

NAME..... ADM NO.....

SCHOOL..... CANDIDATE'S SIGN.....

DATE

231/2
BIOLOGY
FORM 3
END OF TERM THREE
TIME: 2 HOURS

END OF TERM (III) EXAMINATION -2019

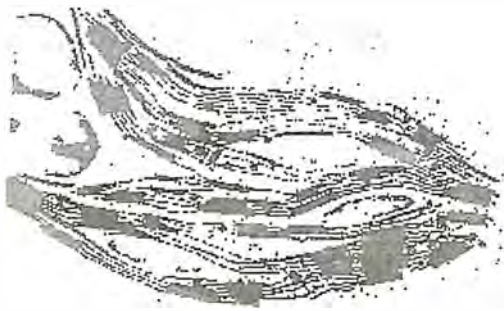
Kenya Certificate of Secondary Education (K.C.S.E)

231/2
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For examiner's use only

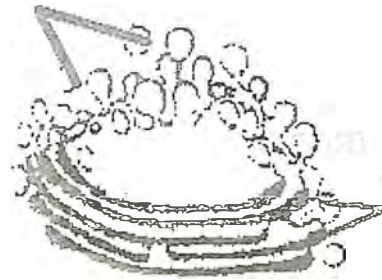
QUESTIONS	MAXIMUM SCORE	QUESTION	SCORE
A	40	1-5	
B	40	6-8	
TOTAL	80		

1. The figures below show cell organelles



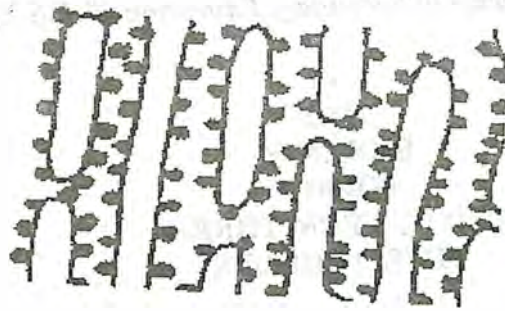
A x5,000

Vasicles



B

Stacked membrane



C

(a) Identify organelle B and C

(2mks)

B _____

C _____

(b) State two functions of organelle B

(2mks)

(c) Explain why organelle B is usually close to C in a cell

(1mk)

(d) On figure A name the part where the light stage of photosynthesis occurs

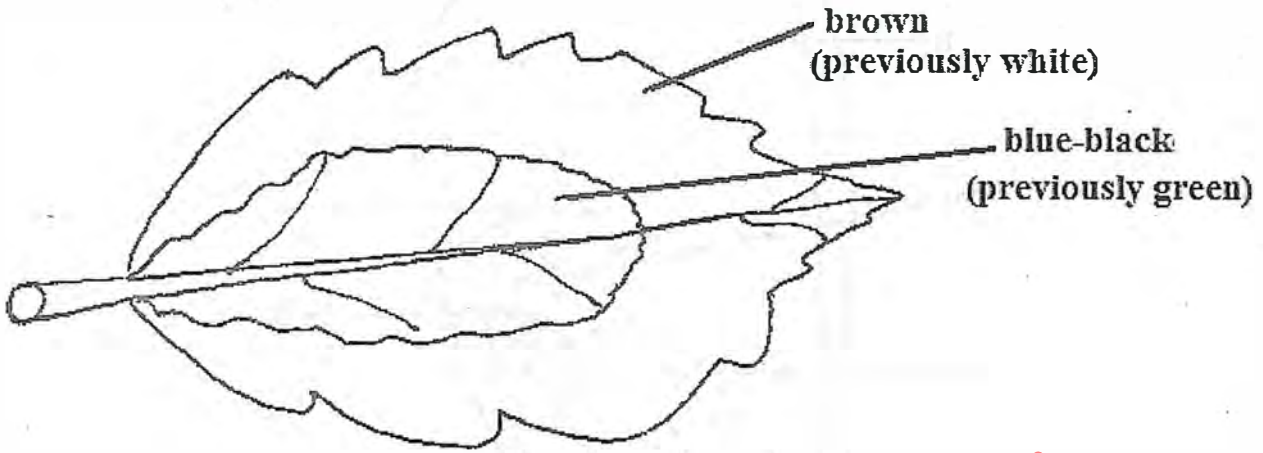
(1mk)

(e) Calculate the actual size of organelle A, given that its length is 5.5mm

(2mks)

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Q2. The diagram below represents a set up to investigate some aspect of photosynthesis. The colours were observed after testing the leaf for starch.



