PERIODONTOLOGY

CLINICAL AND THERAPEUTIC PERIODONTOLOGY AND ORAL IMPLANTOLOGY

1 **Classification of periodontal diseases & conditions affectingperiodontium.**

- **a)** Gingivaldiseases
- **b)** Periodontitis
- **c)** Necrotizing periodontaldiseases
- **d)** Abscesses ofperiodontium
- **e)** Periodontitis associated with endodonticlesions
- **f)** Developmental or acquired deformities &conditions

2 **Fundamentals in the methods of periodontal diseaseepidemiology.**

- **a)** Need forepidemiology
- **b)** Epidemiologic studydesigns
- **c)** Causes/ etiology
- **d)** Diagnosis

3 **Defence mechanisms ofgingiva.**

- **a)** Sulcularfluid
- **b)** Leukocytes in the dentogingivalarea
- **c)** Saliva

4 **Periodontalmicrobiology.**

- **a)** Oral cavity from a microbe'sperspective
- **b)** Bacteria and their biofilm mode ofliving
- **c)** Characteristics of biofilm bacteria (life in “slimecity”)
- **d)** Bacterial transmission andtranslocation
- **e)** Nonbacterial inhabitants of the oralcavity
- **f)** Microbiologic specificity of periodontaldiseases
- **g)** Transition from health todisease
- **h)** Virulence factors ofperiodontopathogens
- **i)** Future advances in periodontal microbiology

5 **Basic concepts of inflammation andimmunity.**

- **a)** Inflammation
- **b)** Acute inflammation is self-limited
- **c)** Unresolved chronic inflammation in periodontaldiseases
- **d)** Systemiclink
- **e)** Therapeutic actions of resolutionmediators

6 **Microbial interactions with the host in periodontaldiseases.**

- **a)** Microbiologic aspects of the microbial –hostinteraction
- **b)** Immunologic aspects of the microbial interaction with thehost
- **c)** Microbiology and immunology in gingivalhealth
- **d)** Microbiology and immunology in periodontaldisease

7 **Pathogenesis of plaque associated periodontaldiseases.**

- **a)** Histopathology of periodontaldisease
- **b)** Inflammatory responses in theperiodontium
- **c)** Linking pathogenesis to clinical signs ofdisease
- **d)** Resolution of inflammation
- **e)** Immune responses in periodontalpathogenesis
- **f)** Concept of hostsusceptibility

8 **Dental calculus.**

- a) Supragingival&subgingivalcalculus
- b) Clinical appearance, prevalence anddistribution
- c) Calculus formation andstructure
- d) Attachment to tooth surfaces andimplants
- e) Calculuscomposition
- f) Clinicalimplications
- g) Materia alba, food debris, dentalstains
- h) Role of iatrogenic and other localfactors

9 **Genetic factors associated with periodontaldisease.**

- a) Introduction anddefinitions
- b) Evidence for the role of genetics inperiodontitis
- c) Heritability of aggressive periodontitis (early onsetperiodontitis)
- d) Heritability of chronic periodontitis (adultperiodontitis)
- e) The twinmodel
- f) Human genes andpolymorphisms
- g) Genetics in relation to disease ingeneral
- h) A major disease gene associated withperiodontitis
- i) Modifying disease genes in relation toperiodontitis
- j) Cytokine genepolymorphisms
- k) IL-1 genepolymorphisms
- l) TNF-a genepolymorphisms
- m) IL-10 genepolymorphisms
- n) FCYR genepolymorphisms

10 **Influence of systemic conditions on theperiodontium.**

- a) Endocrine disorders and hormonalchanges

b) Hematologic disorders and immunedeficiencies

c) Cardiovasculardiseases

d) Geneticdisorders

e) Stress and psychosomaticdisorders

f) Nutritionalinfluences

g) Medications

h) Other systemicconditions

11 **Role of environmental factors in the etiology of periodontaldisease.**

12 **Stress and periodontal diseases.**

13 **Occlusion and periodontal disease.**

a) Adaptive capacity of the periodontium to occlusalforces

b) Trauma fromocclusion

c) Stages of tissue response to increased occlusalforces

d) Effects of insufficient occlusalforce

e) Reversibility of traumaticlesions

f) Effects of excessive occlusal forces on dentalpulp

g) Relationship between plaque induced periodontal diseases and trauma from occlusion

