

Pathology

**POST GRADUATE DEGREE
STANDARD**

UNIT I

CELL INJURY AND CELL ADAPTATION

Ethiological factors and Mechanisms. Reversible Cell injury and Intracellular Accumulations of pigments and other substances. Adaptation to Cell injury or stress. Apoptosis - Hyperplasia - Hypertrophy - Metaplasia Atruphy

UNIT II

INFLAMMATION AND REPAIR

Morphological types of inflammation - serous Inflammation, Fibrinous Inflammation, Suppurative Inflammation, Haemorrhagic, Inflammation, Pseudomembranous Inflammation Cells of Acute inflammation and Chronic inflammation, Granuloma, Humoral patterns of Inflammation - Molecular basis of inflammatory events. Wound healing, repair of bone, local and systemic factors affecting repair.

UNIT III

INFECTIONS

Pathology and Pathogenesis of Bacterial infections like Typhoid, Tuberculosis, Leprosy and Venereal Diseases. Parasitic infections like Amoebiasis, Hydaid disease, Malaria, Leishmaniasis, Filariasis, Cysticercosis, Pneumocystitis Carni and Worm Infestations like Ascariasis, Hookworm, Pinworm, Threadworm, Schistosomiasis, Giardiasis. Viral Diseases:- Herpes, Measles, Influenza infectious Mononucleosis, Yellow fever, Cytomegaloyirus Fungal Infections: Mycetoma, Rhinosporidiosis, Candidiasis, Aspergillosis, Cryptococcosis, Mucormycosis, Chromoblastomycosis, Histoplasmosis.

UNIT IV

VASCULAR DISORDERS

Thrombosis, Embolism, Necrosis, Gangrene, Pigmentary Disorders, Jaundice, Hyperaemia, Congestion, Oedema and Infaraction

UNIT V

PHYSICAL AND CHEMICAL INJURY AND RADIATION HAZARDS

Environmental and Occupational injury.

UNIT VI

DISORDERS OF GROWTH

Neoplasms, Carcinogenesis, Benign and Malignant Tumour Spread of Tumours, Epithelial and connective tissue tumours, Epidemiology of cancer, Genetic basis of Neoplasia, Tumour immunity, Carcinogenesis - Physical, Chemical, Viral Radiation, Lab Diagnosis of Cancer with emphasis on Tumour Markers, flow and image Cytometry.

UNIT VII

GENETICS

Human chromosomes, Normal and Abnormal Karyotypes Autosomal and sex chromosomal defects genes and disease, Inheritance patterns.

UNIT VIII

METABOLIC DISORDERS

Storage Disorders, Other Metaboli

UNIT IX

IMMUNOLOGY

Immune response, Histocompatibility Antigens, Immunoglobulins, Lymphocytesubsets, Hypersensitivity disorders, Autoimmune diseases, Humoral and Cellular immunity, Cytokines, Primary immunodeficiency, severe combined immuno-deficiency associated with other defects, opportunistic cancers in Immunodeficiency.

(a)ACQUIRED IMMUNODEFICIENCY SYNDROMES (AIDS):- Epidemiology, clinical course, HIV 1 and HIV2, Pathogenesis of AIDS Manifestations of AIDS, AIDS associated diseases infective and Neoplastic, laboratory diagnosis, Paediatric AIDS, AIDS in Pregnancy.

(b)TRANSPLANTATION PATHOLOGY:- Rejection Phenomenon - Pathogenesis and Pathology, Graft versus host reaction.

(c)AMYLOIDOSIS:- Pathology and Pathogenesis, Manifestations, Diagnosis and Laboratory investigations.

UNIT X

NUTRITION

Types and consequences of malnutrition, vitamin deficiency, deficiency of mineralsm trace elements, obesity - pathogenesis and metabolic aspects, Medical complications.

UNIT XI

PRIONS

Molecular pathogenesis of Prions human prion disease, diagnostic criterion of human prion's disease.

UNIT XII

HAEMATOLOGY

Plasma Cell dyserasis. Anaemias - Iron deficiency, Megaloblastic, Haemolytic and aplastic, Polycythemia, Methemoglobinemia and Porphyria. Leucocytosis, Leukaemias - acute and chronic, agranulocytosis, Myelofibrosis, Haemophagocytic syndrome. Hemorrhagic disorders.

