

P.6 Science class work Notes Week one(3/June/2020)

THE CIRCULATORY SYSTEM

The circulatory system is a system concerned with the movement or flow of blood in the body.

Blood circulation is the movement of blood around the body.

The circulatory system has three main components namely;

The heart

The blood

Blood vessels

THE HEART

The heart is a strong muscular organ which pumps blood around the body

The heart is located in the chest cavity between the lungs

It is protected by the ribcage

It is made up of thick muscles called **cardiac muscles** which are involuntary.

It is covered by a transparent sac known as **pericardium**.

Pericardium produces **pericardial fluid**

That fluid lubricates the heart.

It is divided into two parts by a thick wall called **septum**.

The right side deals with deoxygenated blood.

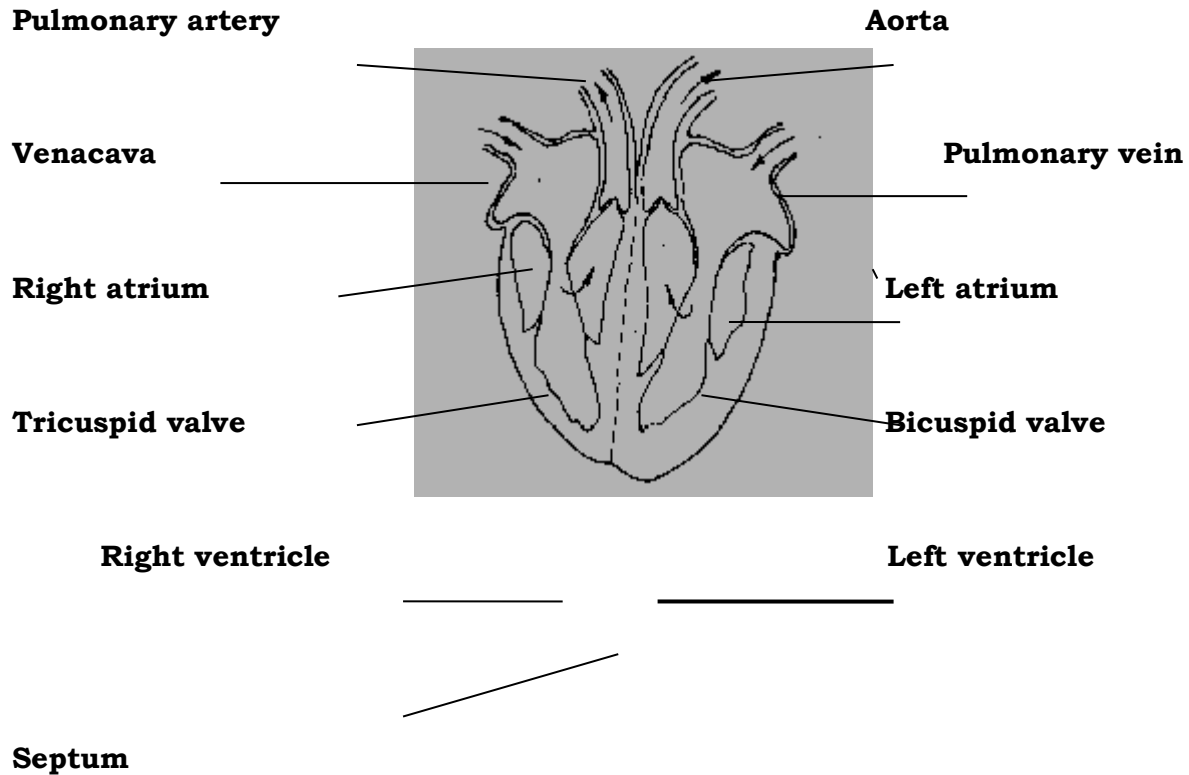
The left side deals with oxygenated blood.

The heart is further divided into four chambers i.e.

The upper chambers referred to as auricles/atria (the right and left auricles)

The lower chambers referred to as ventricles (the right and left ventricles)

THE STRUCTURE OF THE HEART



FUNCTIONS OF THE PARTS

Venacava – It carries deoxygenated blood from all body parts to the heart.

Pulmonary artery- It carries deoxygenated blood from the heart to the lungs.

Pulmonary vein – It carries oxygenated blood from the lungs to the heart.

Aorta – It carries oxygenated blood from the heart to all body parts.

Valves – They prevent the back flow of blood.

Septum – It separates the left from the right side of the heart.

