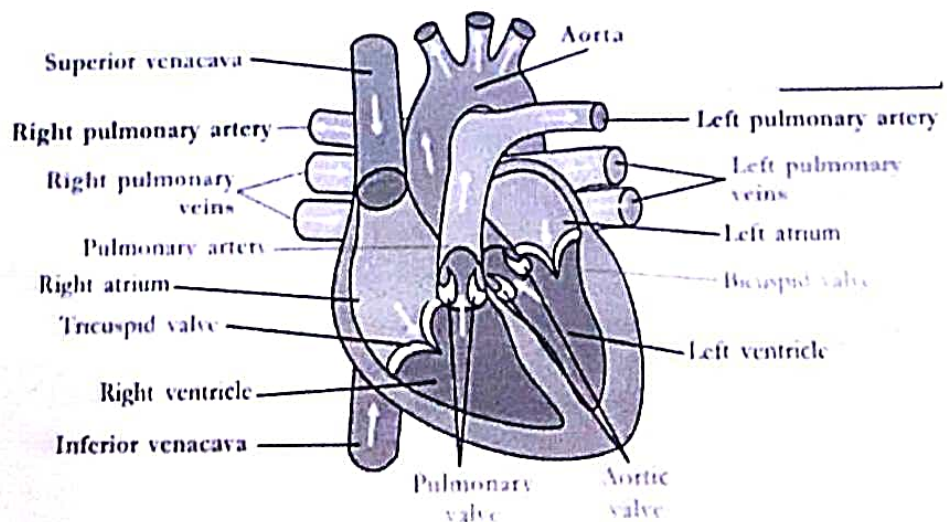


CHAPTER 3: SIMPLE NUTRIENTS INTO CELLS:

- Q1) Transport of material is carried out by blood & lymph.
- Q2) Transport in plants is carried out through
- Q3) Give an example of an anticoagulant of blood.
→ EDTA (Ethylene Diamine Tetra Acetic acid). EDTA separates the cell & fluid part of blood.
- Q4) What does human blood consist of?
→ Human blood consists of 45% blood cells,
[Red Blood corpuscles (RBC), white blood corpuscles (WBC),
& 55% Plasma (a pale yellow colour fluid)
[Proteins (Albumin, Globulin, Fibrinogen) & other substances
fat, sugar, salts, hormones, urea, etc.] & 90-92% water].
- Q5) What are the functions of plasma proteins?
→ Albumin: - Regulates blood pressure.
Globulin: - Helps in defense.
Fibrinogen: - Plays a major role in the coagulation of blood.

Q6) Explain the structure of a Human heart. 1150, give a diagrammatic representation of human heart.

- The heart is situated slightly tilted towards the left in betn two lungs, behind the sternum in the thorax cavity.
- The size of the human heart is equal to the size of one's fist.
- Pericardium is a double layered membrane that covers the heart.
- Pericardial fluid is filled in between the pericardial membranes.
- Arteries: [carries blood from heart, 3 layered thick & elastic wall, blood flows with speed & pressure. Pulmonary artery (deoxygenated blood) & aorta (oxygenated blood)].
- Vein: [carries blood towards the heart, 3 layered thin wall valves are seen inside, blood flows with low speed & pressure]. Pulmonary vein (oxygenated), inferior-superior venacava (deoxygenated).
- Capillaries: [connect arteries and vein together, single layered wall with minute pores, valves are absent blood flows with low speed & pressure].



Q7) What is a pace maker?

→ The Sino Atrial Node is at the anterior part of atrium is called pacemaker. The pacemaker has to function properly for the heart to beat rhythmically, otherwise the heart beat will become non rhythmic.

Q8) Explain Double circulation.

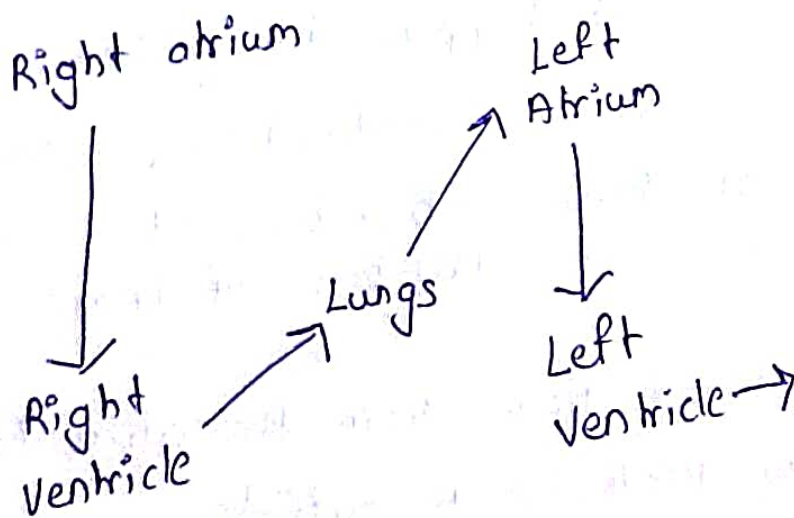
→ • When blood flows from the heart to diff parts of the body & vice versa, it passes twice through the chambers of the heart.

