

Name: Index no

School: Candidate's sign

Date:

FORM IV

**231/2
BIOLOGY
PAPER 2
PRE-MOCKS
TIME: 2 hours**

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

FORM IV

**231/2
BIOLOGY
PAPER 2**

INSTRUCTIONS TO CANDIDATES:

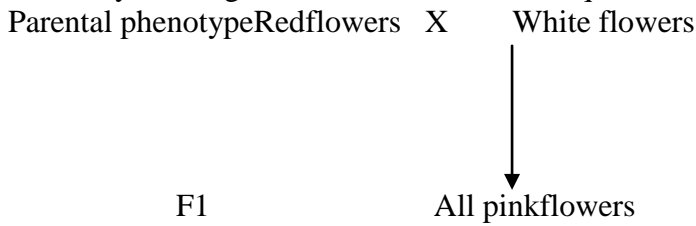
*Write your **name** and **index number** in the spaces provided.*

*Sign and write **date** of examination in the spaces provided above.*

Answer **all** the questions in this section in the spaces provided.

Answer all the questions in this section.

1. Study the diagram below and answer the questions that follow.



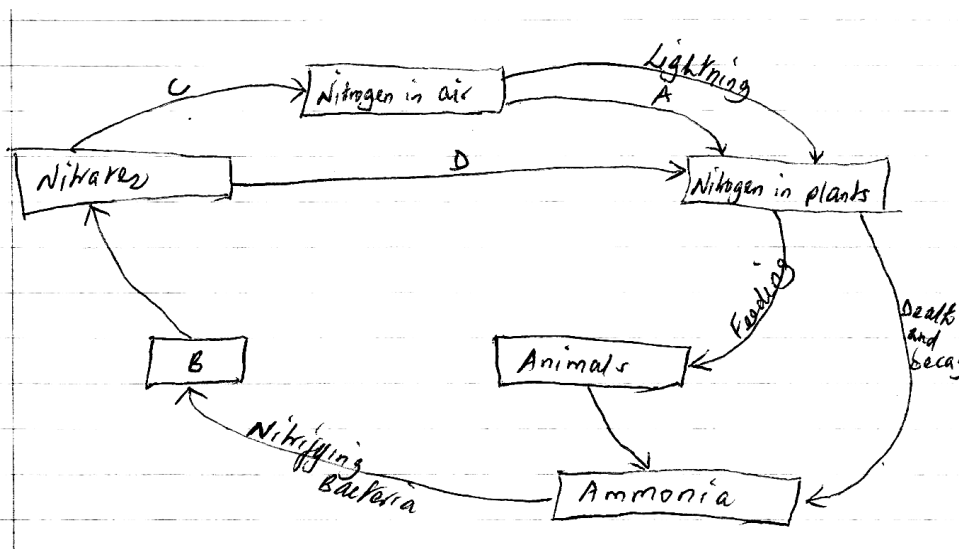
(a) State the type of dominance displayed in the above cross (1 mark)

(b) Using letter R to represent the gene for red colour and W for the white colour, state the parental genotype (2 marks)

(c) If the F1 was selfed, work out the phenotypic ratio of F2 generation

(d) 480 red flowered plants were obtained in the second filial generation when F1 was selfed, how many F2 plants were pink? Show your working (2 marks)

2. The diagram below represents the nitrogen cycle



- (a) State the process labeled
 A..... (1 mark)
 B..... (1 mark)

(b) Name the component represented by B (1 mark)

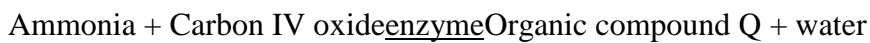
(c) Name the group of organisms labeled C (1 mark)

(d) i) Name the group of plants which promote process A (1 mark)

ii) State the part of the plant where process A takes place (1 mark)

(e) How would excess pesticide in the soil interfere with process A? (2 marks)

3. The equation below represents a metabolic process that occurs in a certain organ in the mammalian body.



a). Name the process represented in the equation above (1 mark)

b). Name the organ in which the process occurs (1 mark)

c). Why is the process important to mammals? (1 mark)

d). Identify the organic compound Q (1 mark)

e). Explain the source of ammonia in the organ named in (b) above (2 marks)

f). What happens to organic compound Q? (2 marks)

