

231/3
BIOLOGY
PAPER 3
(PRACTICAL)
December 2021
TIME: 1¼ HOURS

Name:.....Index No:.....

School:.....

Candidate's Signature:.....

Date:.....

SAMIA SUB-COUNTY JOINT EVALUATION
Kenya Certificate of Secondary Education
BIOLOGY PAPER 3
(PRACTICAL)

INSTRUCTIONS TO CANDIDATES:

- a) Write your name and index number in the spaces provided above
- b) Sign and write the date of the examination in the spaces provided
- c) Answer **ALL** the questions in this paper
- d) You are required to spend the first 15 minutes of the 1¼ hours allowed for this paper reading the whole paper carefully before commencing your work.
- e) The paper consists of 11 printed pages
- f) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate' Score
1	11	
2	16	
3	13	
Total Score	40	

1. Using the piece of string provided, tie the visking tubing tightly at one end. Put 2cm^3 of solution P into the visking tubing using a dropper to avoid spilling. Then tightly tie the other end and place it in a boiling tube containing 2cm^3 of iodine solution.

- a) (i) Leave it for 5 minutes then record your results below. (1 mark)

Observation:
.....

- (ii) Account for your results answer in a (i) above. (2 marks)

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- b) (i) Make a transverse section of specimen D provided and made a labeled drawing. (3 marks)

- (ii) Cut a strip of 4cm long by 2cm wide from the banana peel (of specimen D) and place on a petri dish containing solution L. Record your observation after 10 minutes in the table below. (2 marks)

	Length at start of experiment	Length at end of experiment
Strip of banana peel		

- (iii) Account for your answer in b(ii) above. (3 marks)

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.....
.....

c) State the role of the process under investigation in organisms in 1a) (i) and in 1b) (ii) above.

(3 marks)

Process in 1 a) (i)

(1 mark)

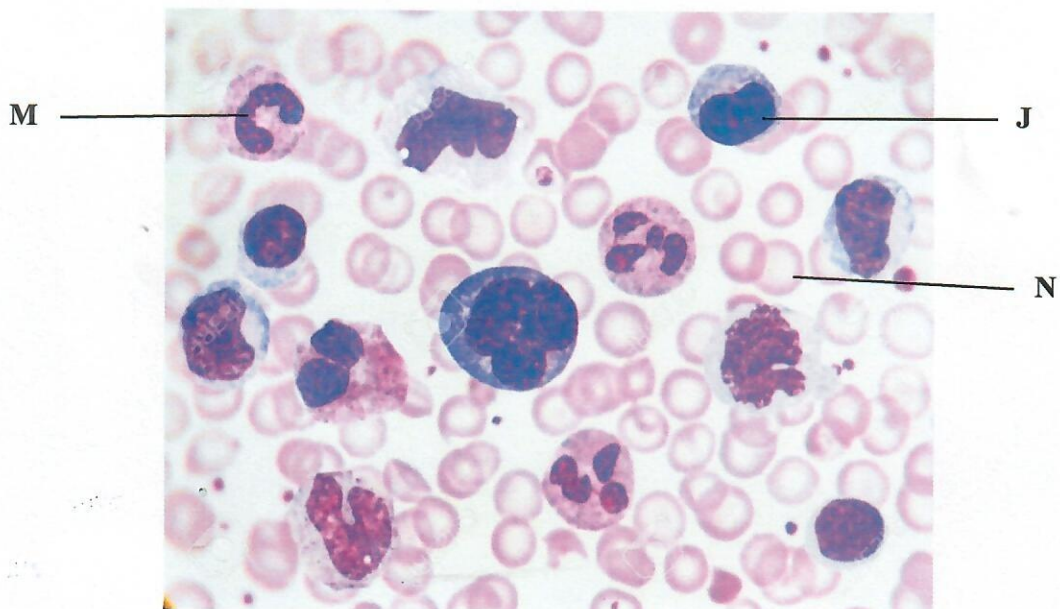
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Process in 1 b) (ii)

(1 mark)

.....

2. Below is a photomicrograph of blood smear showing several elements.



a) On it label any four elements of blood

(4 marks)

b) Briefly explain the mode of action of elements M and J

(2 marks)

M.....

 J.....

c) What are the effects of high altitude on the numbers of element N.?

