

DEPARTMENT OF PATHOLOGY, CDSIMER Syllabus for PhD (Pathology)

1. General Pathology

- Normal cell , cell Injury,tissue structure and function, Inflammation and repair.
- Reaction of cells, tissues, organ systems and the body as a whole to various sublethal and lethal injuries.
- The changes in cellular structure and function in disease.
- Causes of disease and its pathogenesis.

A. Applied Anatomy, Physiology, Biochemistry, Histology and Cytopathology in context to the subject of Pathology.

B. Techniques in pathology pertaining to all the sub disciplines in the subject of pathology.

C. Recent advances in pathology encompassing its sub disciplines.

2. Systemic Pathology

- Normal structure and function of various organ systems.
- Etiopathogenesis, gross features and microscopic alterations of structure of organ systems in disease and functional correlation with clinical features.
- Histogenetic and pathophysiologic process associated with various lesions.

A. Applied Anatomy, Physiology, Biochemistry, Histology and Cytopathology in context to the subject of Pathology.

B. Techniques in pathology pertaining to all the sub disciplines in the subject of pathology.

C. Recent advances in pathology encompassing its sub disciplines.

3. Hematopathology

- Principles of the practice of haematology for the planning of tests, interpretation and diagnosis of diseases of the blood and bone marrow.
- Various eqipments used in haematology.
- Automation and quality assurance in Haematology

A. Applied Anatomy, Physiology, Biochemistry, Histology and Cytopathology in context to the subject of Pathology.

B. Techniques in pathology pertaining to all the sub disciplines in the subject of pathology.

C. Recent advances in pathology encompassing its sub disciplines.

4. Transfusion Medicine and Chemical Pathology:

- ABO, Rh blood groups and its significance.
- Blood component therapy.

- Transfusion therapy including the use of whole blood and RBC concentrates.
- Rationale of pre transfusion testing.
- Adverse reactions to transfusion of blood and components.
- Quality control in Blood Bank.
- Renal Function Test
- Liver function test
- Pancreatic function test
- Endocrine function test
- Tests for malabsorption
- Gastric function tests
- Tests for myocardial diseases.

A. Applied Anatomy, Physiology, Biochemistry, Histology and Cytopathology in context to the subject of Pathology.

B. Techniques in pathology pertaining to all the sub disciplines in the subject of pathology.

C. Recent advances in pathology encompassing its sub disciplines.

5. Immunology & Immunodiagnostics and Genetics & Molecular Genetics:

- Current concepts of structure and function of immune system, its aberrations and mechanisms involved.
- Scope, principles, limitations and interpretation of the results of the procedures employed in clinical and experimental studies.
- ELISA Techniques.
- Principles of molecular biology related to the understanding of disease process and its use in various diagnostic tests.
- Principles and steps of interpretation of polymerase chain reaction (PCR), Western blot test, Southern blot, Northern blot and hybridization process.

A. Applied Anatomy, Physiology, Biochemistry, Histology and Cytopathology in context to the subject of Pathology.

B. Techniques in pathology pertaining to all the sub disciplines in the subject of pathology.

D. Recent advances in pathology encompassing its sub disciplines, Application of AI in Pathology.

E. Study of Digital morphology of various cell types ,integrating AI and digital morphology along with cell counter results and release of reports