

Syllabus for the post of

Assistant Professor, Dentistry, Class-I (Advt. No. 74/2023-24)

Marks – 200

Questions – 200

Medium - English

1. APPLIED BASIC SCIENCES:

Applied anatomy of head and neck, Applied Physiology and Nutrition, Applied pharmacology and therapeutics, Applied pathology, Applied microbiology, Applied oral Pathology, Laboratory determinations, Biostatistics, Applied radiology, Applied medicine, Applied surgery & anesthesia, Applied plastic surgery, Applied Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Embryology , Anatomy and development of teeth, Applied dental materials, Genetics, Physical Anthropology, Applied research Methodology in orthodontics, Applied Anatomy and Histology, Growth & development, Applied nutrition and dietics, biostatistics and research methodology, Cell biology, General Histology, General Pathology, General Microbiology, Basic immunology, Oral biology, Basic Histo-techniques and microscopy, General human anatomy, Growth & development , Dental anatomy , Endocrines, Applied nutrition, Introduction to biostatistics, Research methodology, Applied radiology biostatistics, Roentgenographic techniques, Applied medicine

2. PROSTHODONTICS AND CROWN & BRIDGE:

ORAL AND MAXILLOFACIAL PROSTHODONTICS AND IMPLANTOLOGY:

- **NON-SURGICAL AND SURGICAL METHODS OF PROSTHODONTICS AND IMPLANTOLOGY**
- **MAXILLOFACIAL REHABILITATION:**
- **OCCLUSION**
EVALUATION, DIAGNOSIS AND TREATMENT OF OCCLUSAL PROBLEMS:
- **FIXED PROSTHODONTICS**

- **TMJ – Temporomandibular joint dysfunction – Scope, definitions, and terminology**
- **ESTHETICS**

3. PERIODONTOLOGY:

- **ETIOPATHOGENESIS**
- **CLINICAL AND THERAPEUTIC PERIODONTOLOGY AND ORAL IMPLANTOLOGY**
 - (i) Gingival diseases
 - (ii) Periodontal diseases
 - (iii) Treatment of Periodontal diseases
 - (iv) Oral implantology
 - (v) Management of medical emergencies in periodontal practice

4. ORAL AND MAXILLOFACIAL SURGERY:

- **Minor Oral Surgery:**

Cysts of the Orofacial Region, Neurological disorders of the Maxillofacial Region, Implantology, Principles of Surgery, Medical Emergencies, Examination and Diagnosis, Haemorrhage and Shock, Exodontia, Impaction, Surgical aids to eruption of teeth, Transplantation of teeth , Surgical, Endodontics, Preprosthetic Surgery, Procedures to Improve Alveolar Soft Tissues, Infections of Head and Neck, Chronic infections of the jaws, Maxillary Sinus

- **Maxillofacial Trauma**

- **Maxillofacial Surgery**

Salivary gland, Temporomandibular Joint, Oncology, Orthognathic surgery, Cysts and tumors of oro facial region, Laser surgery, Cryosurgery, Cleft lip and palate surgery ,Aesthetic facial surgery, Craniofacial surgery

5. CONSERVATIVE DENTISTRY AND ENDODONTICS:

- **Conservative Dentistry**

Examination, diagnosis and treatment plan Occlusion as related to conservative dentistry, contact, contour, its significance. Separation of teeth, matrices, used in conservative dentistry, Dental caries- epidemiology, recent

concept of etiological factors, pathophysiology, histopathology, diagnosis, caries activity tests, prevention of dental caries and management – recent methods, Hand and rotary cutting instruments, development of rotary equipment, speed ranges, hazards, Dental burs and other modalities of tooth preparation- recent developments (air abrasions, lasers etc.) , Infection control procedures in conservative dentistry, isolation equipments etc), Direct concepts in tooth preparation for amalgam, composite, GIC and restorative techniques, failures and management, Biologic response of pulp to various restorative materials and operative procedures, Direct and indirect composite restorations, Indirect tooth colored restorations- ceramic, inlays and onlays, veneers, crowns, recent advances in fabrication and gingival tissue management, Impression procedures used for indirect restorations, Cast metal restorations, indications, contraindications, tooth preparation for class II inlay, onlay, full crown restorations, Restorative techniques, direct and indirect methods of fabrication including material used for fabrication like inlay wax, investment materials and casting, Direct gold restorations, Recent advances in restorative materials, Esthetics including smile design, Management of non-carious lesions, Management of discolored tooth, Minimal intervention dentistry, Recent advances in restoration of endodontically treated teeth and grossly mutilated teeth, Hypersensitivity-theories, causes and management, Lasers in Conservative Dentistry, CAD-CAM in restorative dentistry, Digital imaging and its applications in restorative dentistry, Clinical Photography

