

# BLOOD AND ITS COMPONENTS

## 1. What is Haematology?

- ◆ The study of blood is called Haematology. In adult human beings there are 5 sets of blood present.

## 2. What are the components of blood?

- ◆ Blood has two components. They are
  1. Plasma
  2. Blood corpuscles
- ◆ Plasma is fluid part of the blood. It consists of 90% water.
- ◆ Blood corpuscles is of three types. They are
  1. Red blood cells
  2. White blood cells
  3. Platelets

## 3. Write the differences between R.B.C and W.B.C?

S.No.	R.B.C	W.B.C.
1.	These are called Erythrocytes.	These are called Leucocytes.
2.	Nucleus is absent except in camel.	Nucleus is present.
3.	These are more numerous.	These are less numerous.
4.	About $4.5-5.5 \times 10^9$ R.B.C. are present per 1ml of blood.	These are about $5-9 \times 10^6$ W.B.C. are present per 1 ml of blood.
5.	They are round, circular or biconcave in shape.	They do not have particular shape.
6.	They live for 120 days.	They live for 12-13 days.
7.	R.B.C. are destroyed in spleen.	W.B.C. are destroyed in liver, blood and lymph.
8.	New R.B.C. are produced from bone marrow	These are produced from lymph nodes, spleen and thymus gland.
9.	Production of R.B.C. is called Erythropoiesis.	Production of W.B.C. is called Leucopoiesis.

## 4. What is Serum?

- ◆ Serum is fluid part of the blood collected after blood is allowed to clot. It is similar to plasma except some proteins.

## 5. What is Saline?

- ◆ 0.9% of sodium chloride solution is called saline.

## 6. What is Heparin?

- ◆ Plasma contains an organic substance which prevents clotting of the blood when blood flows in

the blood vessels is called heparin.

## 7. What is blood transfusion? When can one donate blood?

- ◆ Administering blood of one person to another person through the vein is called blood transfusion.
- ◆ Blood transfusion is recommended by doctors.
- ◆ When a person loses large volumes of blood during an accident.
- ◆ Before or after surgical operation blood transfusion is to be done.
- ◆ Under severe disease condition also requires blood transfusion.

## 8. Describe the different types of blood groups?

- ◆ There are four blood groups have been recognised in the human beings. They are..

**1. Blood group-A:** Person having this blood group will have Antigen-'A' on their red blood cells and Antibody-'B' in their plasma.

**2. Blood group-B:** Person having this blood group will have antigen 'B' on their red blood cells and Antibody-'A' in their plasma.

**3. Blood group-'AB':** Person having this blood group will have Antigen-'A' and antigen 'B' on their red blood cells, but they do not have both Antibody-'A' and antibody 'B' in their plasma.

**4. Blood group-O:** Person having this blood group will not have either Antigen 'A' or Antigen 'B' as their red blood cells but have both Antibody 'A' and Antibody-'B' in their plasma.

- ◆ The following table will help you to understand

Blood Group	Antigen as R.B.C	Antibody in Plasma
A	A	B
B	B	A
AB	A&B	No antibodies
'O'	No antigen	Antibody A&B

this better

- ◆ **Very important bits which are often asking in Board Examination.**

1. \_\_\_\_\_ blood group is called universal

- recipient.
2. \_\_\_\_\_ blood group is called universal donor.
  3. Agglutination of blood is due to the \_\_\_\_\_ of blood cells.
  4. The production of RBC is called \_\_\_\_\_
  5. The cells that play an important role in clotting of blood are \_\_\_\_\_
  6. \_\_\_\_\_ is the organic substance present in RBC.
  7. Multi lobed nucleus is seen in \_\_\_\_\_ WBC
  8. Smallest WBC is \_\_\_\_\_
  9. The life span of WBC is \_\_\_\_\_ days.
  10. \_\_\_\_\_, \_\_\_\_\_ are the proteins present in plasma of blood.
  11. Sodium oxalate or sodium citrate prevent \_\_\_\_\_ of blood.
6. Porphyrin
  7. Neutrophil
  8. Lymphocytes
  9. 12-13
  10. Albumin Globulin and Prothrombin
  11. Clotting

### KEY

1. 'AB'
2. 'O'
3. Clumping
4. Erythropoiesis
5. Blood platelets