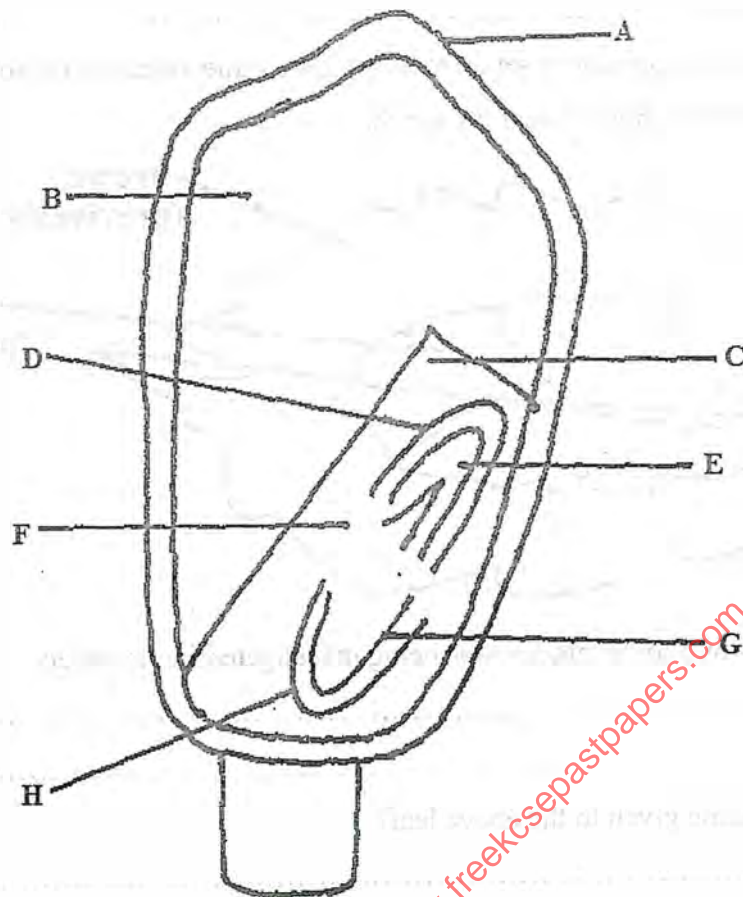
(a) Which aspect of photosynthesis was being investigated in the set up (1mk)

(b) What is the name given to the above leaf? (1mk)

(c) The leaf was exposed to light for 6 hours before being tested for starch. Account for the observations made. (4mks)

(d) What results would be expected if the leaf was kept in the dark for 48 hours before being tested for starch? (2mks)

Q3. The diagram below shows the longitudinal section of a maize grain.



(a) Name the parts labelled B and H (2mks)

B _____

H _____

(ii) State the function of the part labelled D and G (2mks)

D _____

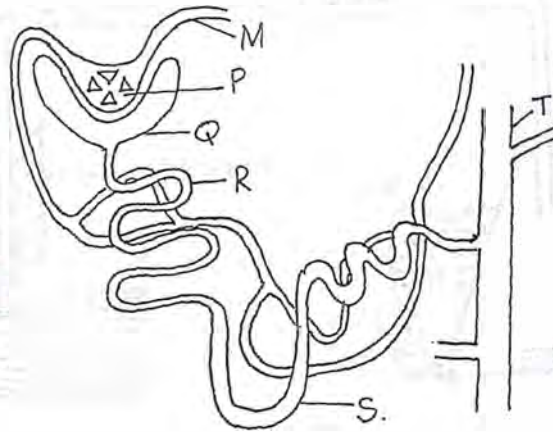
G _____

(b) Account for the observation made in each of the part labelled B and C when iodine solution is applied on the cut surfaces.

