

# Transportation

X R 6  
IV week

Human being like other multicellular organism need regular supply of food, oxygen etc. This function is performed by circulatory system. It consists of — 1. Heart 2. Arteries and veins 3. Blood and lymph.

1. Heart : — Heart is a muscular organ. It is a pumping organ. It is located in left thoracic cavity of human body.

2(a) Arteries : — The blood vessels or tubes which carry blood from heart to body parts are known as arteries. They carry oxygenated blood. They are thick walled blood vessels.

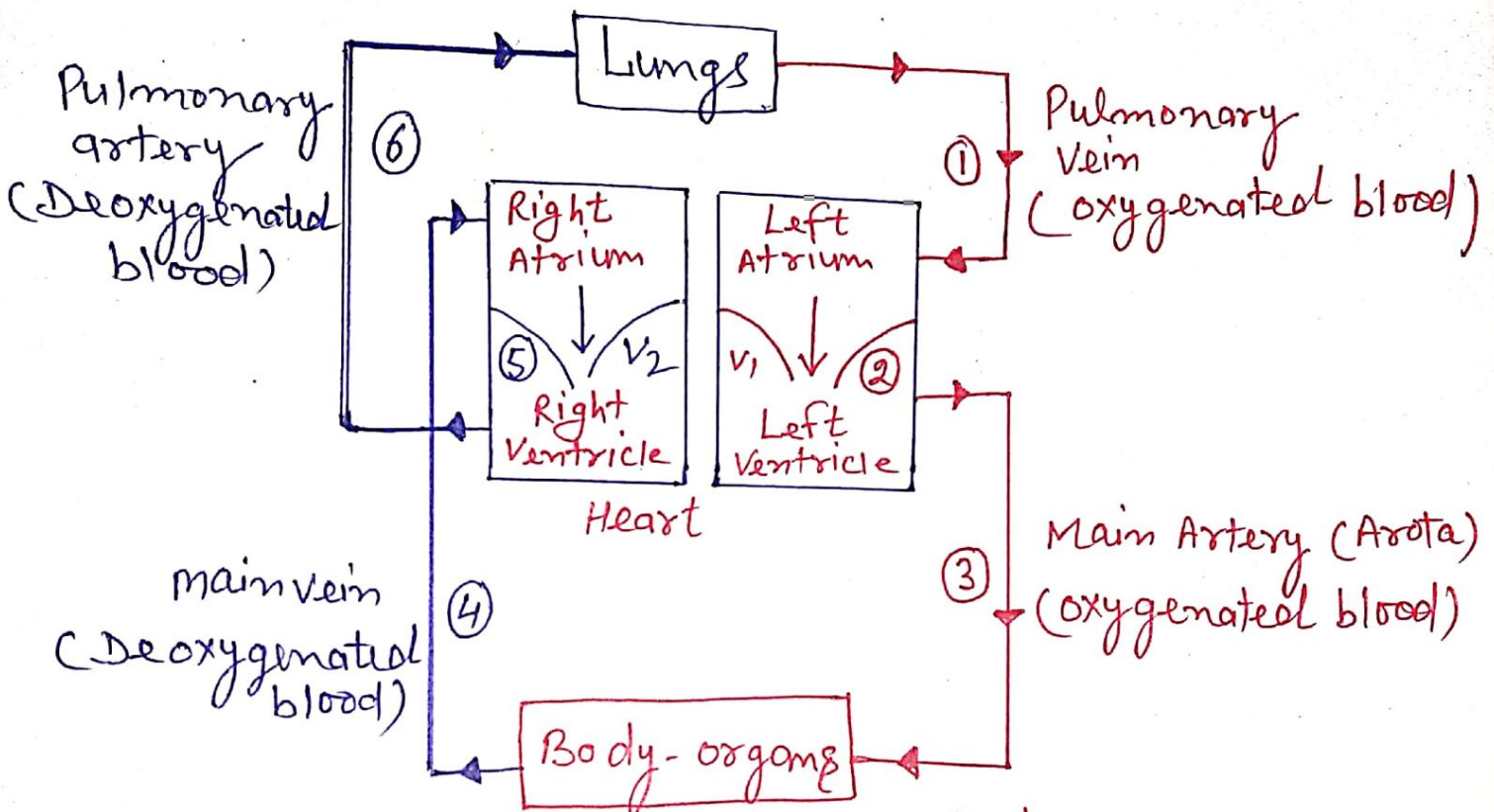
(b) Veins : — The blood vessels which carry blood from body parts to heart are called veins. They carry deoxygenated blood. They are thin walled blood vessels.

