

Name ..... Index Number .....

Candidate's Signature ..... Date .....

**Instructions to candidates**

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination in the spaces provided above.
- This paper consists of **two** sections; **A** and **B**.
- Answer **all** the questions in section **A** in the spaces provided.
- In section **B** answer question **6 (compulsory)** and either question **7** or **8** in the spaces provided after question **8**.
- This paper consists of **12 printed pages**.
- Candidates should check the question paper to ascertain that **all the pages** are printed as indicated and that **no questions** are missing.
- Candidates should answer **all the questions** in **English**.



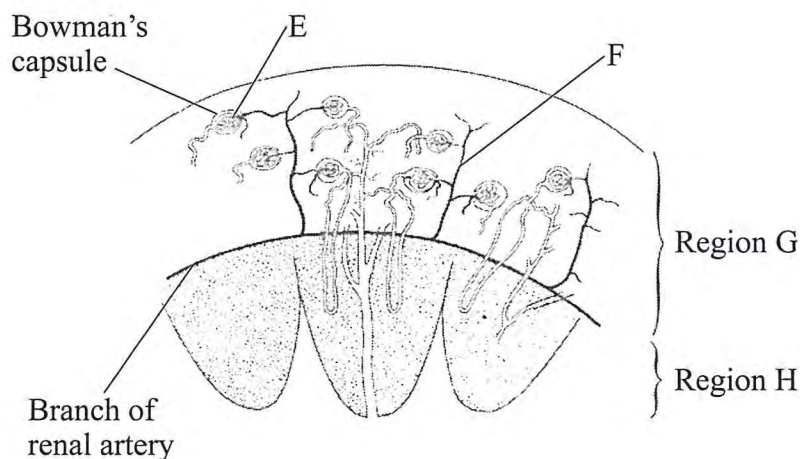
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Section	Question	Maximum Score	Candidate's Score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
		20	
Total Score			

**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.



(a) Name the structures labelled E and F.

E ..... (1 mark)

F ..... (1 mark)

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

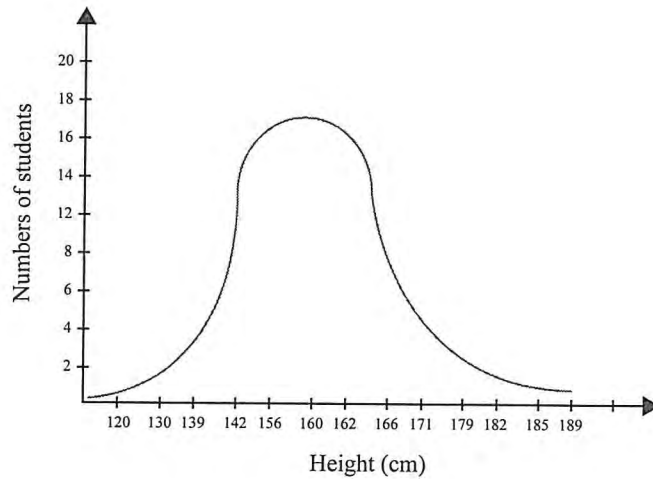
Region G (3 marks)

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.....  
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Region H (3 marks)

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.....  
.....

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



(a) Name the type of curve illustrated. (1 mark)

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(b) (i) State the type of variation represented by the curve. (1 mark)

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

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

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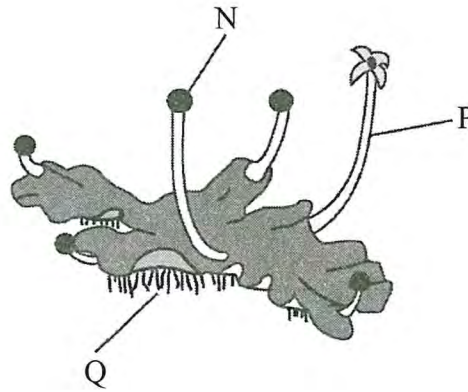
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(c) Explain the need for genetic counselling in present day health facilities. (2 mark)

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



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

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

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(b) Name the parts labelled N and P.

