



Excretory system

The process of removal of wastes from the cells of living organisms is called **excretion**. The organ system responsible for the removal of wastes is called **excretory system**.

Excretion in animals:

Animals do not have well developed excretory system they get rid of all kinds of body waste by direct diffusion through the cells membranes. Example amoeba, earthworm, insects.

Excretion in plants:

- **Carbon dioxide and oxygen** -carbon dioxide is formed after respiration and oxygen is formed after photosynthesis.
- **Excess water**- it is excreted through stomata and the process is called transpiration.
- **Excessive salts**- if salt are present in water or in the soil it get deposited in plants as crystal.
- **Gums, resins and latex**- many plants get rid of toxic wastes in the form gum, raisins and latex. We use these for paints rubber and varnishes.

Excretion in human:

Through exhaled air- carbon dioxide, formed after respiration, is sent out of the body with the exhaled air.

Through sweat- our skin has small outer openings called sweat pores. Our body gets rid of a small quantity of urea, salts and water through sweat secreted by the sweat glands.

Through the kidney- a number of nitrogenous wastes such as urea and uric acid are formed inside our body. Urea is result of the combination of carbon dioxide and ammonia. It is excreted from the body in the form of a pale yellowish coloured liquid called Urine. Urine contains 95% water and remaining 5% urea, uric acid and minerals. Formation of urine takes place inside the kidneys.

Human Excretory system consists of

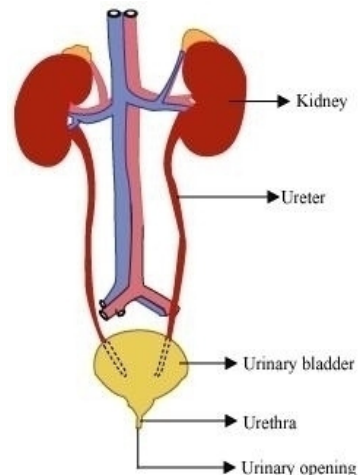
- (a) pair of reddish bean shaped organs called kidneys,
- (b) two tubes called ureters,
- (c) a urethra that removes Urine.

When blood enters the kidney, useful substances are absorbed/filtered back into the blood. Waste substances get dissolved in water and are removed as **urine**. This absorption/filtration is carried out by functional unit of the kidneys called **nephrons**. Urine thus formed is collected via the ureters into the **urinary bladder**. Then urine is passed out from the body through the opening at the end of the **urethra**.

Kidneys work in pairs, but they are so efficient that even if one gets damaged, the person can still lead a healthy life. In case both the kidneys are damaged, a person can survive with the help of:

- a) **regular dialysis** or
- b) **or kidney transplant**.

Dialysis is a method from removing toxic substances from the blood with the help of a machine when the kidneys are unable to do so. The dialysis machine is also



7th – Transportation in Plants and Animals II

called an artificial kidney. In a **kidney transplant**, at least one of the diseased kidneys is replaced with a healthy kidney from a donor.