(1 mark)

.....

d) State the function of element N and explain one functional adaptation of element N.

(i) Function of N

(1 mark)

.....

(ii) Functional adaptation of N

(2 marks)

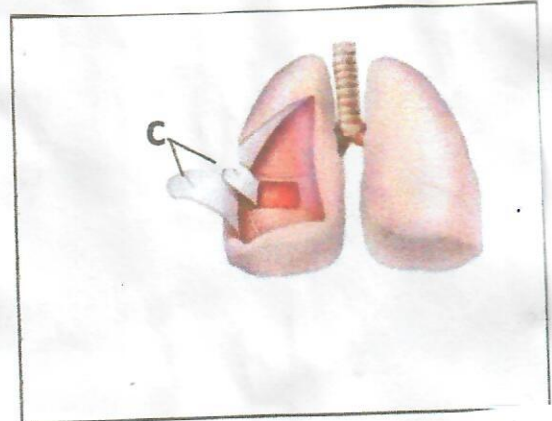
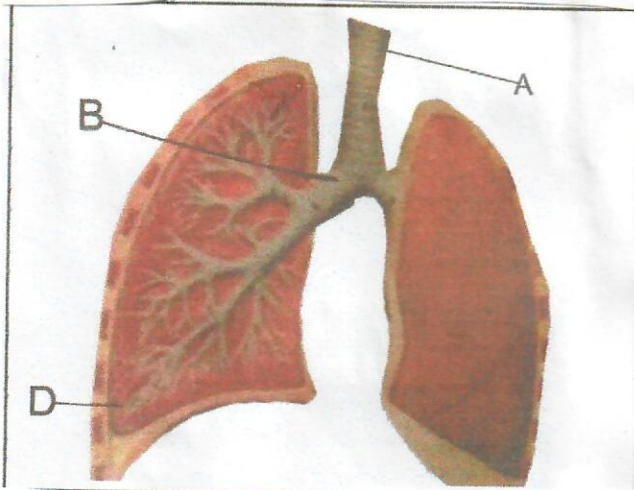
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e) Study the diagrams below and answer the questions that follow.



(i) Name the parts labeled A, B, C and D

(2 marks)

A.....

B.....

C.....

D.....

(ii) State the adaptation of the part labeled A to its function.

(2 marks)

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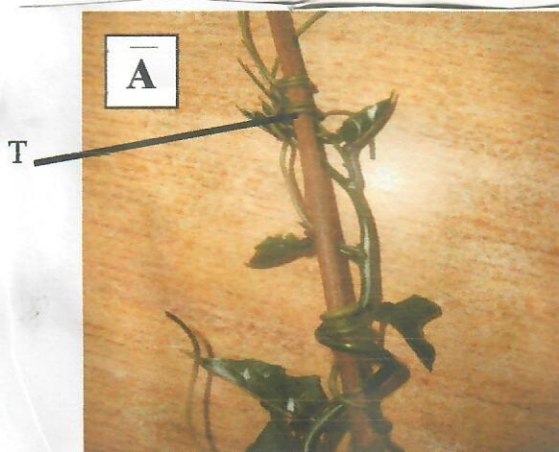
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f) Identify the structures that perform similar functions as D above in: -

(i) Amoeba..... (1 mark)

(ii) Fish..... (1 mark)

3. (a) Examine photograph A, B1 and B2 carefully and answer the questions that follow. B2 was extracted from B1



B1



- (i) What name is given to the coiled part labeled T found on specimen A (1 mark)

T.....

- (ii) Name the type of response exhibited by the coiled part on specimen A (1 mark)

.....

.....

(iii) Name the stimulus responsible for the response named in (ii) above. (1 mark)

.....
.....

(iv) Explain how the response exhibited by the coiled part on specimen A occurred. (2 marks)

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.....

(v) State the biological significance of the response described in (iv) above to the survival of the specimen. (1 mark)

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.....

(b) Use photographed specimen labeled **B1** and **B2** above to answer the questions below.

(i) State the agent of pollination for the specimen above. (1 mark)

.....

(ii) Give a reason for your answer (1 mark)

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.....

(iii) Describe the external features of leaves of the specimen **B2** (3 marks)

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(iv) Based on the floral parts, state the class to which specimen **B** belongs. (1 mark)

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(v) Give a reason for your answer in (iv) above (1 mark)

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