B (2mks)

C (2mks)

Q4 The following diagram represents a section of a nephron. Study it and answer the questions that follow.



(a) Name the parts labelled M, Q, R and T (4mks)

M _____

Q _____

R _____

T _____

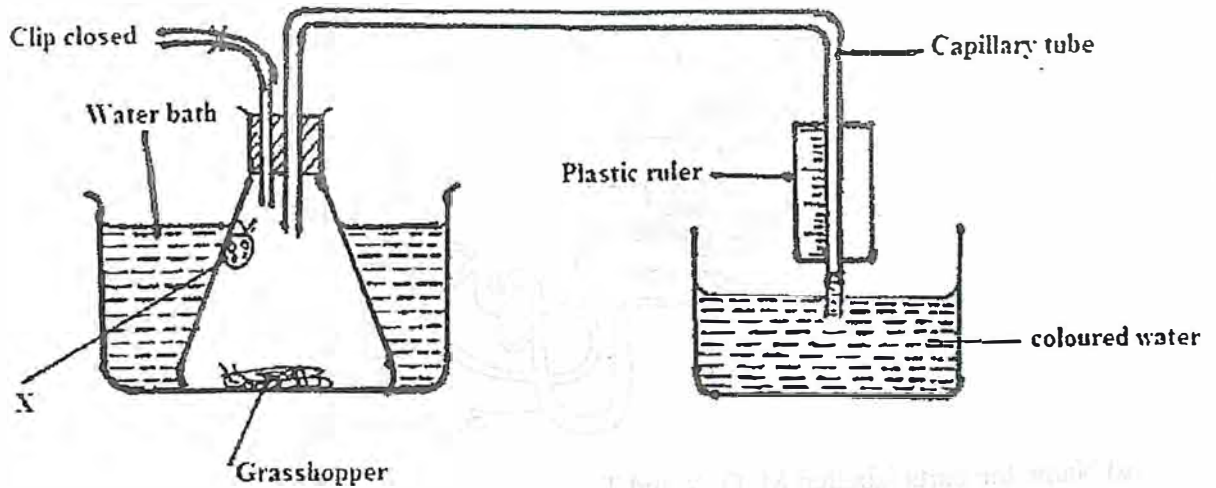
(b) What is the main structural cause of high pressure generated in P (1mk)

(c) Name one substance whose concentration increases by the time substances get to part T and explain why (2mks)

(d) Which condition would occur if a person lacks adequate amounts of anti-diuretic hormone (1mk)

Q5. (a) Name the main products of glycolysis (1mk)

(b) The diagram below illustrates an experiment to determine the rate of respiration in a small insect



(i) Name the chemical compound labelled X and state its function (2mks)

.....

(ii) What changes would you expect to observe in the level of the coloured water in the capillary tube after the experiment has run for 10 minutes (1mk)

.....

(iii) Explain the changes you have stated in (b) (ii) above. (3mks)

.....

(iv) Why was it necessary to place the flask in a water bath? (2mk)

.....

SECTION B (40MARKS)

Answer questions 6 (compulsory) and either 7 or 8 in the spaces provided after question 8