3 Blood : — It acts as a connective tissue which transport food, oxygen, hormones, waste materials etc from one part to another part of the body.

## Composition of blood : —

- (a) R.B.Cs : — They carry gas ( $O_2$ ,  $CO_2$ ). They contain Hb that impart red colour to blood.
- (b) W.B.Cs : — They provide body defence by engulfing the germs and producing antibodies.
- (c) Platelets : — They help in blood clotting.
- (d) Plasma : — A yellow colour fluid contains 90% water and 10% organic substances like proteins viz - albumin, globulin and inorganic - mineral ions.

Lymph: — A yellowish fluid escapes from the blood capillaries into the intercellular spaces. It contains less proteins than blood. Lymph flows from the tissues to the heart assisting in transportation and destroying germs.



Blood circulation in Human body

Double Blood Circulation: — Blood travels twice through the heart in one complete cycle of the body.

Transportation in Plants

There are two main conducting pathways in a plant.

Xylem

1. It carries water and minerals from the roots to other parts of the plant.
2. No energy is used.

Phloem

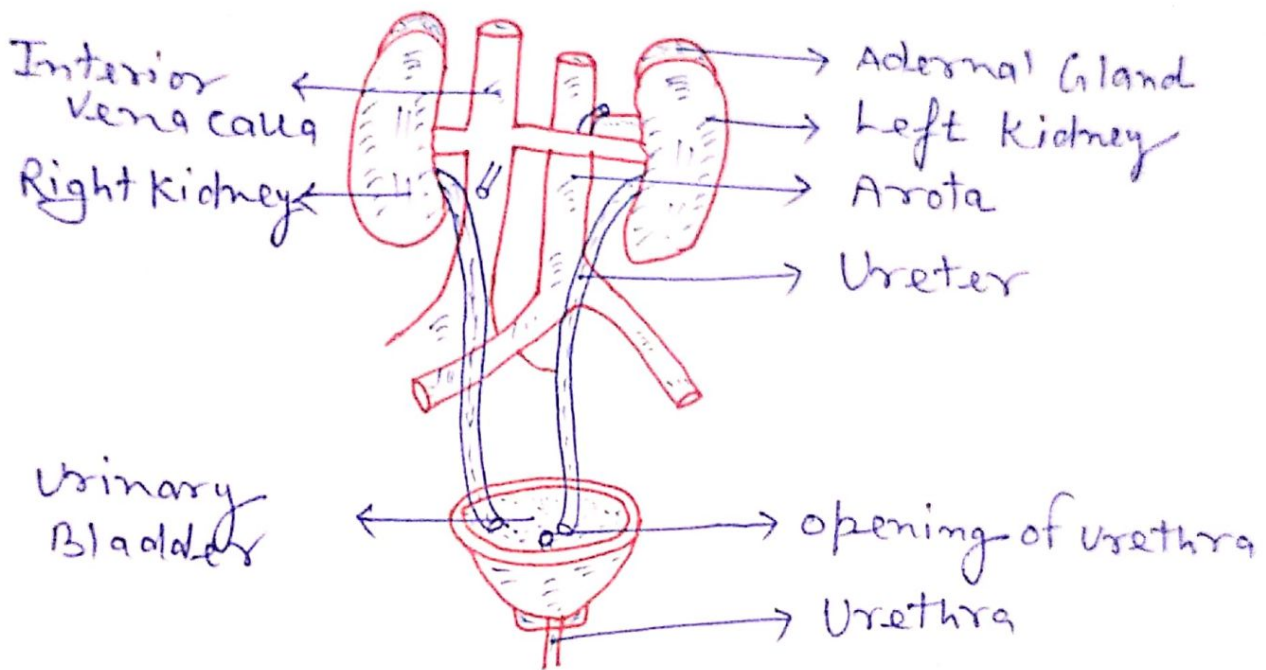
1. It carries product of photosynthesis from leaves to the other parts of the plant.
2. Energy is used from A.T.P.

