

**DETAILED SYLLABUS FOR THE POST OF ASSISTANT PROFESSOR IN
ORAL PATHOLOGY AND MICROBIOLOGY IN (KERALA MEDICAL
EDUCATION SERVICE) - DIRECT RECRUITMENT**

(Category Nos.:292/2023)

MODULES

Module 1. (5 Marks)

Developmental defects of the oral and maxillofacial region

1. Abnormalities of teeth
Developmental alterations of teeth
Environmental alterations of teeth
2. Orofacial clefts
3. Developmental disturbances of tongue
4. Developmental disturbances of oral mucosa
5. Developmental disturbances of salivary glands
6. Developmental cysts

Module 2. (8 Marks)

Odontogenic cyst and tumours

1. Odontogenic cysts
2. Mechanism of formation and expansion of cysts of orofacial region
3. Tumours arising from odontogenic epithelium
4. Tumours arising from odontogenic epithelium with odontogenic ectomesenchyme
5. Tumours arising from odontogenic ectomesenchyme with or without included odontogenic epithelium

Module 3. (5 Marks)

Dermatologic Diseases

1. Ectodermal dysplasia
2. White sponge nevus
3. Hereditary benign intraepithelial dyskeratosis
4. Dyskeratosis congenita
5. Oral lichen planus
6. Lichenoid reaction
7. Pemphigus
8. Pemphigoid
9. Epidermolysis bullosa
10. Erythema multiforme
11. Systemic lupus erythematosus

Module 4. (7 Marks)

1. Diseases of bone and joints
2. Haematological diseases
3. Diseases of nerves and muscles
4. Oro-facial pain
5. Oral aspects of metabolic disorders
6. Hormones and oro-maxillofacial lesions
7. Physical & chemical injuries
8. Oral biopsies

9. Healing of oral wounds
10. Regressive alterations of teeth
11. Non-neoplastic pathology of salivary glands

Module 5. (10 Marks)

1. Benign neoplasms of epithelial tissue origin
2. Oral potentially malignant disorders
3. Benign neoplasms of salivary glands
3. Benign tumours of connective tissue origin
4. Benign tumours of muscle tissue origin
5. Benign tumours of nerve tissue origin
6. Oral hamartomas
7. Giant cell lesions
8. Syndromes affecting oro-facial region

Module 6. (15 Marks)

Oral microbiology and immunology

1. Normal oral microbial flora
2. Defense mechanism of the oral cavity
3. Bacterial infections
4. Viral diseases
5. Fungal and protozoal diseases
3. Microbiology and immunology of Dental Caries and Periodontal diseases
4. Dental Caries - Introduction, Epidemiology, Microbiology, cariogenic bacteria including properties, acid production in plaque, development of lesion, response of dentin-pulp unit, histopathology, Root caries and sequele
5. Infections of the pulp and periodontal tissues
6. Spread of oral infection

Module 7. (20 Marks)

Oncology

1. Carcinogenesis
2. The molecular biology of cancer
3. Tumour angiogenesis
4. Mechanism of growth and metastasis of tumours
5. Tumour markers
6. Aetiology, epidemiology and prevention of cancer
7. Malignant tumours of epithelial tissue origin
8. Malignant tumours of connective tissue origin
9. Malignant tumours of muscle tissue origin
10. Malignant tumours of nerve tissue origin
11. Malignant epithelial & non-epithelial tumours of salivary glands
12. Malignant odontogenic carcinomas & sarcomas
13. Non-odontogenic malignancies of the jaw bones
14. Lymphoreticular malignancy
15. Haemopoietic malignancy
16. Metastatic tumours of the oral cavity
17. Recent advances in oral oncology
18. Techniques to assess the prognosis of neoplastic lesions

Module 8 (22 Marks)

Laboratory techniques and Diagnosis

- 1.Principles and practice of microscopy and photo microscopy
- 2.Light microscopy and various other types including electron microscopy
- 3.Tissue processing
- 4.Fixation and fixatives
- 5.The theory of staining
- 6.The haematoxylin and eosin
7. Connective tissues and stains
8. Proteins and nucleic acids
9. Amyloid, Carbohydrates, Lipids Pigments and minerals
10. Bone
11. Cytoplasmic granules, organelles and special tissues
12. Enzyme histochemistry and Immunohistochemistry- Principles, techniques and applications
13. Principles, techniques and applications of immunofluorescence
14. Diagnostic cytopathology
15. Routine hematological tests and clinical significance of the same
16. Ground sections and decalcified sections
17. Preparation of frozen sections
18. Lab diagnosis of bacterial , viral and fungal infections
19. Museum set up
- 20Quality control

Module 9. (4 Marks)

Forensic odontology

- 1.Legal procedures like inquest, medico legal evidences, post mortem examination of violence around the head and neck region, identification of deceased individual using teeth and other oral tissues.
2. Bite marks, Rugae patterns and lip prints.
- 3.Saliva and its use in forensic identification
- 4.Dental age estimation techniques

Module 10. (4 Marks)

Recent Molecular Techniques:

Basic principles, techniques and applications of -
 PCR, BLOTS, Hybridization, Recombinant DNA technology,
 Micro array, DNA sequencing.

Cell culture and cloning

Stem cell research

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