

Marks

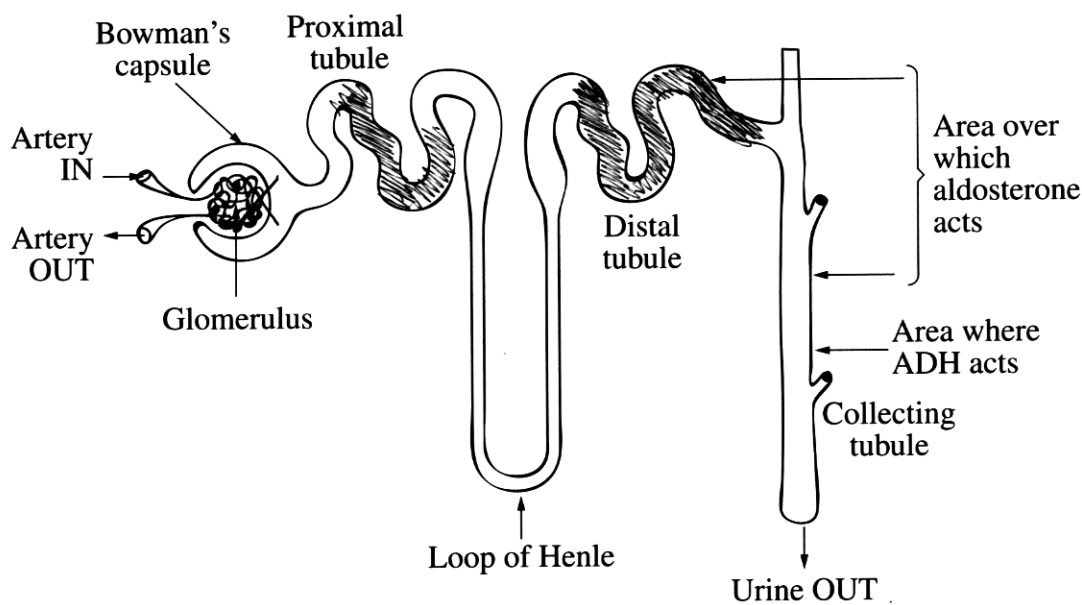
Question 23 (6 marks)

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

Hormone replacement therapy for people who cannot secrete aldosterone is very important as it is used in the nephrons of the kidney to reabsorb ions. Ions are absorbed when blood pressure is low ^{as} aldosterone ~~can~~ ^{assists in} ~~also~~ maintaining blood pressure and also the composition of ions in the blood. When sodium in blood is low, aldosterone is used to make the walls in the distal tubule more permeable to sodium ions and water. Aldosterone is important in maintaining the the ~~can~~ ion composition and blood pressure.