

Detailed Syllabus for the post of Assistant Professor in Paedodontics in Kerala Medical Education (Category No.266/2025)

Total Mark - 100

Module I (15 Marks)

Child Psychology and Behavior Management

- Child Psychology
Development & Classification of behavior, personality, intelligence in children, theories of child psychology, stages of psychological child development, fear, anxiety, apprehension & its management.
- Behavior Management: Non- pharmacological & Pharmacological methods.
- Child Abuse & Dental Neglect
- Counseling in Pediatric Dentistry

Module II (10 Marks)

Preventive Pedodontics

- Concepts of Prevention, Chair side preventive measures for dental diseases, high-risk caries including rampant & extensive caries – Recognition, Features & Preventive Management, Pit and Fissures Sealants, Oral Hygiene measures, Correlation of brushing with dental caries and periodontal diseases. Diet & Nutrition as related to dental caries. Diet Counseling, Topical and Systemic Fluorides with latest advancements
- Dental Plaque
Definition, Initiation, Pathogenesis, Biochemistry, and Morphology & Metabolism.
- Gingival & Periodontal diseases in Children:
Normal Gingiva & Periodontium in children.
Gingival & Periodontal diseases – Etiology, Pathogenesis, Prevention & Management
Dental Health Education & School Dental Health Programs
Space Management- Prevention of space loss, Planning and types of space maintainers
Dental Home and Anticipatory Guidance

Module III (10 Marks)

Pediatric Operative Dentistry

- Principles of Operative Dentistry along with modifications of materials/past, current & latest including tooth colored materials.
- Modifications required for cavity preparation in primary and young permanent teeth.
- Various Isolation Techniques
- Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & latest material (gallium)
- Stainless steel crowns, Polycarbonate & Resin Crowns / Veneers , other esthetic crowns, fibre post systems.

Module IV (10 Marks)

Pediatric Endodontics

- Primary Dentition: - Diagnosis of pulpal diseases and their management – Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods), Controversies & recent concepts.
- Young permanent teeth and permanent teeth, Pulp capping, Pulpotomy, Apexogenesis, Apexification, Revascularisation, Concepts, Techniques and Materials used for different procedures.
- Recent advances in Pediatric diagnosis and Endodontics.
Prosthetic considerations in Pediatric Dentistry

Module V (10 Marks)

Traumatic Injuries in Children

- Classifications & Importance.
- Sequelae of trauma to primary teeth
- Management of Traumatized teeth with latest concepts.
- Management of jaw fractures in children.
- Prevention of Dental Traumatic Injuries
- Sports Dentistry

Module VI (15 Marks)

Preventive and Interceptive Orthodontics

- Prenatal and Postnatal development of cranium, face, jaws, teeth and supporting structures. Chronology of dental development and development of occlusion. Dimensional changes in dental arches. Cephalometric evaluation of growth.
- Concepts of occlusion and esthetics: Structure and function of all anatomic components of occlusion, mechanics of articulations, recording of masticatory function, diagnosis of Occlusal dysfunction, relationship of TMJ anatomy and pathology and related neuromuscular physiology.
- A comprehensive review of the local and systemic factors in the causation of malocclusion.
- Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance).
- Biology of tooth movement: A comprehensive review of the principles of teeth movement. Review of contemporary literature. Histopathology of bone and Periodontal ligament, Molecular and ultra cellular consideration in tooth movement.
- Myofunctional appliances: Basic principles, contemporary appliances: Design & Fabrication
- Removable appliances: Basic principles, contemporary appliances: Design & Fabrication
- Case selection & diagnosis in interceptive Orthodontics (Cephalometrics, Image processing, Tracing, Radiation hygiene, Video imaging & advance Cephalometric techniques).
- Space Management: Etiology, Diagnosis of space problems, analysis, Biomechanics, Planned extraction in interceptive orthodontics.

Oral Habits in Children

- Definition, Etiology & Classification
- Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.

- Management of oral habits in children

Module VII (10 Marks)

Cariology

- Caries pattern in primary, young permanent and permanent teeth in children.
- Rampant caries, early childhood caries and extensive caries- Etiology, Pathogenesis, Clinical features, Complications & Management.
- Role of diet and nutrition in Dental Caries
- Dietary modifications & Diet counseling.
- Subjective & objective methods of Caries detection with emphasis on Caries Activity tests, Caries prediction, Caries susceptibility & their clinical Applications
- Caries Diagnostic Aids with recent advances

Module VIII (10 Marks)

Dental care of Children with special health care needs:

Definition, Etiology, Classification, Behavioral, Clinical features & Management of children with:

- Physically handicapped conditions
- Mentally compromising conditions
- Medically compromising conditions including bleeding disorders
- Genetic disorders
- Comprehensive cleft care management with emphasis on counseling, feeding, nasoalveolar bone remodeling, speech rehabilitation.

Module IX (5 Marks)

Applied Basic Sciences

Applied Anatomy of Head and Neck:

- Anatomy of the scalp, temple, face, tongue, neck including salivary glands, TMJ, pharynx, thyroid and parathyroid gland, larynx, trachea, esophagus and the applied aspects
- Cranial and facial bones and its surrounding soft tissues with its applied aspects
- Muscles of head and neck
- Arterial supply, venous drainage and lymphatics of head and neck
- Congenital abnormalities of the head and neck
- Anatomy of the cranial nerves and applied aspects of Autonomous nervous system of head and neck
- Functional anatomy of mastication, deglutition, speech, respiration and circulation

Applied Physiology:

Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood - composition, volume, function, blood groups and hemorrhage, Blood transfusion, circulation

Heart, Pulse, Blood pressure, Normal ECG, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vitamin D in growth and development of teeth, bone and jaws.

Role of Vitamin A, C and B complex in oral mucosal and periodontal health.

General principles, balanced diet, effect of dietary deficiencies and starvation, protein energy, malnutrition, Kwashiorkor, Marasmus.

Fluid and Electrolytic balance in maintaining haemostasis

Diet, digestion, absorption, transportation and utilization

Applied Pathology

Inflammation and chemical mediators, Thrombosis, Embolism, Necrosis, Repair, Degeneration, Shock, Hemorrhage and wound healing.

Applied Microbiology

Microbiology & Immunology as related to Oral Diseases in Children: Basic concepts, immune system in human body, Auto Immune diseases and Immunology of Dental caries.

Genetics

- Cell structure, DNA, RNA, protein synthesis, cell division
- Modes of inheritance
- Chromosomal anomalies of oral tissues & single gene disorders

Module X (5 Marks)

Miscellaneous topics relevant to Pediatric Dentistry

Pediatric Oral Medicine & Clinical Pathology: Recognition & Management of developmental dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.

Congenital Abnormalities in Children

Medical Emergencies in Children and their Management.

Dental health concepts, Public Health measures related to children

Medico legal aspects in Pediatric Dentistry with emphasis on informed consent and Ethics in dental practice

Epidemiology: Concepts, Methods of recording & evaluation of various oral diseases. Various national & global trends of epidemiology of oral diseases.

Comprehensive Infant Oral Health Care.

Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography

Setting up of Pediatric Dentistry Clinic.

Emerging concepts in Pediatric Dentistry of scope of lasers / minimum invasive procedures in Pediatric Dentistry.

Oral manifestations of Systemic Conditions in Children & their Management

Management of Minor Oral Surgical Procedures in Children

Dental Radiology as related to Pediatric Dentistry.

NOTE: It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.