N ..... (1 mark)

P ..... (1 mark)

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

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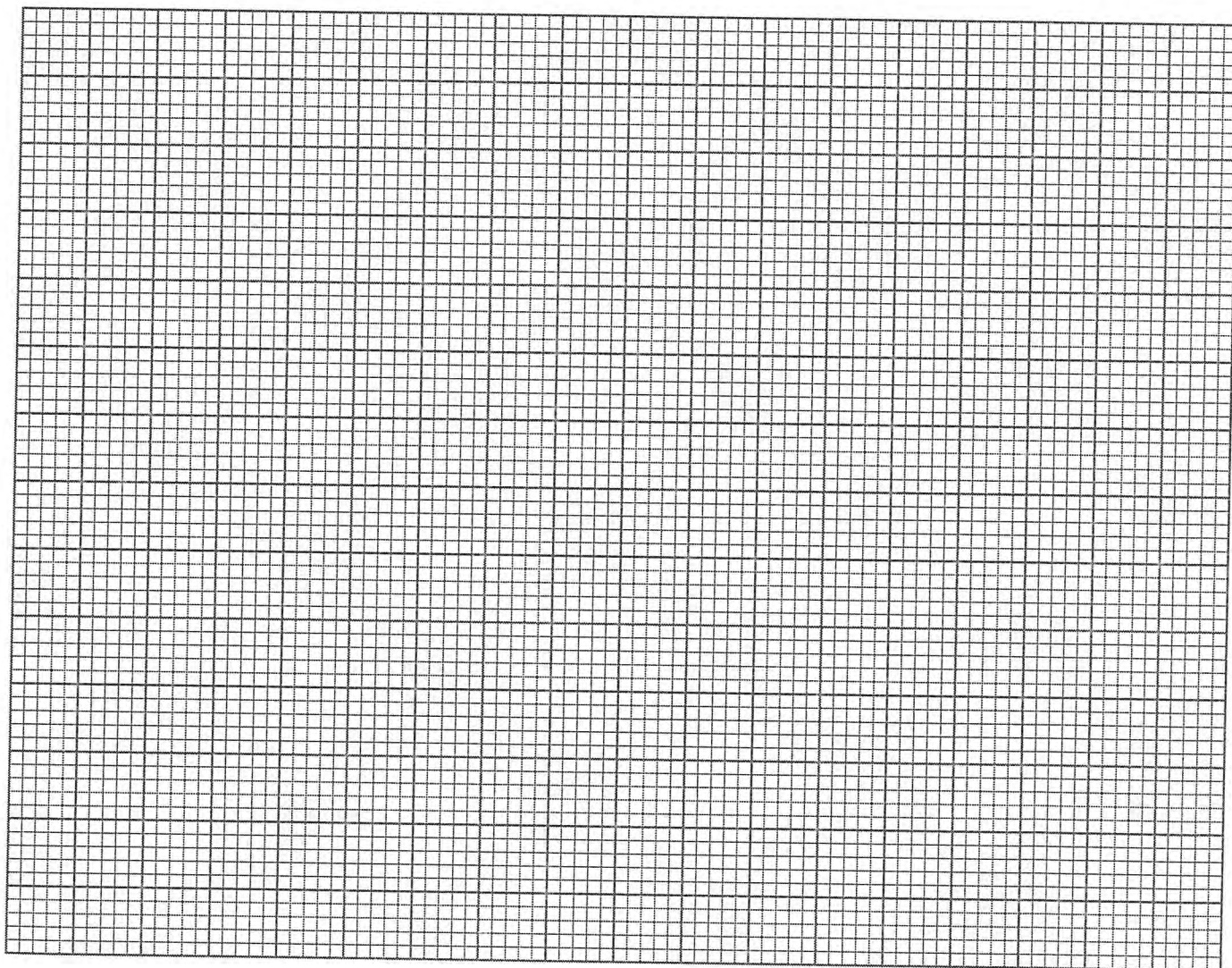
## SECTION B (40 marks)

Answer question 6 (compulsory) and either question 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 mark)

Reason ..... (1 mark)

Y ..... (1 mark)

Reason ..... (1 mark)

(c) From the graph identify:

(i) the point at which the percentage stimulation was the same for both X and Y. (1 mark)

.....

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

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

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

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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)









