MLT Syllabus

Unit 1: General haematology

1. Cell injury and cellular adaptation.
2. Cellular adaptations-atrophy, hypertrophy, hyperplasia and dysplasia.
3. Formation, composition and function of blood.
4. Collection, preservation, transport and disposal of blood sample.
5. Anticoagulants, mode of action of anticoagulants and their merits and demerits.
6. Basic haematology and estimation of haematocrit values, physiological variations, normal and absolute values and quality assurance in haematology.

Unit 2: Basic pathology

1. Pathology of inflammation in response to microbial invasion.
2. Pathology of localized and systemic infections.
3. Pathology of specific chronic infective disorders: Tuberculosis, SABE, Rheumatological disorders, leprosy, syphilis, etc.
4. Invasive techniques for diagnosis of acute and chronic microbial infections.
5. Microbes responsible for pathogenesis of tumors and their oncogenesis.
6. Various routes of transport of microbes to human body and methods of defence.

Unit 3: Non-neoplastic haematology

1. Disorder of red cells.
2. Disorder of white blood cells.
3. Haemostatic mechanism.
4. Blood coagulation theory.
5. Platelet disorders in primary haemostasis.
6. Von- wille brand (VWF) disorder.

Unit 4: Neoplastic haematology

1. Molecular genetics of myeloid leukemia's, CBF translocation,RAR translocation.
2. Molecular genetics of lymphoid leukemia's, tel gene translocation, RAR translocation.
3. Principle of diagnosis of hematopoietic- Lymphoid neoplasm.
4. Molecular genetics of non-Hodgkins lymphomalignancies.
5. Haematopoietic stem cells transplantation and its application.
6. Cytokines, interferon, interleukins their role in haematologic neoplastic conditions.

Unit 5: Immunehaematology & Transfusion Medicine

1. Detection of various allergic agents and immunopathology of allergy.
2. Introduction of antigens, immunoglobulins and antibodies, cells and organ of immune system, humoral and cellular immune response.
3. Cancer immunology and tumor markers.
4. Cytogenetics in haematology, radioisotopes and their application.
5. HLA-typing, MHC-molecules, Tissue typing for organ transplant.
6. Component preparation and uses, organization, planning and management of blood bank, Quality control in blood banking, Apheresis, flowcytometery, PCR, Hybridization, stem cell therapy and gene therapy.