PACIFIC MEDICAL UNIVERSITY, UDAIPUR

Ph.D. Entrance Syllabus –Pathology

1. General Pathology

- Cell injury, adaptation, and death
- Inflammation (acute & chronic)
- Repair, healing, and fibrosis
- Hemodynamic disorders (edema, thrombosis, embolism, shock)
- Immunopathology (hypersensitivity, autoimmunity)
- Neoplasia (carcinogenesis, tumor markers, grading & staging)
- Genetic and molecular basis of diseases

2. Systemic Pathology

A. Cardiovascular System

- Atherosclerosis
- Ischemic heart disease
- Myocarditis, cardiomyopathies
- Valvular diseases
- Vascular disorders

B. Respiratory System

- Pneumonia, TB, interstitial lung diseases
- COPD, asthma
- Pulmonary embolism, pulmonary hypertension
- Lung tumors

C. Gastrointestinal System

- Esophagitis, gastritis, peptic ulcer
- Inflammatory bowel disease
- Liver diseases (hepatitis, cirrhosis)
- Pancreatitis, pancreatic tumors
- GI malignancies

D. Hepatobiliary & Pancreas

- Hepatitis, cirrhosis
- Cholestatic diseases
- Hepatic tumors

E. Renal System

- Glomerulonephritis
- Tubulointerstitial nephritis
- Renal failure
- Renal tumors

F. Hematology

- Anemias, leukemias
- Hemoglobinopathies
- Coagulation disorders
- Lymphomas
- Bone marrow pathology

G. Endocrine System

- Diabetes, thyroid disorders
- Adrenal disorders
- Pituitary and parathyroid diseases

H. Nervous System

- Neurodegenerative diseases
- CNS infections
- Tumors of CNS

I. Musculoskeletal System

- Bone tumors
- Osteoporosis
- Inflammatory myopathies

J. Skin & Soft Tissue

- Inflammatory dermatoses
- Skin tumors

3. Clinical Pathology / Laboratory Medicine

- CBC and interpretation
- Peripheral smear
- Hemostasis and coagulation tests
- Blood banking & transfusion medicine
- Clinical chemistry basics (LFT, RFT, electrolytes)
- Urine and body fluid analysis
- Microbiology basics

4. Cytology

- Principles of cytology
- FNAC technique and interpretation
- Pap smear and cervical cytology
- Cytology of breast, thyroid, lymph node, etc.

5. Histopathology

- Tissue processing and staining
- H&E staining principles
- Special stains (PAS, reticulin, Masson's trichrome, etc.)
- Immunohistochemistry basics
- Frozen section

6. Molecular Pathology

- PCR and real-time PCR
- FISH
- Next-generation sequencing (basic concepts)
- Molecular markers in cancer

7. Forensic Pathology (Basic)

- Postmortem changes
- Types of injuries
- Cause and manner of death
- Toxicology basics