HUMAN ANATOMY SYLLABUS

FOR

PH.D ENTRANCE EXAMINATION

GROSS ANATOMY

General and systemic anatomy of Osteology, arthrology, muscle & fascia, skin, nervous tissue, arterial, venous and lymphatic pathways. Detailed gross anatomy of the human body including sectional anatomy, evolution, functional anatomy, anthropometry and anatomical basis of clinical conditions, principals involved in plain radiography, special investigative procedures and newer imaging techniques, forensic anatomy and living anatomy.

DEVELOPMENTAL ANATOMY (EMBRYOLOGY)

Gametogenesis, fertilization, implantation, development of placenta, early human embryonic development, assisted reproductive technology, the basic principles and sequential development of the organs and systems, the critical stages of developmental hazards, developmental basis of the variations, physiological correlation of congenital anomalies and postnatal growth & development.

HISTOLOGY AND HISTOCHEMISTRY

Light and electron microscopic detailed structure of cell and its components, tissues of body, systems/organs and structural basis of function, general principles of light and other microscopes and principles of basic histological and cytological techniques. Immune system and the cell types involved in defence mechanisms of the body. Gross features, cytoarchitecture, functions, development and histogenesis os various primary and secondary lymphoid organ in the body. Biological and clinical significance of the major histocompatibility complex of man including its role in transplantation, disease susceptibility/resistance and genetic control of the immunology and histocompatibility testing. Light microscopy and its application, electron microscopy and its applications, identification of normal and abnormal organelles in electron micrographs. Preparation of tissues for histological sections and identification of all the tissues and organs for histological sections and identification of all the tissues and organs of the body under light microscope. Histological staining: routine & special. Identification of artifacts and three-dimensional interpretation.

GENETICS

Structure of genes and chromosomes, karyotyping and banding patterns, chromosomal aberrations, inheritance, molecular genetics, mutations, genome imprinting, cancer genetics, reproduction genetics (male and female infertility, assisted reproduction, preimplant genetics, prenatal diagnosis, genetic counselling), population genetics, human genome project, genetic counselling, Autosomal and Sex linked genetic disorders, Dermatoglyphics.

NEUROANATOMY

Development and structural organization of various parts of the nervous system with particular reference to their connections and functions, localisation and effects of lesions in different parts of the central nervous system and nerve injuries. Identification of structures in stained section of brain and spinal cord. Staining nervous tissue using Nissl's staining. Discussions on clinical problems related to neurological disorders and anatomical explanation for the same.

HISTORY OF ANATOMY, APPLIED AND RECENT ADVANCES.

History of anatomy and Medicine, Various Anatomists contributing to the field of Anatomy. Clinical correlation of structure and functions of human body and anatomical basis for clinical presentations. Applications of knowledge of embryology, microanatomy, neuroanatomy to comprehend deviations from normal. Recent advances in medical sciences that facilitates comprehension of structure-functional correlations and its applications in clinical problems solving.

MUSEUM TECHNIQUES

Anatomy act and body donation, different methods of cadaver embalming, preparation and preservation of museum specimens, Mounting of dry and wet specimens in museum, recent advances and different methods in cadaver preservation techniques.