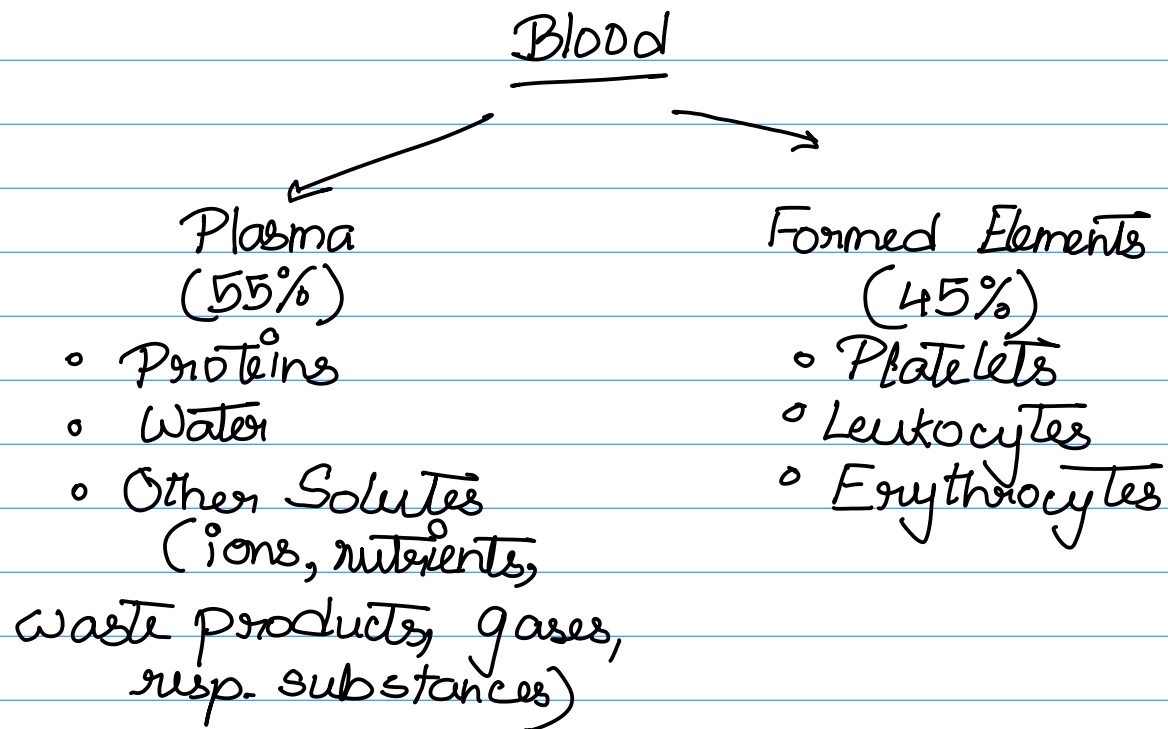


Day 4 (Immunology)

Components of Blood



Leukocytes are of different kinds. How do we differentiate between them?

Cluster of Differentiation (CD) molecules

- important for differentiating between functional capacities of cells. - indicators
- 3 molecules associated with T cells
- CD3
 - coreceptor of TCR
 - composed of 6 polypeptides
 - involved in transmembrane signalling and T cell

activation

Pro-Thymocytes (T cell precursor)

- all T cells are $CD3^+$ - initially expressed in 1
- associated with TCR

Note

- ① B cells, granulocytes, macrophages, are all negative for $CD3$
- ② NK cells are also $CD3^+$, but express ϵ chain of $CD3$.

CD4

- glycoprotein capable of recognising non-peptide binding portion of MHC class II molecules.
- expressed on two-thirds of mature T cells
- $CD4^+$ T cells are called T_H or helper T cells
- helper cells are supposed to send signals to T_c cells to destroy infectious pathogen.
- member of the immunoglobulin superfamily

Note:

also presented in monocytes, macrophages & dendritic cells.

CD8

- transmembrane glycoprotein
- two-chain cell surface molecule
- expressed as a homodimer or a heterodimer
- recognises non-peptide binding positions of MHC Class-I molecules.
- affinity keeps the T_c cell and the target pathogen close together during antigen-specific activation.

Note

can be found on NK cells & dendritic cells