

24.4.3 Biology Paper 3 (231/3)

- 1 (a) Cervical region/neck region. *(1 mark)*
- (b) K - Atlas.
M - Axis.
N - Cervical vertebra. *(3 marks)*
- (c) Wide neural canal.
Absence of centrum.
Small neural spine. *(3 marks)*
- (d) Spinal cord.
Odontoid process. *(3 marks)*
- (e) S - Facets for articulation.
T - For passage of blood vessels. *(2 marks)*
- (f) Occipital condyle. *(1 mark)*
- (g) U - Post Zygapophysis.
Y - Odontoid process.
R - Centrum. *(3 marks)*
2. (a) (i) The stem from L₁ is firm/hard/stiff.
The stem from L₂ is soft. *(2 marks)*
- (ii) Solution L₁ is hypotonic to the cell sap;
Water moved into the stem cells by osmosis;
Cells of the stem become turgid;
Solution L₂ is hypertonic;
Water moves out of the cells by osmosis making the cells flaccid.
(5 marks)
- (b) (i) Material in L₁ - The slit opens wider; and they bend backwards.
Material in L₂ - The strips remain close together. *(3 marks)*
- (ii) In L₁ cells in the inner surface/cut surface enlarged more because they took in more water; (by osmosis) than the outer cells which have cuticle.
(3 marks)
3. (a) (i) Set A - Normal conditions/in light.
(ii) Set B - In the dark.
(iii) Set C - Subjected to unilateral light. *(3 marks)*
- (b)

	SET A	SET B	
(i)	Green plants	Pale yellow plants.	
(ii)	Large leaves	Small leaves.	
(iii)	Short stems	Long stem;	
(iv)	Thick stems	Thin stems.	<i>(4 marks)</i>
- (c) (i) Etiolation. *(1 mark)*
(ii) To reach light. *(1 mark)*
- (d) Positive phototropism. *(1 mark)*
- (e) (i) Auxins migrate to the dark side.
(ii) Causing faster growth of cells on the dark side.
(iii) Resulting in the curvature of the shoot towards the source of light.
(3 marks)