h) Pathologic toothmigration

14 **Smoking and tobacco in the etiology of periodontaldiseases.**

a) The smoking epidemic

b) Effects of smoking on the prevalence and severity of periodontaldiseases

c) Effects of smoking on the etiology and pathogenesis of periodontaldisease

d) Effects of smoking on the response to periodontaltherapy

e) Effects of smoking cessation on periodontal treatmentoutcomes

15 **AIDS andperiodontium.**

a) Epidemiology &demographics

b) Classification &staging

c) Pathogenesis

d) Oral and periodontal manifestations of human immunodeficiencyvirus

e) Infection

f) Dental treatmentcomplications

g) Gingival and periodontaldiseases

h) Periodontal treatmentprotocol

16 **Periodontalmedicine.**

a) Pathobiology of periodontitis
b) Focal infection theoryrevisited
c) Evidence –based clinicalpractice
d) Subgingival environment as a reservoir ofbacteria
e) Periodontal disease andmortality
f) Periodontal disease and coronary heart disease/atherosclerosis
g) Periodontal disease andstroke
h) Periodontal disease and diabetesmellitus
i) Periodontal disease and pregnancyoutcome
j) Periodontal disease and chronic obstructive pulmonarydisease
k) Periodontal disease and acute respiratoryinfection
l) Periodontal medicine and clinicalpractice

17 **Gingivalinflammation.**

a) Stage I gingival inflammation: the initiallesion
b) Stage II gingival inflammation: the earlylesion
c) Stage III gingival inflammation: the establishedlesion
d) Stage IV gingival inflammation: the advancedlesion
e) Clinical features ofgingivitis
f) Course andduration

18 **Gingivalenlargement.**

a) Inflammatoryenlargement.
b) Drug-induced gingivalenlargement
c) Idiopathic gingivalenlargement
d) Enlargements associated with systemicdiseases
e) Neoplasticenlargements
f) Falseenlargements

19 **Acute gingivalinfections.**

a) Necrotizing ulcerativegingivitis
b) Primary herpeticgingivostomatitis
c) Pericoronitis

20 **Desquamative gingivitis and oral mucous membranediseases.**

a) Chronic desquamativegingivitis
b) Diagnosis of desquamative gingivitis: a systematicapproach
c) Diseases that can manifest as desquamativegingivitis
d) Drug-relatederuptions
e) Miscellaneous conditions that mimic desquamativegingivitis

21 **Gingival diseases in thechildhood.**

a) Periodontium of the primarydentition
b) Periodontal changes associated with normaldevelopment
c) Gingival diseases ofchildhood
d) Periodontal diseases ofchildhood
e) Gingival manifestation of systemic disease inchildren
f) Oral mucosa in childhooddiseases
g) Therapeutic considerations for pediatricpatients

22 **Periodontalpocket.**

a) Classification
b) Clinicalfeatures
c) Pathogenesis
d) Histopathology
e) Periodontal diseaseactivity
f) Site specificity
g) Pulp changes associated with periodontalpockets
h) Relationship of attachment loss and bone loss to pocketdepth
i) Area between base of pocket and alveolarbone
j) Relationship of pocket tobone
k) Periodontalabscess
l) Lateral periodontalcyst

23 **Bone loss and patterns of bonedestruction.**

a) Bone destruction caused by the extension of gingivalinflammation
b) Bone destruction caused by trauma fromocclusion
c) Bone destruction caused by systemicdisorders
d) Factors determining bone morphology in periodontaldisease
e) Bone destruction patterns in periodontaldisease

24 **Masticatory systemdisorders.**

a) Temporomandibularjoint
b) Muscles and nerves of the masticatorysystem
c) Centricrelation
d) Biomechanics of the masticatorysystem
e) Dysfunction anddeterioration
f) Orofacialpain
g) Comprehensiveevaluation
h) Diagnostic decisionmaking

