FORM FOUR KCSE 2018

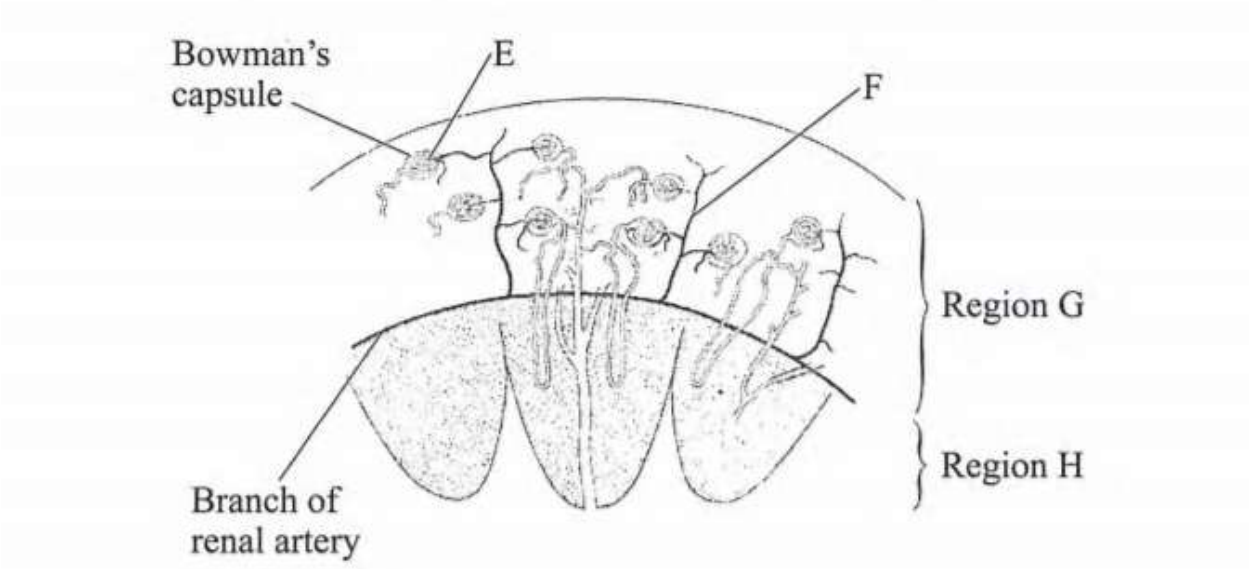
BIOLOGY PAPER 2 QUESTIONS

Answer all the questions in the spaces provided.

SECTION A (40 marks)

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

1. **The diagram below illustrates a section of the mammalian kidney.**



2.

(a) Name the structures labelled E and F. Region H (1 marks)

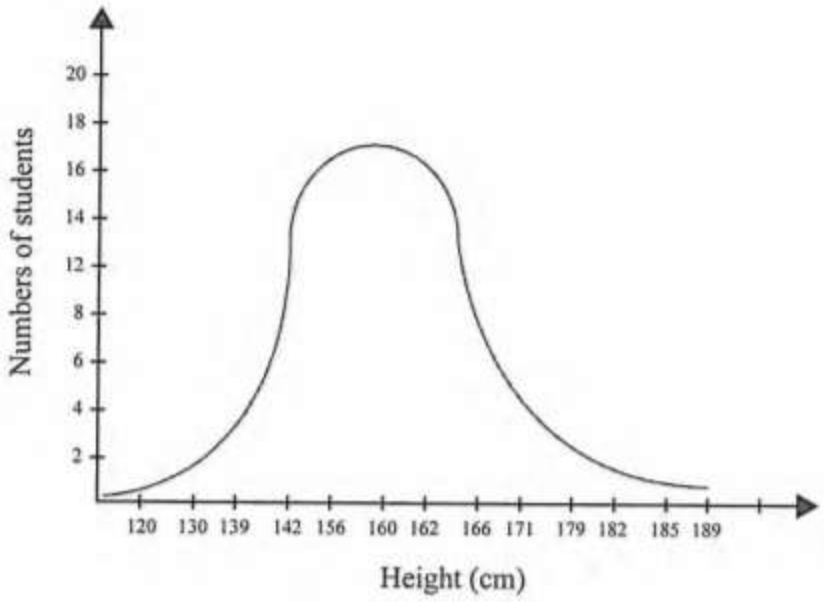
E .....(1 marks)