## -!! Excretory System in Human!!-

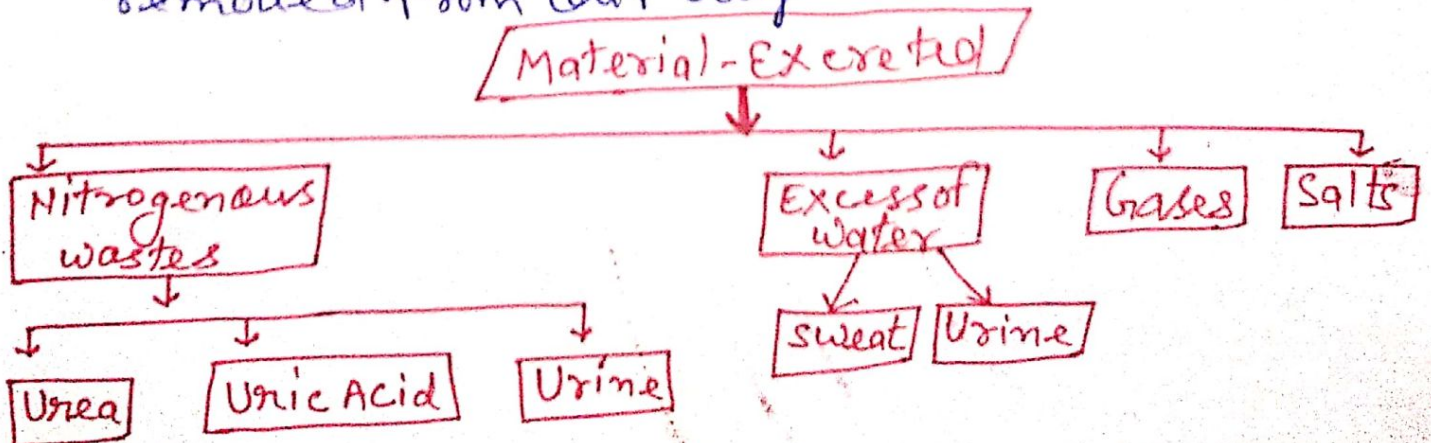
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Excretory / Urinary system is consisted of :-

- (i) The kidneys :- The excretory organ
- (ii) The ureters :- The ducts which drain out urine from the kidneys.
- (iii) The urinary bladder :- The urinary reservoir.
- (iv) The urethra :- The channel to the exterior.



Excretion :- The metabolic activities in the body generates many kinds of wastes - including nitrogenous waste which are harmful for the body and hence needed to be removed. Excretion is a process by which these wastes are removed from our body.