How the heart works

The heart receives blood from all parts of the body through the vena-cava.

When blood from the venacava reaches the right atrium of the heart, it is pumped to the lungs through the pulmonary artery.

NB: Blood goes to the lungs to be oxygenated

From the lungs, blood is carried to the left atrium through the pulmonary vein and then pumped to all body parts through the aorta.

The left side of the heart has thicker muscles because it pumps blood with high pressure and through a long distance

The right side of the heart has thin muscles because it pumps blood at a low pressure through a short distance

Note

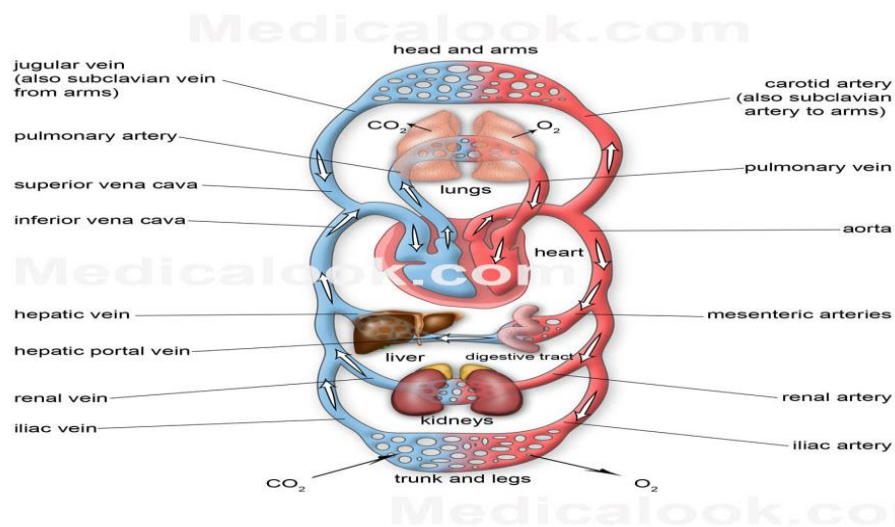
The normal heart beat of a person is 72 times a minute, but can go beyond if there is fear or excitement.

The circulation of blood all around the body was first discovered by Sir **William Harvey** (1578 - 1637) English physician.

The instrument used by doctors to detect heart beat is called a **stethoscope**.

The instrument used for measuring blood pressure is called a **sphygmomanometer**

A diagram showing the circulation of blood in the body:



Organs related to the circulatory system

Heart – Pumps blood to all body parts.

Lungs – It is where blood is oxygenated.

Kidney – It is where blood is filtered/purified.

Small intestine – Blood picks digested food to be supplied to body parts.

Liver – Regulates amount of sugar in blood.

BLOOD (Blood composition)

Blood is a red liquid tissue that flows through vessels to all body parts.
Blood is composed of the following components

White blood cells

Red blood cells

Blood plasma

Platelets

White blood cells solid part of blood

They are made in the red bone marrow of long bones, lymph nodes and the spleen.

They are solid part of blood.

The main function of white blood cells is to fight disease causing germs in the body.

Characteristics of white blood cells.

Have a nucleus.

Do not have a definite shape.

Qn. How do white blood cells fight disease causing germs?

By engulfing and digesting the germs.

By producing anti-bodies against germs.

Qn: How are white blood cells adapted to their function?

Are very many in number.

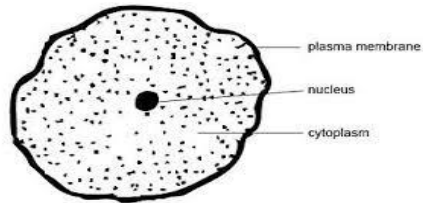
Do not have a definite shape.

Qn. Why are white blood cells not having a definite shape?

To engulf germs easily.

To enable them pass through blood capillaries.

Simple diagrams of white blood cells



Red blood cells(Erythrocytes)

They are made in the red bone marrow of the short bones like sternum, scapula, ribs, pelvis etc.

They have a bi-concave shape.

They have a red pigment or substances called haemoglobin (this is protein with iron)

Haemoglobin gives blood the red colour.

The main function of the red blood cells is to carry or transport oxygen around the body.

Characteristics of red blood cells.

They do not have a nucleus.

They do not have a definite shape.

Qn; why are red blood cells not having a nucleus?

To increase the surface area for transporting oxygen.

Qn: How are red blood cells adapted to their function?

They do not have a nucleus.

Diagrams showing red blood cells

