

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<br>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 | serve as a junction between both so carry both type of blood. |
| Exception      | Pulmonary artery                          | Pulmonary vein                               | none                                                          |
| Blood pressure | Highest                                   | Normal                                       | Low                                                           |

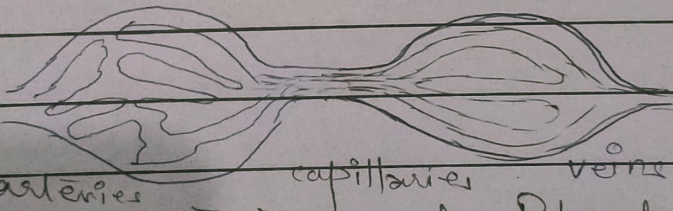
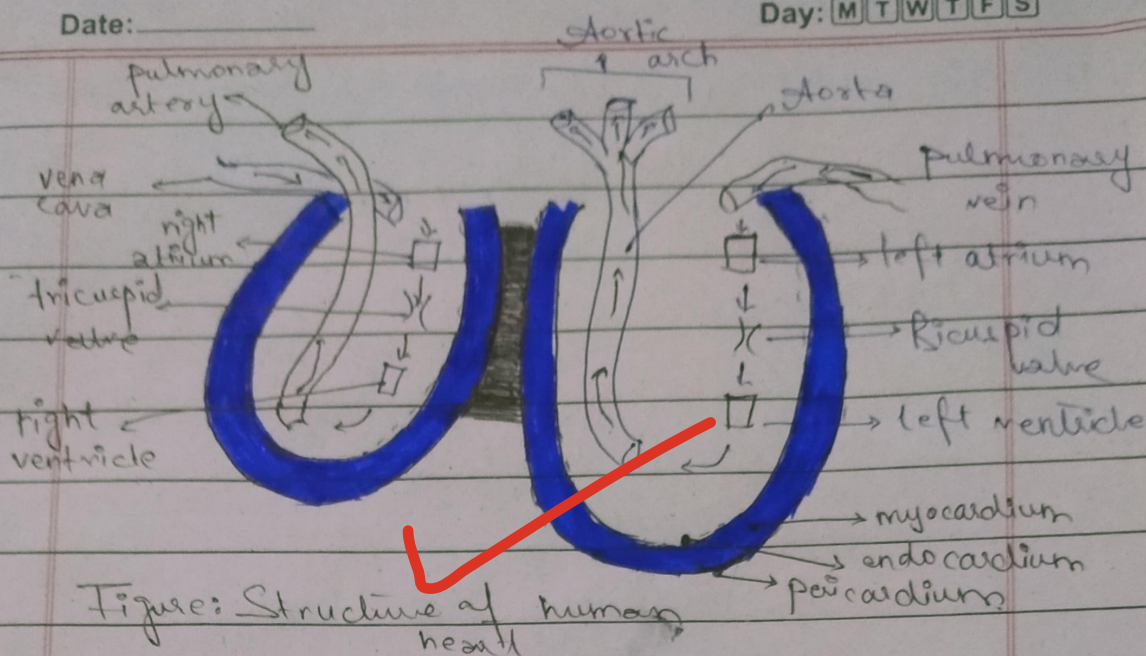


Fig: Structure of Blood vessels.

## 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 the blood.





## Blood Circulation Process.

### 1- Body:

The network of vein<sup>s</sup> and arteries<sup>s</sup> 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.

good attempt!!!

#### 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.