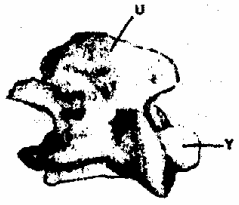
THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
Biology Paper 3
Practical
2006

1. *The photographs below are of bones obtained from the same region of a mammalian body.* Photographs labelled K are different views of the same bone while M and N are views of different bones.

Ventral view Posterior view

Bone K



Side view

Bone M

Posterior view

Bone N

(a) Name the region from which the bones were obtained. (1 mark)

(b) Identify the bones. (3 marks)

M

N

(c) State three characteristic features of the bone in photographs labelled K. (3 marks)

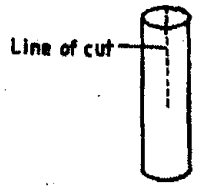
(d) Name the structures that fit in the opening labelled P in the photographs of bone K. (2 marks)

(e) State the functions of the parts labelled S and T in photographs of bone K. (2 marks)

(f) Name the structures that articulate with the parts labelled V in the photographs of bone K. (1 mark)

(g) Name the parts labelled U and Y in the photograph of bone M and R in the photograph of bone N. (3 marks)

2. You are provided with two pieces of plant material labelled specimen D. Using a scalpel cut a slit halfway through the middle of each piece as shown in the diagram below.



Place one piece in the solution labelled L_1 and the other in solution labelled L_2. Allow the set up to stand for 30 minutes.

(a) After 30 minutes remove the pieces and press each gently between the fingers.

(i) Record your observations.

L_1 ..... (1 mark)

L_2 ..... (1 mark)

(b) Examine the pieces.

(i) Record other observations beside those made in (a) (i) above. (3 marks)

(ii) Account for the observations in (a) (i) above. (5 marks)

(ii) Account for the observations in (b) (i) above. (2 marks)

3. You are provided with three sets of seedlings labelled A,B and C. Examine them.

(a) State the conditions under which each set was grown. (3 marks)

(b) State four differences between the seedlings in set A and B. (4 marks)

(c) (i) Name the phenomenon exhibited by seedlings in set B. (1 mark)

(ii) Give a reason why plants exhibit the phenomenon named in (c)(i) above. (1 mark)

(d) Name the response exhibited by the seedlings in set C. (1 mark)

(e) Explain how the response named in (d) above occurred. (3 marks)