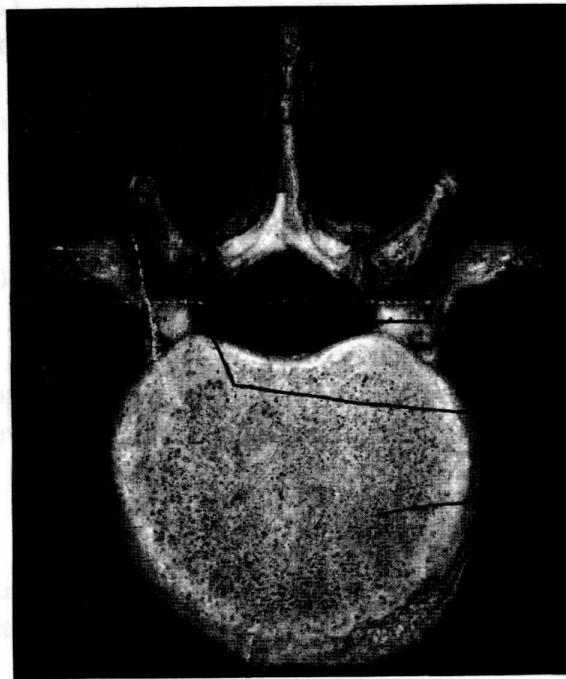


### 4.5.3 Biology Paper 3 (231/3)

1. (1) (b) go to 5;
- (2) (a) Eagle;
- (b) go to 3;
3. (a) Fish;
- (b) go to 4;
4. (a) Tortoise;
- (b) Frog;
5. (a) go to 6;
6. (b) Spider;
7. (b) go to 8;
8. (a) go to 9;
- (b) Starfish;
9. (a) Earthworm (13 marks)
2. (a) F Cervical/Cervical bone; (1 mark)
- G Thoracic/Thoracic bone; (1 mark)
- H Lumbar/Lumbar bone; (1 mark)

(b)



Neural spine;

Metopophyses;

Transverse process;

Neural canal;

Neural arch;

Centrum;

Labels  $\frac{6}{2} = 3$  marks

Labels touching object = 1 mark

Labels not crossing = 1 mark

maximum = 5 marks

H

(c) K - Tubercular (facet);  
K - Capitular (facet);

(2 marks)

- (d)
- (Large) centrum to support the body vertebrae;
  - Neural arch to protect the spinal cord;
  - (Extended) transverse processes for attachment of (abdominal) muscles;
  - (Long) neural spine for attachment of abdominal muscles/ligaments;
  - Facets for articulation with other vertebrae;
  - Neural canal for passage of spinal cord.

(4 marks)

3.

(a)

NO.	TEST TUBE	OBSERVATION	CONCLUSION
1.	D+Iodine	Turns blue black/blue/black;	Starch present;
2.	D+E+Iodine	Turns colourless/blueblack colour disappears	Starch absent/decreases;
3.	D+Benedict's solution	Remains blue/no colour change;	Reducing sugars absent;
4.	D+E+Benedict's solution	Turns green, yellow, orange, blown/reddish blown	Reducing sugars present;

(8 marks)

- (b) (i) Breaks down (hydrolyses) starch; into maltose/reducing sugar; (2 marks)
- (ii) • Provides optimum suitable temperature; for activity of E/enzymes;
- Required when testing for reducing sugars using Benedict's solution;
- Activates enzymes.
- (c) Salivary amylase or ptyalin/ amylase/pancreatic amylase. (1 mark)
- (d) Substance D tests negative with Benedict's solution because it is a complex/ polysaccharide; addition of E on heating gives positive results with Benedict's solution, since E hydrolyses, the starch/ complex sugar into simple sugars; testing positive.

OR

Starch in D/D is a non-reducing sugar/complex sugar/polysaccharide/not a reducing sugar; starch is hydrolysed/digested/broken down into reducing sugars by E/Amylase in E/Amylase/Diastase/enzyme in E.

(2 marks)