F.....(1 marks)

(b) Explain the processes that take place in the regions labelled G and H. Region G(3 marks)

Region H(3 marks)

2. Below is a graphical representation of students' height in a classroom.



(a) Name the type of curve illustrated.

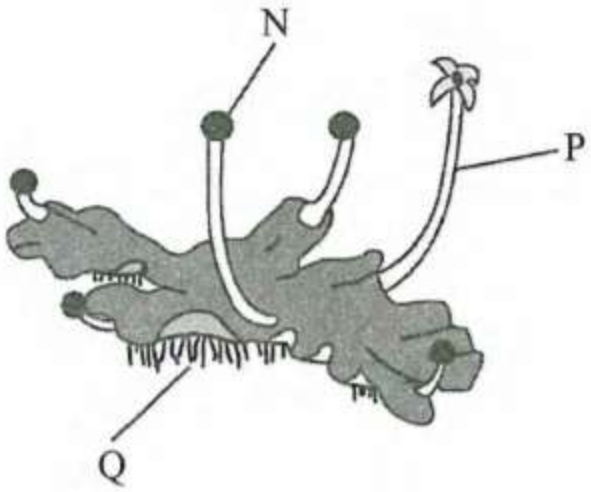
(b) (i) State the type of variation represented by the curve.

(ii) State two meiotic processes that lead to variation among organisms. (2 marks)

(iii) Explain the role of variation in organisms.(2 marks)

(c) EKplain the need for genetic counselling in present day health facilities. (2 marks)

5. The photograph below represents a plant in a certain Division.



(a) (i) Name the Division to which the plant belongs.(1 marks)

(ii) With reference to the photograph, state three observable features of the Division named in a(i) above. (3 marks)

(b) Name the parts labelled N and P.

N.....(1 marks)

P.....(1 marks)

(c) Explain how the part labelled Q is adapted to its functions.(2 marks)

