

**DETAILED SYLLABUS FOR THE POST OF ASSISTANT PROFESSOR IN
PERIODONTICS IN (KERALA MEDICAL EDUCATION SERVICE) - DIRECT
RECRUITMENT**

(Cat.No. 351/2023)

MODULE 1 (10 MARKS)

APPLIED BASIC SCIENCES

Applied anatomy:

1. Temporomandibular joint, Maxillae and Mandible
2. Tongue, oropharynx
3. Muscles of mastication / Face
4. Blood Supply and Nerve Supply of Head & Neck and Lymphatics.
5. Spaces of Head & Neck

PHYSIOLOGY:

1. Blood
2. Respiratory system - knowledge of the respiratory diseases which are a cause of periodontal diseases(Periodontal Medicine)
3. Cardiovascular system
 - a. Blood pressure
 - b. Normal ECG
 - c. Shock
4. Endocrinology - hormonal influences on Periodontium
5. Gastrointestinal system
 - a. Salivary secretion - composition, function & regulation
 - b. Hormones - Actions and regulations, role in periodontal disease
6. Nervous system
 - a. Pain pathways
 - b. Taste - Taste buds, primary taste sensation & pathways for sensation
7. Hemostasis

BIOCHEMISTRY:

1. Basics of carbohydrates, lipids, proteins, vitamins, enzymes and minerals
2. Diet and nutrition and periodontium
3. Biochemical tests and their significance
4. Calcium and phosphorus

PATHOLOGY:

1. Cell structure and metabolism
2. Inflammation and repair, necrosis and degeneration
3. Immunity and hypersensitivity
4. Circulatory disturbances - oedema, haemorrhage, shock, thrombosis, embolism, infarction and hypertension
5. Disturbances of nutrition
6. Diabetes mellitus
7. Cellular growth and differentiation, regulation
8. Lab investigations
9. Blood

MICROBIOLOGY:

1. General bacteriology
 - a. Identification of bacteria
 - b. Culture media and methods
 - c. Sterilization and disinfection
2. Immunology and Infection
3. Systemic bacteriology with special emphasis on oral microbiology – staphylococci, genus actinomyces and other filamentous bacteria and Actinobacillus actinomycetemcomitans
4. Virology
 - a. General properties of viruses
 - b. Herpes, Hepatitis, virus, HIV virus
5. Mycology
 - a. Candidiasis
6. Applied microbiology
7. Diagnostic microbiology and immunology, hospital infections and management

MODULE 2 (10 MARKS)**PHARMACOLOGY:**

1. General pharmacology
 - a. Definitions – Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics
 - b. Adverse drug reactions and drug interactions
2. Detailed pharmacology of
 - a. Analgesics – opioid and nonopioid
 - b. Local anesthetics
 - c. Haematinics and coagulants, Anticoagulants
 - d. Vit D and Calcium preparations
 - e. Antidiabetics drugs
 - f. Steroids
 - g. Antibiotics
 - h. Antihypertensive
 - i. Immunosuppressive drugs and their effects on oral tissues
 - j. Antiepileptic drugs
3. Brief pharmacology, dental implication and adverse effects of
 - General anesthetics
 - Antipsychotics
 - Antidepressants
 - Anxiolytic drugs
 - Sedatives
 - Antiepileptics
 - Antihypertensives
 - Antianginal drugs
 - Diuretics
 - Hormones
 - Pre-anesthetic medications
 - Oral contraceptives

4. Drugs used in Bronchial asthma, cough
5. Drug therapy of
 - a. Emergencies
 - b. Seizures
 - c. Anaphylaxis
 - d. Bleeding
 - e. Shock
 - f. Diabetic ketoacidosis
 - g. Acute Addisonian crisis
6. Dental Pharmacology
 - a. Antiseptics
 - b. Astringents. Sialogogues
 - d. Disclosing agents
 - e. Antiplatelet agents
7. Fluoride pharmacology

BIOSTATISTICS:

1. Introduction, definition and branches of biostatistics
2. Collection of data, sampling, types, bias and errors
3. Compiling data-graphs and charts
4. Measures of central tendency (mean, median and mode), standard deviation and variability
5. Tests of significance (chi square test, t-test and z-test)
6. Null hypothesis

RESEARCH METHODOLOGY

1. Study designs- descriptive, Cohort, Case control, Experimental
2. Systematic reviews and Meta analysis
3. Clinical significance and statistical significance

INFECTION CONTROL

- 3.1. Principles
- 3.2. Practices

Essentials of dental radiology including radiation hazards

ETHICS IN DENTISTRY IN GENERAL AND PERIODONTOLOGY IN PARTICULAR

1. Doctor patient relationship
2. Patient's rights- autonomy
3. Informed consent
4. Handling of patient's health information - confidentiality
5. Patient centric treatment planning
6. Ethics in health research involving humans and animals

MODULE 3 (5 MARKS)

1. Development of the Periodontium
2. Micro and Macro structural anatomy and biology of Gingiva and the tooth supporting structures.
3. Age changes in the periodontal tissues.
4. Defence Mechanisms of the Gingiva

