

**Objective** - Student will study about the process that takes place in the lab to make sure that donated blood, or blood products, are safe before they are used in blood transfusions and other medical procedures and blood typing.

**UNIT - 1**      Blood Grouping: introduction, ABO subgroups, red cell antigen, natural antibodies, Rh system, Rh antigen and antibodies, hemolytic disease of new born and prevention, principle of blood grouping, antigen antibody reaction, agglutination, hemagglutination, conditions required for antigen antibody reaction, blood grouping techniques, cell grouping, serum grouping, difficulties in ABO grouping, rouleaux formation, inheritance of blood groups, A&B cell preparation.

**UNIT - 2**      Blood donation and transfusion: principal and practice of blood transfusion, guidelines for the use of blood, blood transfusion practices, procedure for usage, storage of blood, screening of donor, blood donor requirements, criteria for selection and rejection, medical history and personal details, health checks before donating blood, screening for TTl.

**UNIT - 3**      Blood collection, storage and transport and maintenance of blood bank records: blood collection packs, anticoagulants, taking and giving sets in blood transfusion, techniques of collection blood, instructions given to the donor, screening donor's for infectious agents, bacterial contaminated blood, blood donation record book, blood donor card, storage of blood, change in blood after storage, transportation    blood bank temperature sheet, stock sheet, blood transfusion request form.

**UNIT - 4**      Compatibility, blood components and blood transfusion reaction: purpose of compatibility testing, single tube and emergency compatibility testing techniques, difficulties in cross match, collection of blood components for transfusion, platelets, packed red cell, PRP, investigation of a transfusion reaction, hemolytic transfusion reaction, actions to take when transfusion reaction occurs.

### **Recommended Books:**

- Basic and applied concepts of blood banking and transfusion practices,
- blood banking and transfusion medicine, modern blood banking and transfusion practices