• Hence the circulation of blood in man is said to be double circulation.

• Double circulation includes systematic circulation & pulmonary circulation.

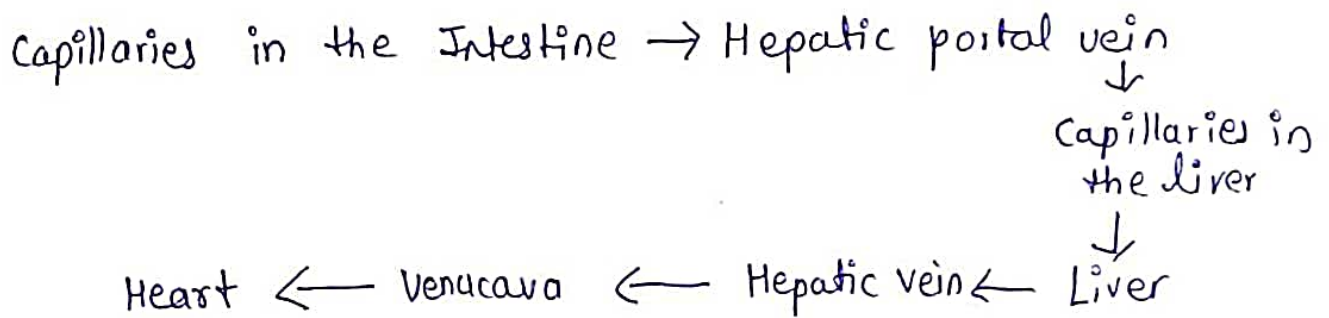
• Systemic circulation starts from the left ventricle & ends in the right atrium.

• The circulation which starts from the ventricle & ends in the left atrium is called pulmonary circulation.



Q8) What is portal circulation?

- • Certain veins do not reach the heart & they carry blood from organ to organ.
- Such veins are called portal veins.
- They begin from one organ as capillaries & end in another organ as capillaries.
- Portal system is the system of blood circulation in which portal veins are included.



Q9) Why is liver called the center of metabolism?

- • Some nutrient undergo several changes in liver.
- Storage of glucose in the form of glycogen, releasing energy from fatty acids, producing cholesterol, etc.

Q10) What is heartbeat? What happens during heartbeat?

- • One heart beat consists one contraction (systole) & relaxation (diastole) of heart chambers. It takes about 0.8 seconds. Contraction of chambers of heart is termed as systole.
- During this phase, blood flows from the atria to the ventricles & from the ventricles to outside.
- Subsequently along with the atria, the ventricles also relax. This stage of relaxation is called diastole.
- The heart beats at an average rate of 72 times/minute.

Q11) Define pulse.

- The wave like movement formed due to the contraction and relaxation of the heart is felt throughout the walls of the arteries. This is called pulse.
- Rate of pulse is equivalent to that of heartbeat.

Q12) Define hypertension & hypotension.

- ◦ Hypertension: Rate of normal BP is 120/80 mmHg. The condition in which the BP increases above the normal rate is a disease called hypertension.

◦ Hypotension: - Condition in which the BP rate goes below prescribed rate is called hypotension.

Q13) Explain lymphatic system.

- ◦ When blood flows through capillaries, the fluid part of blood oozes into intercellular spaces through minute pores of capillary wall.
- The fluid, formed in the intercellular space, is the tissue fluid. It does not contain RBC's, large protein molecules & platelets.
 - Exchange of materials takes place between the tissue fluid & cells. Tissue fluid is absorbed into the blood & lymph capillaries.
 - Along with blood, lymph also participates in the ~~transport~~ transport of materials.

Fatty acids & glycerol → lymphs → Small lymph ducts
↓
Large lymph ducts
Heart ← Blood ←

In addition to lymph, the lymphatic system consists of

Lymph capillaries, lymph vessels, lymph nodes & spleen. Spleen & lymph nodes play a major role in defending disease causing germs.

Q14) What are the vascular tissues in plants? Explain.

→ Xylem & Phloem are the vascular tissues in plants.

Xylem

- o Transport water & minerals from roots to the plant parts.
- o Made of dead cells (Tracheids & Vessels)

Phloem.

- o Carries food from leaves, in the form of sucrose, to various parts of plants.
- o Mainly sieve tube & companion cells.