

Question 1:

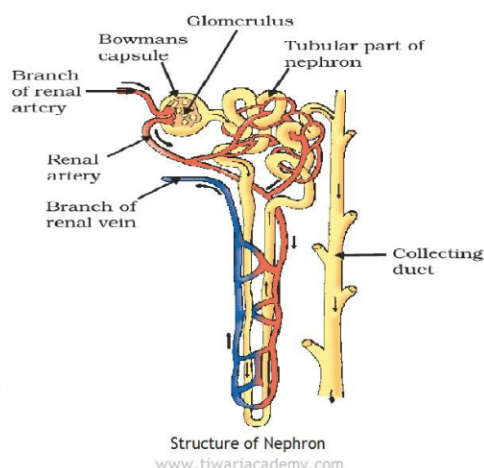
Describe the structure and functioning of nephrons.

Answer 1:

Nephrons are the basic filtering units of kidneys. Each kidney possesses large number of nephrons, approximately 1-1.5 million. The main components of the nephron are glomerulus, Bowman's capsule, and a long renal tubule.

Functioning of a nephron:

- The blood enters the kidney through the renal artery, which branches into many capillaries associated with glomerulus.
- The water and solute are transferred to the nephron at Bowman's capsule.
- In the proximal tubule, some substances such as amino acids, glucose, and salts are selectively reabsorbed and unwanted molecules are added in the urine.
- The filtrate then moves down into the loop of Henle, where more water is absorbed.
- From here, the filtrate moves upwards into the distal tubule and finally to the collecting duct. Collecting duct collects urine from many nephrons.
- The urine formed in each kidney enters a long tube called ureter. From ureter, it gets transported to the urinary bladder and then into the urethra.



Question 2:

What are the methods used by plants to get rid of excretory products?

Answer 2:

Plants use completely different strategies for excretion than those of animals. They can get rid of excess water by transpiration. For other wastes, plants use the fact that many of their tissues consist of dead cells, and that they can even lose some parts such as leaves. Many plant waste products are stored in cellular vacuoles. Waste products may be stored in leaves that fall off. Other waste products are stored as resins and gums, especially in old xylem. Plants also excrete some waste substances into the soil around them.

Question 3:

How is the amount of urine produced regulated?

Answer 3:

The amount of urine produced depends on the amount of excess water and dissolved wastes present in the body. Some other factors such as habitat of an organism and hormone such as Antidiuretic hormone (ADH) also regulates the amount of urine produced.