

**Marks**

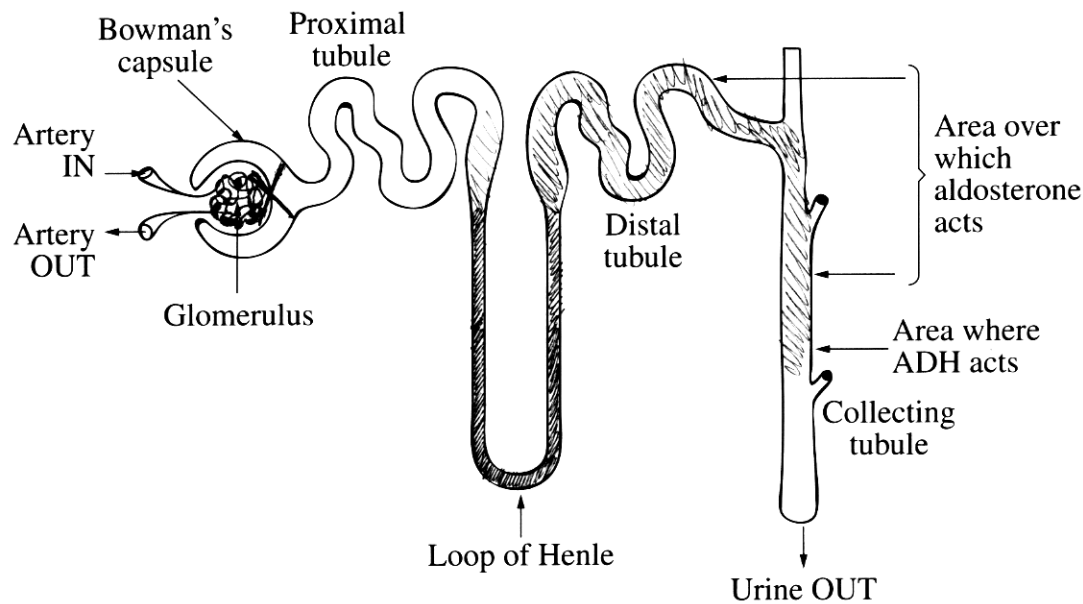
**Question 23** (6 marks)

The diagram represents a nephron which is the functional unit of the kidney.

Nephrons make urine by:

- filtering small molecules and ions from the blood;
- reabsorbing the needed amounts of useful materials.

Surplus or waste molecules and ions flow out as urine.



- (a) Identify the area where filtration occurs, by marking it with an X on the diagram. 1
- (b) Identify the area where reabsorption occurs, by shading it on the diagram. 1
- (c) Discuss the importance of hormone replacement therapy for people who cannot secrete aldosterone. 4

*People who can't secrete aldosterone can't control the levels of salt in their blood. As a result they have the wrong levels of sodium and potassium in <sup>their</sup> blood. This state is reversed using the hormone fludrocortisone ~~at~~ in hormone replacement therapy. This is important for ~~the~~ these patients because: ~~they no longer suffer dehydration~~, they can have the correct blood volume, blood pressure and a relatively stable internal environment. This is important so that their body may function normally and therefore they can lead a relatively normal life.*