MODULE 4 (15 MARKS)

Etiopathogenesis

1. Classification of periodontal diseases and conditions
2. Epidemiology of gingival and periodontal diseases
3. Periodontal microbiology
4. Basic concepts of inflammation and immunity
5. Host microbial interaction in periodontal diseases
6. Pathogenesis of plaque associated periodontal diseases
7. Dental calculus and other predisposing factors
8. Genetic factors associated with periodontal diseases
9. Influence of systemic diseases and disorders on the periodontium
10. Role of environmental factors in the etiology of periodontal disease
11. Stress and periodontal diseases
12. Occlusion and periodontal diseases
13. Smoking and tobacco in the etiology of periodontal diseases
14. AIDS and periodontium
15. Impact of Periodontal infection on systemic health
16. Dentinal hypersensitivity and its management

MODULE 5 (10 MARKS)

GINGIVAL DISEASES

1. Gingival inflammation
2. Clinical features of gingivitis
3. Gingival enlargement
4. Acute gingival infections
5. Desquamative gingivitis and oral mucous membrane diseases
6. Gingival diseases in the childhood

PERIODONTAL DISEASES

1. Periodontal pocket
2. Bone loss and patterns of bone destruction
3. Periodontal response to external forces
4. Abscesses of Periodontium
5. Masticatory system disorders
6. Periodontitis- Staging and Grading
7. Chronic periodontitis
8. Aggressive periodontitis/Molar Incisor pattern
9. Necrotising periodontal diseases

MODULE 6 (10 MARKS)

MANAGEMENT OF PATIENTS WITH SPECIAL NEEDS

1. Conscious sedation
2. Periodontal treatment of medically compromised patients
3. Sleep disordered breathing
4. Periodontal Therapy in Female patient
5. Periodontal treatment of older adults
6. Treatment of Aggressive and atypical forms of periodontitis

DIAGNOSIS AND TREATMENT OF PERIODONTAL EMERGENCIES

1. Treatment of Acute Gingival Infections
2. Treatment of Periodontal Abscess

3. Endodontic- Periodontic Lesions: Pathogenesis, Diagnosis and Treatment Considerations.

MODULE 7 (10 MARKS)

TREATMENT OF PERIODONTAL DISEASES

1. Clinical diagnosis
 2. Radiographic and other aids in the diagnosis of periodontal diseases
 3. Advanced diagnostic techniques
 4. Risk assessment
 5. Determination of prognosis
 6. Treatment plan
 7. Rationale for periodontal treatment
 8. Halitosis and its treatment
 9. Bruxism and its treatment
- Periodontal instrumentation
10. Periodontal Instruments
 11. Principles of periodontal instrumentation
 12. Sonic and ultrasonic Instrumentation and Irrigation

MODULE 8 (15 MARKS)

Periodontal therapy

1. Preparation of tooth surface
2. Plaque control- behavioural modification
3. Non surgical periodontal therapy
4. Adjunctive therapy including locally delivered controlled release antimicrobial and other pharmaceutical agents and laser therapy
5. Systemic anti infective therapy for periodontal disease
6. Host Modulation
7. Periodontal management of HIV infected patients
8. Occlusal evaluation and therapy in the management of periodontal diseases
9. Role of orthodontics as an adjunct to periodontal therapy
10. Periodontal splints

Periodontal surgical phase -

11. General principles of periodontal surgery
12. Surgical anatomy of periodontium and related structures
13. Treatment of gingival enlargements
14. Periodontal flap
15. Resective osseous surgery
16. Periodontal Regeneration and Reconstructive Surgery.
17. Furcation Involvement and its management
18. Periodontic plastic and esthetic surgery
19. Recent advances in surgical techniques- piezo surgery, micro surgery, laser surgery
20. Leucocyte -and platelet Rich fibrin: Biologic properties and Applications.

Future directions and controversial questions in periodontal therapy

1. Future directions for infection control
2. Tissue engineering in regenerative therapy

3. Personalised periodontics
4. Future directions in periodontal diagnosis

MODULE 9 (5 MARKS)

PERIODONTAL RESTORATIVE INTERRELATIONSHIPS

1. Preparation of Periodontium for Restorative Dentistry
2. Restorative Interrelationships

Periodontal maintenance phase

1. Supportive periodontal treatment
2. Results of periodontal treatment

MODULE 10 (10 MARKS)

ORAL IMPLANTOLOGY

1. Introduction and history
2. **Clinical** assessment of the patient requiring implant therapy
3. Timing of implant placement
4. Biological, clinical and surgical aspects of dental implants
5. Diagnostic imaging and treatment planning for dental implants
6. Dental implant considerations in a patient with periodontal disease
7. Advanced Implant surgery
8. Prosthetic rehabilitation of dental implants
9. Implant site development- extraction socket preservation, soft tissue and hard tissue ridge augmentation
10. Maxillary Sinus floor elevation
11. Diagnosis and treatment of Peri implant complications
12. Special emphasis on plaque control measures in implant patients
13. Maintenance care of dental implants
14. Soft tissue aesthetics around implants

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.

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