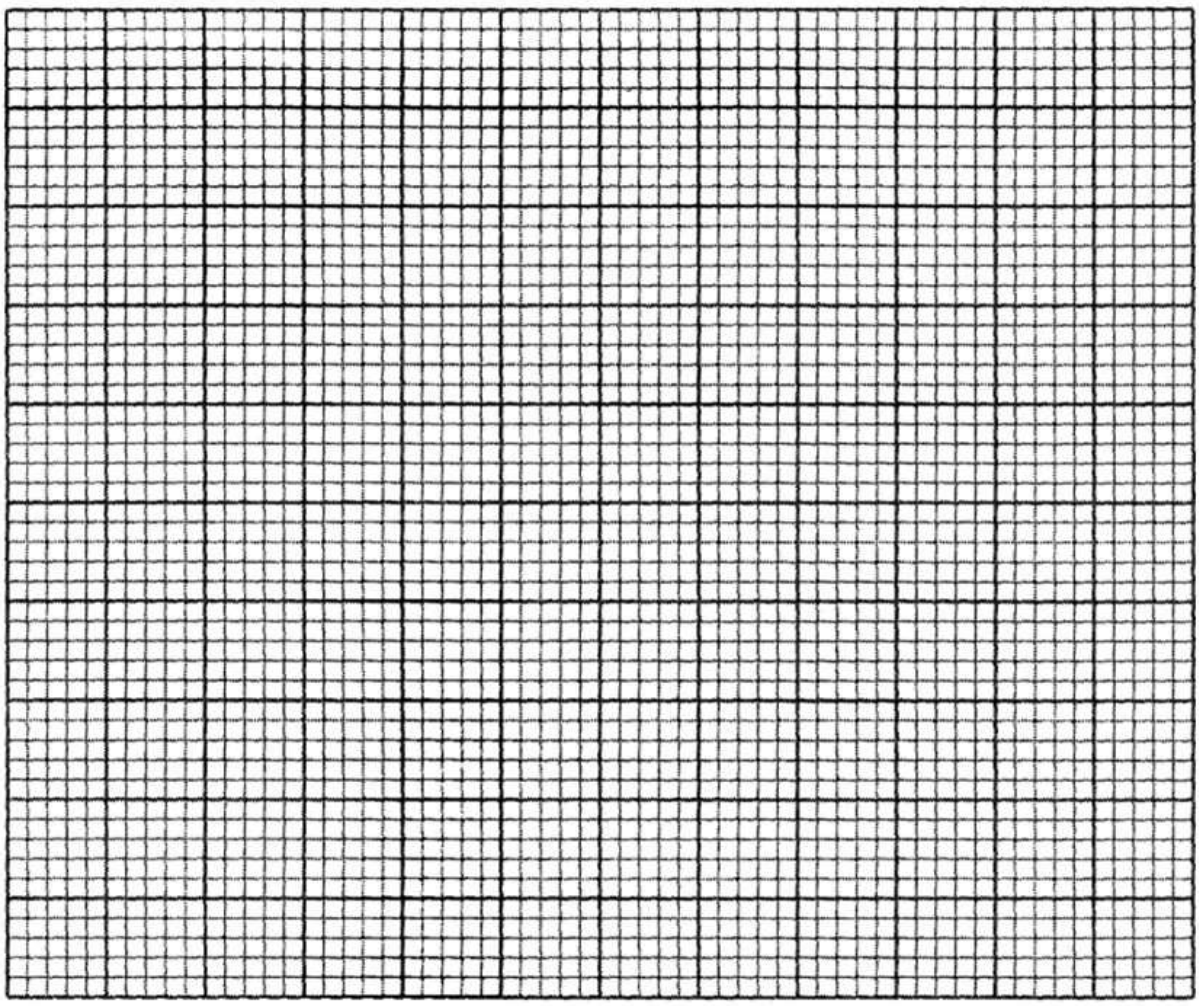
SECTION B (40 marks)

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

6. The effect of auxin concentration on growth response of two parts of a plant, X and Y was investigated over a period of time. The results were tabulated as shown in the table below.

Concentration of Auxin (in parts per million)	10^{-6}	10^{-5}	10^{-4}	10^{-3}	10^{-2}	10^{-1}	1	10^{1}	10^{2}
Percentage inhibition /stimulation on part X	0	40	55	40	0	−45	−90	0	0
Percentage inhibition /stimulation on part Y	0	0	0	25	65	155	210	125	−25

(a) On the same axis, draw line graphs of the effect on growth of the two parts, X and Y (percentage inhibition or stimulation) against the concentration. (8 marks)



(b) With reasons, name the two parts of the plant, X and Y. X.....(1 marks)

Reason.....(1 marks)

Y.....(1 marks)

Reason.....(1 marks)

(c) From the graph identify: (i) the point at which the percentage stimulation was the same for both X and Y. (1 marks)

(ii) the optimum concentration of auxins required for part Y (1 marks)

(d) State three ways in which the effects of auxins on plants is applied in flower farming.(3 marks)

(e) Distinguish between simple and conditioned reflex action (3 marks)

7. (a) Describe the mode of reproduction in a named fungus.(5 marks)

(b) Describe the role of hormones in the human menstrual cycle. (15 marks)

8. Describe what happens to a meal rich in proteins along the alimentary canal from ingestion to egestion. (20 marks)