

Circulation of Blood

Solution 1.a:

The different parts of the human circulatory system are the heart and blood vessels such as arteries, veins and capillaries.

Solution 1.b:

Functions of the circulatory system:

1. The soluble food constituents produced during digestion are absorbed by the blood. These constituents are then dissolved in the water and transported to various parts of the body.
2. The oxygen taken inside the body during respiration is absorbed in the blood circulatory system.
3. Chemicals such as enzymes and hormones synthesised in the body are transported to different parts of the body through the blood.
4. Waste products produced in each cell of the body are transported to the excretory system from where they are thrown out of the body.

Solution 1.c:

The process of throwing out waste products from the body is called excretion.

Solution 1.d:

Waste products formed in plants:

1. Calcium oxalate crystals in *Colocasia* leaves
2. Sap of the rubber tree
3. Gum from the babool tree
4. Catechu from the khair tree

Solution 1.e:

The waste products formed in plants are collected in the leaves of plants, bark of trees or outer layer of the stem of plants. The bark or the outer layer of the stem and the leaves fall off, and the waste products collected in them are thrown out of the plants along with these plant parts.

Solution 2:

- In mammals, the **heart** is divided into four parts.
- The heart **throbs** continuously.
- The vessels carrying blood from the heart to the different parts of the body are called **arteries**.
- The vessels carrying blood from the parts of the body to the heart are called **veins**.

Solution 3:

Group 'A'	Group 'B'
(a) A, B, AB and O	3. blood groups
(b) a kind of tube	4. blood vessels
(c) an independent and closed system	2. blood circulation

Solution 3:**Differences between arteries and veins:**

	Arteries	Veins
1.	Blood vessels which carry blood from the heart to the different parts of the body are called arteries.	Blood vessels which carry blood from the different parts of the body to the heart are called veins.
2.	They carry pure, oxygen-rich blood.	They carry impure blood lacking oxygen.
3.	Arteries branch to form capillaries.	Capillaries unite to form veins.
4.	They have thick walls.	They have thin walls.

Solution 5.a:

In every cell, there is an exchange of substances between the blood in the capillaries and the cell content. To facilitate this exchange of substances, the walls of the capillaries are thin.

Solution 5.b:

It is necessary to match the blood group of the donor with the blood group of the receiver before transfusion because if the blood groups do not match, it can be

dangerous or even fatal for the patient receiving the blood. The receiver may even die if he/she receives blood of an incorrect blood group.

Solution 6:

Blood donation

1. The action of a healthy person giving blood for use by a patient is called blood donation.
2. There arises a need of blood during major accidents or surgeries when a person loses much blood.
3. To make up for such blood loss, the person is given blood from outside. This process is called blood transfusion.
4. Blood may also be given to a person suffering from anaemia, thalassaemia or cancer.
5. Blood is stored in blood banks which provide blood to the people who need it.
6. The person who donates blood is called the donor, and the person receiving it is called the receiver.
7. A healthy person can donate blood three or four times in a year.
8. At one time, 300 ml of blood can be donated.
9. The blood gets formed in the donor's body in a short period of time.

Solution 7:

