

Q. Write a note on circulation system of Human body.

Circulation System:

It is the system responsible for the circulation of vital nutrients through blood in the body.

Components of Circulation System

Circulation system is based on three major components.

1. Blood 2. Blood vessels 3. Heart.

1. Blood

Blood is a complex fluid composed of plasma and blood cells.

- **Plasma:** It is composed of 90% water and 10% nutrients and gases.
- **Blood cells:** There are three major types of cells involved in composition of blood.

Blood cells.	Red blood cells	White blood cells	Platelets
Role	carries oxygen	Palace of Body	Blood clotting
Scientific name	Erythrocytes	Leucocytes	Thrombocytes
Life span	120 days	1 week	months years.
Nucleus	No Nucleus	Nucleus is present	No Nucleus
Number per milliliter cube	7 to 8 million per ml cube	4 to 11000 million/cube	3 to 4 million/cube.

2 - Blood vessels.

There are three major types of vessels that are responsible for circulation of blood.

	Arteries	Veins	Capillaries
Role	carry oxygenated blood from heart to body	carry de-oxygenated blood from body to heart	serves as a junction between both so carry both type of blood.
Exception	Pulmonary artery	Pulmonary vein	none
Blood pressure	Highest	Normal	Low

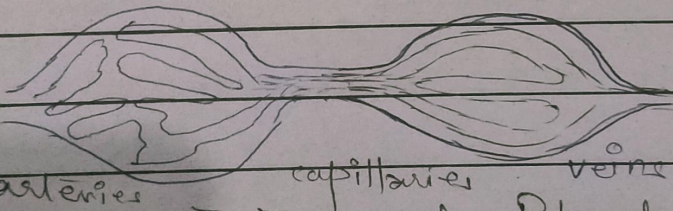
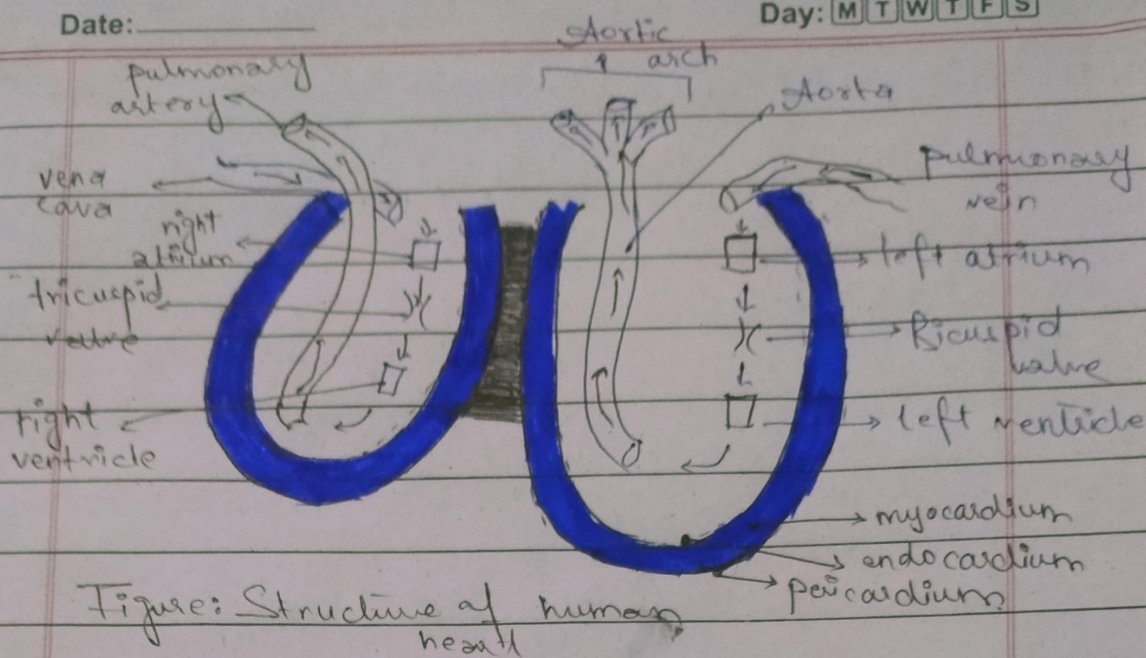


Fig: Structure of Blood vessels.

3 - Heart

Heart is the pumping organ, mainly responsible for the circulation of blood. It is surrounded by three main layers for support and protection. It consists of 4 chambers and two valves that push/pump the blood.



Blood Circulation Process.

1- Body:

The network of vein^{and arteries} is present in each part of body.

2- Vena cava:

Veins carry blood from all parts of body and pour it into vena cava. It is the major canal which carries deoxygenated blood to heart's right side.

3- Right atrium.

This is the first chamber of heart from which blood passes. The contraction and relaxation of atrium pushes deoxygenated blood to tricuspid valve.

4- Tricuspid valve:

It prevents the backflow of blood to right atrium.

5- Right ventricle.

Right ventricle contracts and relaxes to pass the blood to pulmonary artery.

6- Pulmonary artery

It carries deoxygenated blood from heart to lungs.

7- Pulmonary vein

After purification, it carries oxygenated blood from lungs to heart.

9- Left atrium

It pushes the blood by contraction and relaxation.

10- Bicuspid valve:

It prevents the backflow of blood.

11- Left ventricle.

It pumps the blood to aorta by contraction and relaxation.

12- Aorta:

It is the main artery of the body which carries blood and circulate the blood by dividing into aortic arch.