

# BLOOD PRACTICAL – 1

Q.1 What do you understand by the terms?

Polycythemia:	Increased red blood cells count above normal.
Anaemia:	Decreased red blood cells count or hemoglobin concentration below normal.
Leucocytosis:	Increased white blood cells count above normal.
Leucopenia:	Decreased white blood cells count below normal.
Differential Leucocyte Count:	Measurement of each subtype of white blood cells.
Thrombocytopenia:	Decreased platelets count below normal.
Thrombocytosis:	Increased platelets count above normal.

Q.2 What is the clinical importance of knowing Red blood cells indices?

They help to determine the type of Anemia a person is suffering from.

Q.3 Classification of Anemia:

Blood loss Anemia:	due to hemorrhage losing at least 2 liters of blood.
Impaired RBC Formation:	due to destruction of bone marrow by radiations or drugs.
Increased RBC destruction:	due to some hemolytic disease such as malaria.

Q.4 Subject A:

$$MCV = \frac{PCV \times 10}{RBC \text{ Count}} \quad MCV = \frac{25 \times 10}{3.6} \quad MCV = 69.4$$

$$MCH = \frac{Hb \times 10}{RBC \text{ Count}} \quad MCH = \frac{7 \times 10}{3.6} \quad MCH = 19.4$$

$$MCHC = \frac{Hb \times 100}{PCV} \quad MCHC = \frac{7 \times 100}{25} \quad MCHC = 28$$

Subject B:

$$MCV = \frac{PCV \times 10}{RBC \text{ Count}} \quad MCV = \frac{29 \times 10}{3} \quad MCV = 96.6$$

$$\text{MCH} = \frac{\text{Hb} \times 10}{\text{RBC Count}}$$

$$\text{MCH} = \frac{8.2 \times 10}{3} \quad \text{MCH} = 27.3$$

$$\text{MCHC} = \frac{\text{Hb} \times 100}{\text{PCV}}$$

$$\text{MCHC} = \frac{8.2 \times 100}{29} \quad \text{MCHC} = 28.2$$

Subject A = Microcytic Hypochromic Anemia due to iron deficiency.

Subject B = Macrocytic hypochromic Anemia due to folic acid deficiency.

## BLOOD PRACTICAL – 2

Q.1 no need to answer

Q.2 Neutrophils: Increased in acute bacterial infections

Eosinophils: Increased in allergic reactions and acute parasitic infections

Basophils: Increased in allergic reactions and malignancies

Q.3 The increased lymphocyte count signifies the viral infections.

Q.4 Leishman's Stain and Wright's stain

Q.5 Neutrophils: Cytoplasm contains fine granules and nucleus is multi-lobed.

Eosinophils: Cytoplasm contains thick red granules and nucleus is bi-lobed.

Basophils: Cytoplasm contains thick blue granules which cover the nucleus.

Lymphocytes: Cytoplasm has no granules and nucleus is round or oval.

Monocytes: Cytoplasm has no granules and nucleus is kidney-shaped.

## BLOOD PRACTICAL – 3

### Experiment - 1

Q.1 Group	Agglutinogen	Agglutinin
A	A	anti-B
B	B	anti-A
AB	A, B	no agglutinin
O	-	anti-A, anti-B

Q.2 Your blood group.

Q.3 If your blood group is A+, then you can donate blood to A+ and AB+ and you can receive blood from A+, A-, O+ and O-.

Q.4 no need to answer.

Q.5 no need to answer

Q.6 no need to answer

Q.7 Erythroblastosis Fetalis

- i. It is treated by exchange transfusion of same type of blood.
- ii. It is prevented by injecting anti-D antibodies to the mother.

## Experiment - 2

Q.1 Your clotting time (Normal 3 – 10 minutes)

Q.2 Hemophilia

Q.3 Heparin, warfarin, Sodium citrate, calcium oxalate etc.

Q.4 before surgery

Q.5 lungs, liver, basophils and mast cells.

Q.6 no need to answer.

## Experiment – 3

Q.1 Your bleeding time, if it is high, it is because of low platelet count.

Q.1 the template method is more accurate.

Q.2 Thrombocytopenia

## Experiment - 4

Q.1 no need to answer

Q.2 no need to answer

Q.3 it is a prognostic test as well as non-specific diagnostic test.

Q.4 Anemia, pregnancy, fever, infections and malignancies.