- **Endodontics**

Rationale of endodontics , Pulp and periapical pathology, Pathobiology of periapex., Diagnostic procedures – Orofacial dental pain emergencies: endodontic diagnosis and management, recent advances used for diagnosis, Case selection and treatment planning, Endodontic microbiology, Infection control procedures used in Endodontics (aseptic techniques such as rubber dam, sterilization of instruments etc.), Endodontic emergencies and management, Access cavity preparation – objectives and principles, Endodontic instruments and instrumentation – recent developments, detailed description of hand, rotary, sonic, ultra sonic etc, Working length determination, cleaning and shaping of root canal system and recent developments in techniques of canal preparation, Root canal irrigants and

intra canal medicaments, Obturation materials, techniques and recent advances, Traumatic injuries and management – endodontic treatment for young permanent teeth, Endodontic surgeries, recent developments in technique and devices and wound healing, Endoperio interrelationship and management., Lasers in Endodontics, Multidisciplinary approach to endodontic situations, Radiology and CBCT in endodontic practice, Procedural errors in endodontics and their management, Endodontic failures and retreatment, Resorptions and its management., Microscopes and Microsurgery in endodontics., Single visit endodontics, current concepts and controversies, Regenerative Endodontics

6. ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS:

- **Basic Orthodontics**

Orthodontic History, Concepts of Occlusion and Esthetics, Etiology and Classification of Malocclusion, Dentofacial Anomalies, Diagnostic Procedures and Treatment Planning in Orthodontics, Cephalometrics, Practice Management in Orthodontics

- **Clinical Orthodontics**

Myofunctional Orthodontics, Dentofacial Orthopedics, Cleft lip and palate rehabilitation, Biology of tooth movement, Orthodontic / Orthognathic surgery, Ortho / Perio / Prosth/Endo inter relationship, Basic principles of mechanotherapy includes removable appliances and fixed appliances, Applied preventive aspects in Orthodontics, Interceptive Orthodontics, Evidence Based Orthodontics, Different types of fixed Mechanotherapy, Orthodontic Management of TMJ problems, sleep-apnoea etc, Retention and relapse.

7. ORAL & MAXILLOFACIAL PATHOLOGY AND ORAL MICROBIOLOGY:

Oral and Dental Pathology, Basic histo-techniques and microscopy, Recent Molecular Techniques, Recording of Case History and Clinico-Pathological Discussions, Forensic odontology, Giant cell lesions, Clear cell lesions, Round cell lesions, Spindle cell lesions, Pigmented lesions , Fibro-osseous lesions, Mechanism of formation and expansion of cysts of orofacial region, Mechanism of growth and metastasis of tumors, Lab diagnosis of bacterial infections, Lab diagnosis of viral infections, Lab diagnosis of fungal infections,

Hamartomas, Phakomatoses, Vascular tumors of oro-facial region, Genodermatoses , Tumor markers, Histogenesis of salivary gland tumors, Tumor angiogenesis , Concept of premalignancy , Blue cell lesions, Molecular basics of oral squamous cell carcinoma, Matrix remodelling in pathological condition, Etiopathogenesis of developmental defects of teeth, Viral oncogenesis , Lesions associated with impacted and missing teeth, Syndromes affecting oro-facial region, Hereditary oral defects, Techniques to assess the prognosis of neoplastic lesions, Vesiculo-bullous lesions, Lymphoreticular malignancy, Haemopoietic malignancy, Micronutrients, Oral aspects of metabolic disorders, Hormones and oro-maxillofacial lesions , Matrix metalloproteinase, Current concepts in HIV related oral diseases, Current concepts in OSMF, Epithelial –connective tissue interaction, Stem cell research.

