. (1mk)

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c. Name the part of the spinal cord where the cell bodies of neurone 2 and 3 are located. (1mk)

.....

d. Describe the transmission impulse across the part labelled P. (3mks)

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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 shown in the table below.

Time after planting	Dry weight of endosperm (mg)	Dry weight of embryo (mg)	Total dry weight
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. (7mks)

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b. What was the total dry weight on day 5 (1mk)

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

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

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

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

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d. State **two** factors within the seed and two outside the seed that cause dormancy.
i. Within seed. (2mks)

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ii. Outside the seed.

(2mks)

e. Give **two** characteristics of meristematic cells.

(2mks)

7. Discuss the various evidences which show that organic evolution has taken place.

(20mks)

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8. a) State any **three** differences between monosaccharides and polysaccharides. (3mks)

b) Explain the biological functions of lipids to living organisms. (8mks)

c) Describe the laboratory test for proteins using biurets test. (2mks)

d) Describe the role of the following in mammalian digestive system.

i. Pepsin (2mks)

ii. Bile (2mks)

iii. Hydrochloric acid - (2mks)

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