UNIT XIII

IMMUNO HAEMATOLOGY

ABO and Rh blood grouping systems, Blood component preparations - Antibody detection and identification, quality assurance, Transfusion reactions and screening technics.

UNIT XIV

AUTOPSY

Purpose, methodology, technical factors.

UNIT XV

CYTOPATHOLOGY

Principles of cytomorphology - preparations of Cellular specimen. From female genital tract, body cavity fluids and other sites.

UNIT XVI

FINE NEEDLE ASPIRATION CYTOLOGY

ENAC of superficial organs. ENAC of deep organs.

UNIT XVII

INFORMATICS

Laboratory information systems - Emerging Technologies.

UNIT XVIII

ELECTRON MICROSCOPY

Technical issues, ultra structural diagnosis of tumour biopsy, ultrastructural diagnosis of non tumourous lesions.

UNIT XIX
HISTOCHEMISTRY

Applications in specific organs -Tumour diagnosis and other applications.

UNIT XX
IMMUNOHISTOCHEMISTRY

Immuno histochemistry as laboratory test, immunohistochemistry limitations and current applications.

UNIT XXI
INSITU HYBRIDISATION

Methods and applications

UNIT XXII
FLOW AND IMAGING CYTOMETRY

Flow cytometry and diagnostic pathology, Methodology, applications. Principles and technics in image analysis and its clinical applications.

UNIT XXIII
CELLULAR PATHOLOGY TECHNIQUES

Fixatives, processing, microtomes, staining procedures and impregnation Special stains for protein, Carbohydrate fat, enzymes, nucleic acids, amyloid, metals calcium and iron, connective tissue, fungus and abnormal cell accumulations etc.,

UNIT XXIV
RECENT ADVANCES

PAPER -II

UNIT I
CARDIOVASCULAR SYSTEM

Congenital heart disease, Rheumatic heart disease - Pathogenesis and Pathology, Bacterial Endocarditis, Cardiomyopathies, Atherosclerosis, Coronary heart disease, Myocardial infarction, Hypertensive heart disease, Aneurysms, Congestive cardiac failure, Myocarditis, Pericarditis, Tumours of heart and blood vessels, Vasculitis.

UNIT II
RESPIRATORY SYSTEM

Pneumonias, Bronchiectasis, Pulmonary vascular disease, Lung Abscess, Empyema, Pneumoconiosis, Atelectasis, Chronic obstructive Pulmonary airway disease, Acute Respiratory distress syndrome, Immunologic lung disease, Collagen vascular disease, Pulmonary vasculitis, Idiopathic Interstitial Pneumonia and Pulmonary fibrosis, lung tumours Pleural tumours - Mesothelioma

UNIT III
MOUTH AND OROPHARYNX

Cysts, Premalignant and Malignant Tumours, Odontogenic cysts and Tumours.

UNIT IV
SALIVARY GLANDS

Sialadenitis, Sialolithiasis, Tumours of Salivary Glands.

UNIT V

OESOPHAGUS

Reflux Esophagitis, Oesophageal atresia, Barret's Oesophagus, Oesophageal Tumours.

UNIT VI

STOMACH AND DUODENUM

Ptyptic Ulcer, Gastritis, Tumours of Stomach.

UNIT VII

SMALL INTESTINE

Tuberculosis, Malabsorption, Lymphoma and Other Tumours, Infections, Circulatory Disturbances.

UNIT VIII

APPENDIX

Appendicitis, Tumours, Pseudomyxoma Peritonei.

UNIT IX

LARGE INTESTINE (RECTUM AND ANAL CANAL)

Amoebiasis, Bacillary Dysentery, Hirschsprung's disease, Polyps, Ulcerative Colitis, Crohn's disease, Meckel's Diverticulum, Adenocarcinoma, Hemorrhoids, Fistula, Sinus, Fissures, Circulatory Disturbances, Volvulus and Other Tumours.