8. PUBLIC HEALTH DENTISTRY:

- **Public Health**

Public Health, Health, Disease, General Epidemiology Environmental Health, Impact of important components, Public Health Education, Public Health Practice and Administration System in India, Ethics and Jurisprudence, Nutrition in Public Health, Behavioral Sciences, Hospital Administration, Health Care Delivery System, Oral Biology and Genetics ,Demography & Family Planning, Health Economics

- **Dental Public Health:**

Dental Public Health, Epidemiology of Oral Diseases and Conditions, Oral Survey Procedures, Delivery of Dental Care: Payment for Dental Care, Evaluation of Quality of Dental Care, Preventive Dentistry, Tobacco Counseling

9. PEDIATRIC AND PREVENTIVE DENTISTRY:

- **Clinical Paedodontics**

Conscious sedation, Deep Sedation & General Anesthesia in Pediatric Dentistry, Gingival & Periodontal Diseases in Children, Pediatric Operative Dentistry, Pediatric Endodontics, Traumatic Injuries in Children, Interceptive Orthodontics, Oral Habits in children, Dental Care of Children with special needs, Oral Manifestations of Systemic Conditions in Children & their

Management, Management of Minor Oral Surgical Procedures in Children, Dental Radiology as Related to Pediatric Dentist, Pediatric Oral Medicine & Clinical Pathology, Congenital Abnormalities in Children, Dental Emergencies in Children & Their Management, Dental Materials Used in Pediatric Dentistry, Case History Records, Setting up of Pedodontic & Preventive Dentistry Clinic

- **Preventive and Community Dentistry as applied to Pediatric Dentistry**

Child Psychology, Behavior Management, Child Abuse & Dental Neglect, Preventive Pedodontics, Cariology, Preventive Dentistry, Dental Health Education & School Dental Health Programmes, Fluorides, Epidemiology, Comprehensive Infant Oral Health Care/Comprehensive cleft care, Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography

10. ORAL MEDICINE AND RADIOLOGY:

- **Oral and Maxillofacial Radiology:**

History of radiology, structure of x – ray tube, production of x – ray, property of x – rays, Biological effects of radiation, Films and recording media, Processing of image in radiology, Design of x –ray department, dark room and use of automatic processing units, Localization by radiographic techniques, Faults of dental radiographs and concept of ideal radiograph, Quality assurance and audit in dental radiology, Extra – oral-imaging techniques, OPG and other radiologic techniques Advanced imaging techniques like **CBCT**, CT Scan, MRI, Ultrasound, Basic Anatomy of sectional imaging with case interpretations of CT / CBCT / MRI, Radio nucleotide techniques, Contrast radiography in salivary gland, TMJ, and other radiolucent pathologies, Radiation protection and ICRP guidelines, Art of radiographic report, writing and descriptors preferred in reports, Radiograph differential diagnosis of radiolucent, radio opaque and mixed lesions, Digital radiology and its various types of advantages

- **Oral Medicine, therapeutics and laboratory investigations**

Methods of clinical diagnosis of oral and systemic diseases as applicable to oral tissues including modern diagnostic techniques, Laboratory investigations including special investigations of oral and oro – facial diseases, Teeth in local and systemic diseases, congenital, and hereditary disorders, Oral

manifestations of systemic diseases, Oro – facial pain, Psychosomatic aspects of oral diseases, Management of medically compromised patients including medical emergencies in the dental chair, Congenital and Hereditary disorders involving tissues of oro facial region, Systemic diseases due to oral foci of infection, Hematological, Dermatological, Metabolic, Nutritional, & Endocrinal conditions with oral manifestations, Neuromuscular diseases affecting oro – facial region, Salivary gland disorders, Tongue in oral and systemic diseases, TMJ dysfunction and diseases, Concept of immunity as related to oro – facial lesions, including AIDS, Cysts, Neoplasms, Odontomes, and fibro – osseous lesions, Oral changes in Osteo – dystrophies and chondro – dystrophies, Pre malignant and malignant lesions of oro facial region, Allergy and other miscellaneous conditions, Therapeutics in oral medicine –clinical pharmacology, Forensic odontology, Computers in oral diagnosis and imaging, Evidence based oral care in treatment planning, Molecular Biology

11. RESEARCH METHODOLOGY.

12. MEDICO LEGAL ASPECTS RELEVANT TO THE DISCIPLINE.

13. CURRENT TRENDS AND RECENT ADVANCEMENTS IN THE FIELD OF DENTISTRY.