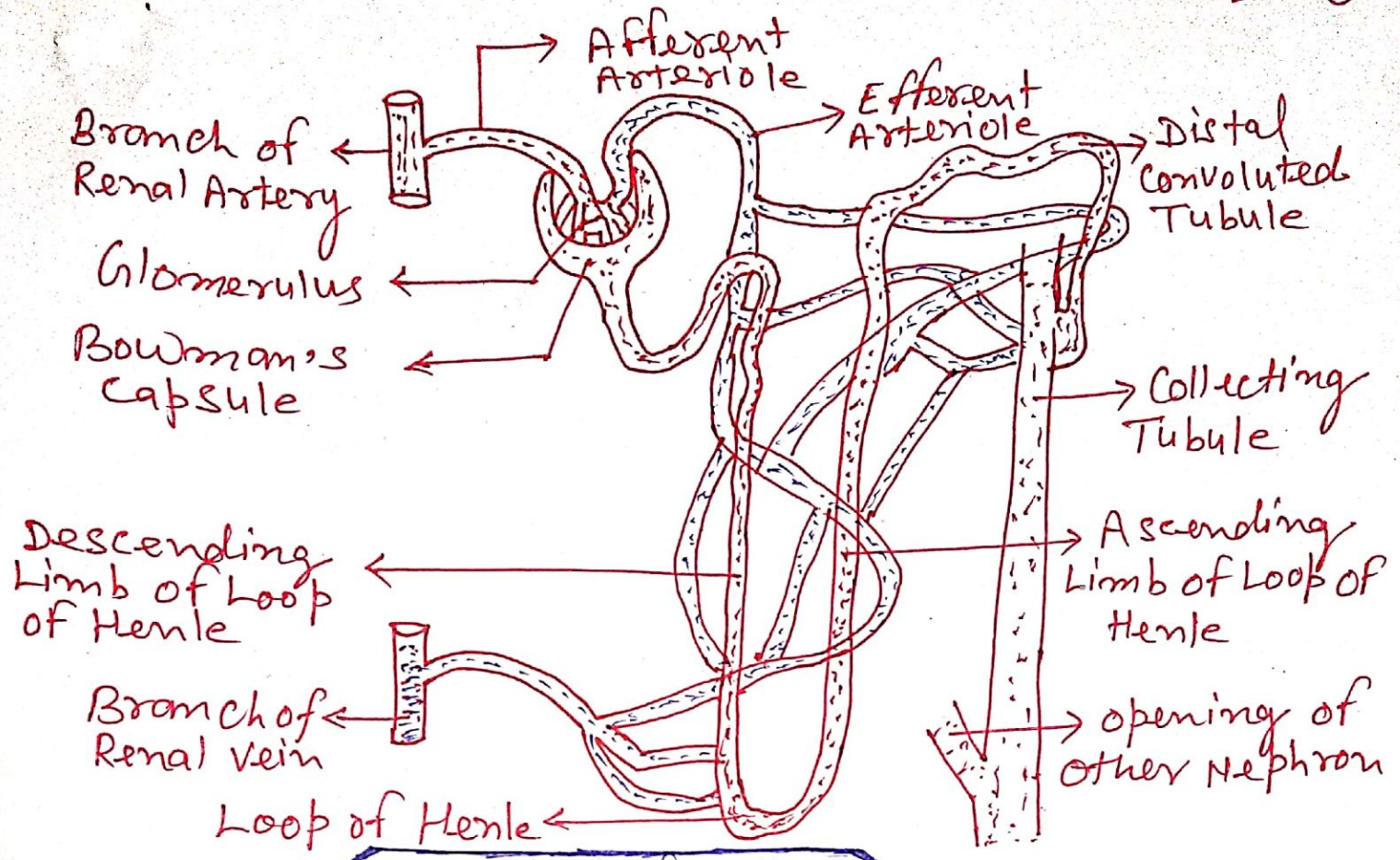
## Formation of urine:

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- Each kidney contains many filtration units called as nephrons.
- Nephrons are made up of a cluster of thin walled capillaries called glomerulus which is associated with Bowman's capsule and a long tube which terminates through this capsule.
- The renal artery brings oxygenated blood to the kidneys along with the nitrogenous wastes.
- The blood gets filtered through the glomerulus and this filtrate enters the tubular part of nephron.
- As this filtrate moves down the tubular part glucose, amino acids, salts and excess of water gets selectively reabsorbed by the blood vessels surrounding these tubules.
- The amount of water reabsorbed.
- So the fluid now flowing in the tubular part is urine.
- Each ureter drains the urine in the urinary bladder where it is stored.
- This bladder is a muscular structure which is under control of nervous system.
- 180 litres of filtrate is formed daily but only 2 litres is excreted out as urine so the rest is reabsorbed in the body.

## Excretion in plants:

- Oxygen and carbon dioxide is diffused through stomata.
- Excess water is removed by transpiration.
- Plants also can lose some of their old parts like old leaves and bark of the tree.
- Other waste products like resins and gums in old xylem cells which can also be lost by plants.
- Plants also secrete some waste substances in the soil around them.



structure of Nephron

Assignment to do

- Q NO1:- what are methods used by plants to get rid of excretory products?
- Q NO2:- Distinguish between arteries and veins.
- Q NO3:- write the composition of blood. write also their functions.
- Q NO4:- write comparison account of xylem and phloem in plants.
- Q NO5:- Plants have no special organs for excretion but they remove waste materials. How?
- Q NO6:- Draw neat and clean diagram of excretory system of Human being.
- Q NO7:- write the mechanism of filtration of blood in Human.
- Q NO8:- With the help of diagram, explain the transportation in Human being.