UNIT X

LIVER, GALL BLADDER AND PANCREAS

Investigation of liver disease, viral hepatitis, Cirrhosis, Hepatocellular Carcinoma, and other Tumours Metastatic Lesions, Gall stones, Cholecystitis, Tumours, Pancreatitis, and Tumours, Portal Hypertension, Ascites, Pseudopancreatic Cyst, Congenital Hepatic Fibrosis, Non Cirrhotic Portal Fibrosis, Neonatal Hepatitis, Drug - Induced Hepatitis, Lupoid Hepatitis, Liver Diseases associated with enzyme defects - Gilbert's, Dubin Johnson Syndrome, Budd Chiari Syndrome, cystic lesions of liver, Non-viral lesions of liver.

UNIT XI

URINARY SYSTEM

Nephritis, Nephrotic syndrome, Chronic Glomerulonephritis, Pyelonephritis, Renal Tuberculosis, Polycystic Kidney, Urinary calculi, Hydronephrosis, Tumours Investigation of Renal disease, Classification of Renal disease, Pathogenesis of Renal diseases - Immunologic and Non Immunologic, Glomerular Lesions associated with disseminated Intravascular Coagulation, Renal disease complicating Pregnancy Tubulointerstitial Nephritis, Renal vascular disease - Hypertension, Acute tubular Necrosis and Acute renal failure, Glomerular lesions associated with systemic disorders - SLE, Diabetes, Polyarteritis nodosa, Malaroplakia, Cystitis, Urethral caruncle and other lesions Tumour of Urinary Bladder.

UNIT XII

MALE GENITAL SYSTEM

Squamous Cell carcinoma of Penis, Benign Adenomatous Hyperplasia of Prostate, Tumours of Prostate, Undescended testis, Orchitis, Tumours of Testis Lab Diagnosis of Sterility, Premalignant Lesions of Penis, Mechanical Trauma and Haemodynamic disorders of Scrotum.

UNIT XIII

MALE GENITAL SYSTEM

Intersexuality, Congenital and Acquired Lesions of Penile Urethra and Glans Penis. Paratesticular Tumours.

UNIT XIV

FEMALE GENITAL SYSTEM

Uterus - Endometrial Cyclical changes, hormonal changes, hyperplasia - Dysfunctional Uterine bleeding

and tumours.

CERVIX

Human papilloma virus infection and its role in cervical cancer, cervical intra-epithelial neoplasia CIN, Carcinoma Cervix. TUBES AND OVARIES:- Non neoplastic lesions and Cysts neoplastic lesions, torsion, and ectopic gestation. PLACENTA:- Gestational trophoblastic disease, tumours and infarction.

UNIT XV

MUSCULOSKELETAL SYSTEM

Muscle biopsy, Myopathy, Myositis, dystrophy, atrophy and hypertrophy. Bone Inflammatory lesions - Osteomyelitis, Neoplastic lesions - benign and malignant, degenerative lesions like osteoarthritis, traumatic and metabolic lesions. Diseases of bursae, tendons and fascia.

UNIT XVI

CENTRAL NERVOUS SYSTEM AND PERIPHERAL NERVOUS SYSTEM

Infections, degenerative lesions, metabolic and toxic lesions, neural lesions including neoplasms.

UNIT XVII

ENDOCRINES THYROID

Inflammatory and neoplastic

PARATHYROID:-

Hyper and hypoparathyroidism, and neoplasms.

PITUITARY:-

Dysfunction and tumours

ADRENAL CORTEX:-

Hyper and Hypofunction, tumours.

ADRENAL MEDULLA:-

Tumours - Pheochromocytoma, Neuroblastoma.

ENDOCRINE PANCREAS:-

Diabetes mellitus, and Multiple endocrine neoplasia

UNIT XVIII

BREAST

Non neoplastic and neoplastic lesions.

UNIT XIX

RETICULO ENDOTHELIAL SYSTEM

Spleen - Splenomegaly, Lymph node - Lymphadenitis, and lymphomas. Recent concepts regarding various types of lymphoma.

UNIT XX

THYMUS AND MEDITASTINUM

Infections, tumours and tumour like lesions.

UNIT XXI

EAR, NOSE, THROAT

Polypos, tumours and tumour like lesions, Otitis media, Cholesteatoma.

UNIT XXII

EYE

Infections and tumours and Tumour like lesions.

UNIT XXIII

SKIN

Neoplastic and non neoplastic lesions and preneoplastic lesions.

UNIT XXIV

RECENT ADVANCES

