

SYLLABUS OF PART – I

SUBJECT: ORAL & MAXILLOFACIAL PATHOLOGY AND ORAL MICROBIOLOGY

Applied Anatomy:

- Temporomandibular Joint.
- Osteology of skull and mandible.
- Trigeminal and Facial nerve-extracranial course.
- Muscles of Mastication and facial expression.
- Tongue.
- Salivary glands.
- Nerve supply, blood supply, lymphatic drainage and venous drainage of Oro dental tissues.
- Maxillary sinus.

Embryology:

- Development of face, palate, mandible, maxilla, tongue, salivary gland and applied aspect of the same.
- Development of teeth and dental tissues and developmental defects of oral and maxillofacial region and abnormalities of teeth.

Genetics:

- Introduction, mode of inheritance, chromosomal anomalies of oral tissues and single gene disorder.

Immunology:

- Basic principles of immunity, antigens, and antibody reactions.
- Cell mediated immunity and humoral immunity.
- Immunology of hypersensitivity.
- Immunological basis of autoimmune phenomenon.

Physiology:

- Saliva.
- Pain.
- Mastication.
- Taste.
- Deglutition.
- Vitamins (Influence on growth, Development and structure of Oral soft and hard tissues and para oral tissues.)
- Calcium metabolism.
- Theories of mineralization.

- Hormones (Influence on growth, Development and structure of Oral soft and hard tissues and para oral tissues.)
- Blood and its constituents.

Cell Biology:

- Cell structure and function (Ultra structural and molecular aspects), intercellular junctions, cell cycle and division, cell cycle regulators, cell to cell extra cellular matrix interactions.
- Detailed molecular aspects of DNA, RNA and intracellular organelles, transcription and translation.
- Molecular biology techniques.
- Experimental aspects – DNA extraction, PCR, Western blotting.

Biochemistry:

- Chemistry of carbohydrates, lipids and proteins.
- Biological oxidation.
- Various biochemical techniques.

Pathology and Microbiology:

- **General Pathology:** Inflammation and chemical mediators, thrombosis, embolism, necrosis, repair, Wound healing, degeneration, blood dyscrasias. Carcinogenesis and neoplasia (General considerations).
- **General Microbiology:** Definitions of various types of infections, Routes of infection and spread, Sterilization, disinfection and antiseptics, Physiology and growth microorganisms.
- **Systemic Microbiology:** Morphology, classification, pathogenicity, mode of transmission, methods of prevention, collection and transport of specimen for laboratory diagnosis, staining methods, common culture media.
- Staphylococci
- Streptococci
- Mycobacteria
- Clostridia, bacteroids and fusobacteria
- Actinomycetales
- Spirochetes

Mycology:

- General properties of fungi, classification, superficial subcutaneous and deep opportunistic infections.

- General principles of fungal infections.

Virology:

General Properties: structure, broad classification of viruses, pathogenesis, pathology of viral infections.

Basic Histo-techniques and Microscopy:

- Routine hematological tests and clinical significance of the same.
- Biopsy procedures for oral lesions.
- Processing of tissues for paraffin embedding.
- Stains, principles and theories of staining techniques.
- Microscope and principle of microscopy.
- Light microscopy and various other types including electron microscopy.
- Methods of tissue preparation for ground sections, decalcified sections.

Applied Pharmacology:

Research Methodology and Bio Statistics:

- Basic Principles of Biostatistics and study as applied to dentistry and Research.
- Collection /organization of data/ measurement scales presentation data and analysis.
- Measures of central tendency (Mean, Median Mode).
- Measures of variability.
- Sampling, designing and methods.
- Probability, normal distribution and indicative statistics.
- Tests of significance (Parametric/nonparametric qualitative methods).
- Analysis of variance.
- Association, correlation and regression.
- Research ethics.
- Informed consent.

Applied Dental Anatomy and Histology:

- Study of morphology of permanent and deciduous teeth.
- General Histology: Light and electron microscopy considerations of epithelial tissue and connective tissue structures and functions of oral, dental and paraoral tissues including their ultra structure, molecular and physio-biochemical aspects.