4. (a) Define the term balanced diet (2 marks)

(b) Explain the importance of each of the following during digestion in human beings
 i) Teeth (1 mark)

ii) Saliva (1 mark)

(c) State the role of each of the following in photosynthesis
 i) Light (1 mark)

ii) Chlorophyll

(1 mark)

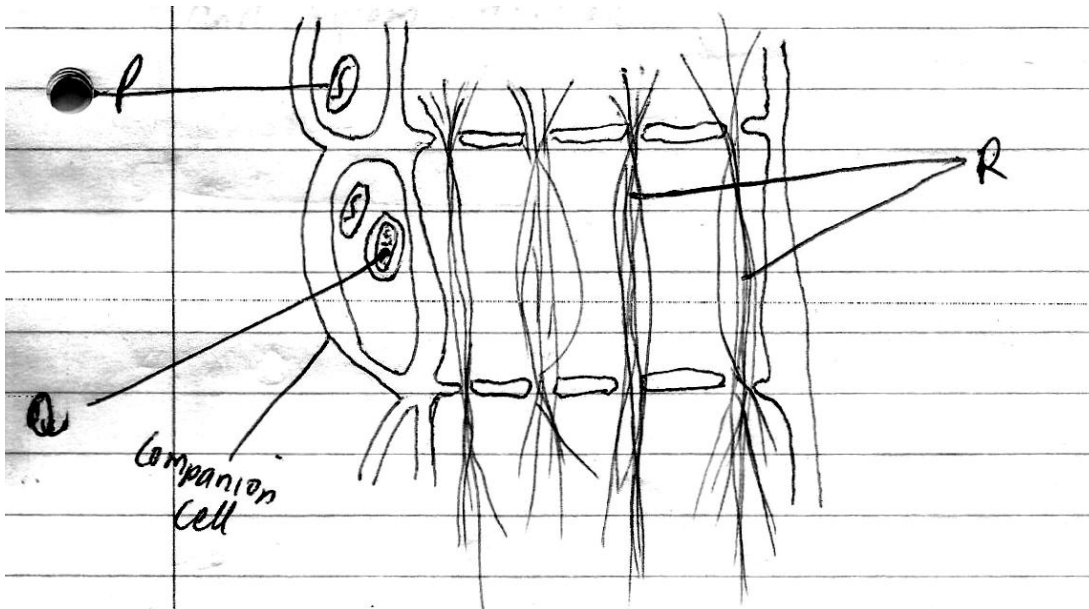
iii) Carbon IV oxide

(1 mark)

(d) State the function of sodium glycocholate in humanbeings

(1 mark)

5. The diagram below represents part of aphloem tissue



a). Name the structure labeled P, Q & R

(3 marks)

P.....

Q.....

R.....

b). State the function of the phloem tissue

(1 mark)

c). State how the functioning of the phloem tissue is affected if the companion cell is destroyed

(1 mark)

Give a reason for your answer in C (i) above

(1 mark)

d). State two structural differences between phloem and xylem tissue

(2 marks)

SECTION B (40 MARKS)

Answer question 6 (compulsory) and either 7 or 8

6. A form four carried out an experiment to investigate the rate of growth of pollen tube against time. The results were tabulated in a table shown below

Time in minutes	Length of pollen tube (mm)
0	0
20	4
40	9
60	15
80	20
100	21
120	22

a). Plot a graph of pollen tube length against time on the graph paper provided (6 marks)

b). Determine the growth rate between 80th and 34th minute (2 marks)

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c). What was the length of the pollen tube at the 90th minute? (1 mark)

.....

.....

At what time was the length of the pollen tube 18mm? (1 mark)

.....

.....

c). With reasons describe the growth pattern of the pollen tube between

i) 0-80 minutes (2 marks)

.....

.....

ii) 80-120 minutes (2 marks)

.....

.....

d). Give the importance of the growth of pollen tube to the plant (2 marks)

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