NAME____INDEX NUMBER_______________/_____

CANDIDATE'S SIGNATURE______________

DATE__________________________________

KENYA CERTIFICATE OF SECONDARY EDUCATION

231/3

BIOLOGY PAPER 3

(PRACTICAL)

1 ¾ Hours

ALLIANCE HIGH SCHOOL

INSTRUCTIONS TO CANDIDATES

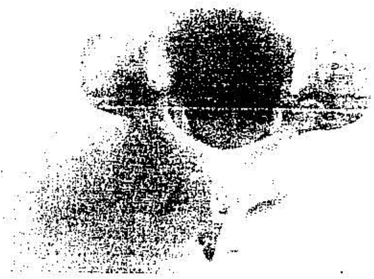
(a) Write your name and index number in the spaces provided above.
(b) Answer all the questions in the spaces provided.
(c) You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
(d) This paper consists of 6 printed pages.
(e) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	11	
2	16	
3	13	
TOTAL SCORE	40	

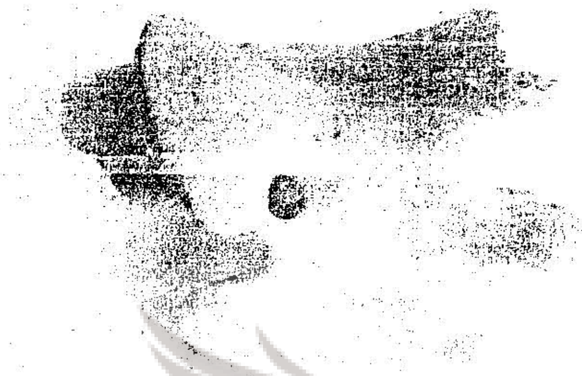
1. You are provided with substances labeled P and Q (food substances), dilute hydrochloric acid, sodium hydrogen carbonate powder and Benedict's solution.

You are required to carry out tests to determine the food substances in P and Q. (10 Marks)

Substance	Food substance being tested for	Procedure	Observations	Conclusions
P				
Q				

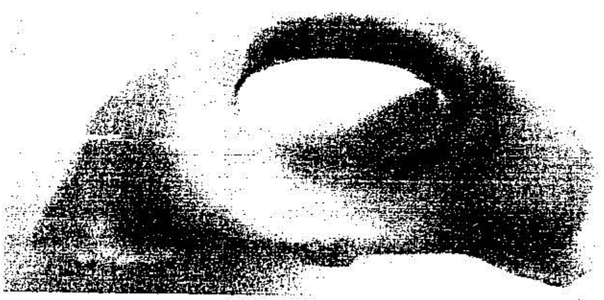


K1



K2

M



N

i. Name the region from which the bones were obtained (1 Mark)

ii. State the view of specimen K2 (1 Mark)

iii. Identify the bones (3 Marks)

K

M

N

iv. State three characteristics of the bone in photographs labeled K (3 Marks)

3. You are provided with a specimen labeled V, iodine solution, visking tubing, 50 ml measuring cylinder, scalpel, glass rod, string, beaker and distilled water.

Make a transverse section of the specimen V.

a) Draw and label the section (3 Marks)

2. You are provided with a specimen labeled J.

a) Identify the class to which the specimen belongs. (1 Mark)

Pisces

b) Stroke the specimen on the lateral side from head end to the tail end. Repeat the stroking from tail end to the head end.

i) Record your observations. (2 Marks)

Observe the arrangement of the scales.

ii) Record your observations. (1 mark)

The scales are arranged facing backwards.

iii) State the significance of the arrangement of the scales. (2 marks)

It reduces the resistance of

c) Using **observable features only**, state how the animal is adapted to living in its habitat. (3 Marks)

d) The photographs below are bones obtained from the same region of the mammalian body. Photographs labeled K1 and K2 are different views of the same bone while M and N are views of different bones.

b) Work out the magnification of your drawing. (2 Marks)

c) What name is given to this type of fruit? (1 Mark)

d) Slice off about 2cm thick disc from the specimen. Peel it. Place the piece in a beaker and mash it into a paste using a glass rod. Add 20ml of distilled water and stir. Tie one end of the transparent tubing provided. Decant the extract into the visking tubing and tie the other end tightly. **ENSURE THERE IS NO LEAKAGE AT BOTH ENDS OF THE TUBING.** Rinse the outside of the tubing with distilled water. Immerse the tubing with its content in 100ml beaker containing iodine solution. Allow standing for 20 minutes.

Record your observations in the table below (4 Marks)

	Extract inside the tubing	Iodine solution outside tubing
Before experiment		
After experiment		

e) Account for the results obtained above (3 Marks)