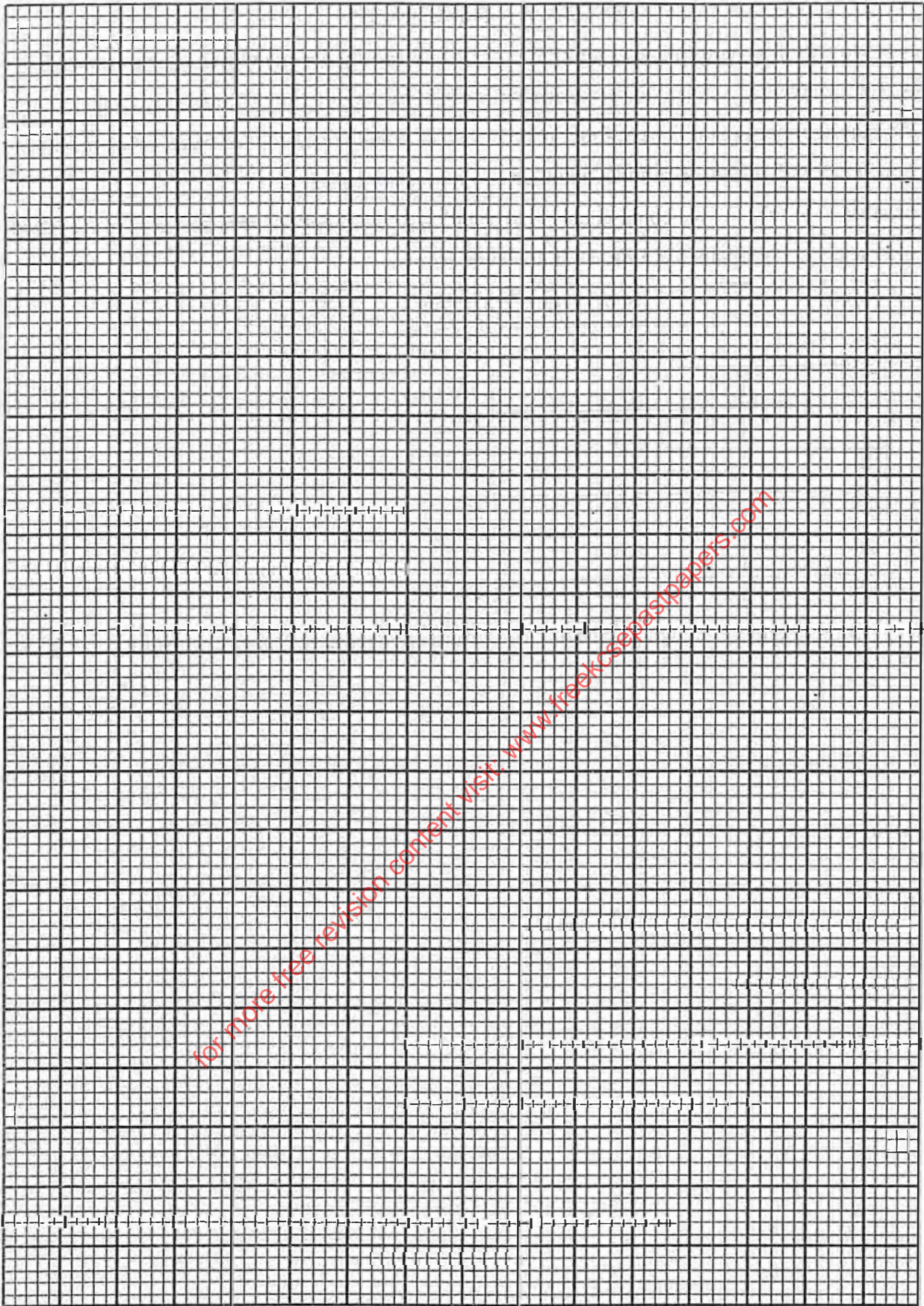
6. Some students used a model to demonstrate the effect of sweating on human body temperature. Two boiling tubes A and B were filled with hot water. The temperature of water in the tubes was taken at the start of the experiment and then at 5 minutes interval. The surface of tube A was continuously wiped with a piece of cotton wool soaked in methylated spirit. The results obtained are shown in the table below.

Time	Temperature ⁰ c in tubes	
	A	B
0	80	80
5	54	67
10	40	59
15	29	52
20	21	47
25	18	46

- (a) On the same axes, plot graphs of temperature of water in the tubes against time

(7mks)

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(b) At what rate was the water cooling in tube A

(2mks)

.....
.....

(c) Why was tube B included in the set up (1mk)

(d) Account for the rate of cooling in tube A (3mks)

(e) State two process of heat loss in tube B (2mks)

(f) What would be the expected results if tube A was insulated (1mk)

(g) What would the insulation be comparable to in
(i) Birds (1mk)

(ii) Mammals (1mk)

(h) Name the structures in human body that detect
(i) External temperature changes (1mk)

(ii) Internal temperature changes (1mk)

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