25 **Chronicperiodontitis.**

a) Clinicalfeatures
b) Risk factors fordisease
c) Pathogenesis

26 **Aggressiveperiodontitis.**

a) Overview
b) Historicalbackground
c) Classification and clinicalcharacteristics
d) Epidemiology
e) Pathobiology and riskfactors
f) Therapeutic considerations in aggressive periodontitispatients

27 **Necrotising ulcerativeperiodontitis.**

a) Clinicalfeatures
b) Microscopicfindings
c) Patients with HIV/AIDS
d) Etiology of necrotizing ulceriveperiodontitis
e) Malnutrition

28 **Clinicaldiagnosis.**

a) Overall appraisal of thepatient
b) Health history, dental history, photographicdocumentation
c) Clinicalexamination
d) Tactile periodontalexamination
e) Periodontalcharting
f) Examination of the teeth andimplants
g) Radiographicexamination
h) Laboratory aids to clinical diagnosis

i) Periodontaldiagnosis

j) Assessment of biofilm control and patienteducation

29 **Radiographic and other aids in the diagnosis of periodontaldiseases.**

a) Normal interdentalbone

b) Radiographictechniques

c) Bone destruction in periodontal disease

d) Radiographic appearance of periodontaldisease

e) Digital intraoralradiography

f) Advanced diagnostictechniques

30 **Interdisciplinaryapproaches.**

a) **Orthodonticconsiderations**

- Benefits of orthodontictherapy
- Pre-orthodontic osseoussurgery
- Orthodontic treatment of osseousdefects
- Orthodontic treatment of gingivaldiscrepancies
- Implant interactions inorthodontics

b) **Endodonticconsiderations**

- Factors initiating pulpal and apicaldiseases
- Classification of pulpal and apicaldiseases
- Biologic effects of pulpal infection on periodontaltissues
- Biologic effects of periodontal infection on the dentalpulp
- Effects of endodontic pathosis on development of retrogradeperi-implantitis
- Interactions between extra-radicular infection and theperiodontium
- Differential diagnosis of pulpal and periodontalinfection

31 **Riskassessment.**

a. Definitions

b. Risk factors for periodontaldisease

c. Risk determinants/background characteristics for periodontaldisease

d. Risk indicators for periodontaldiseases

e. Risk markers/predictors for periodontaldisease

f. Clinical risk assessment for periodontaldisease

32 **Determination ofprognosis.**

a. Definitions
b. Types ofprognosis
c. Factors in determination ofprognosis
d. Prognosis of specific periodontaldiseases
e. Determination and reassessment ofprognosis
f. Relationship between diagnosis &prognosis

33 **Treatmentplan.**

a. Overall treatmentplan
b. Sequence oftherapy
c. Explaining the treatment plan to thepatient

34 **Rationale for periodontaltreatment.**

a. Factors that affecthealing
b. Healing after periodontaltherapy
c. Periodontalreconstruction

35 **Levels of clinical significance.**

a. Tangible versus intangiblebenefits
b. Size of treatmenteffect
c. Defining four levels of clinicalsignificance

36 **Generalprinciplesofanti-infectivetherapywithspecialemphasisoninfectioncontrol in periodontalpractice.**

a. Definitions
b. Systemic administration ofantibiotics
c. Serial and combination antibiotictherapy
d. Local deliveryagents
e. Local delivery of antimicrobial agents &peri-implantmucositis/implantitis

37 **Oralmalodor.**

a. Semantics and classification
b. Epidemiology
c. Etiology
d. Fundamentals of malodor detection
e. Diagnosis ofmalodor
f. Treatment of oralmalodor

38 **Bruxism and itstreatment**

39 **Periodontalinstrumentation.**

a. Classification of periodontalinstruments
b. Principles of periodontalinstrumentation
c. Principles of scaling & rootplaning
d. Sharpening of periodontalinstruments.

40 **Plaquecontrol.**

a. Thetoothbrush
b. Poweredtoothbrushes
c. Dentifrices
c) Toothbrushingmethods
d) Interdental cleaningaids
e) Gingival massage
f) Oral irrigationdevices
g) Cariescontrol
h) Chemical plaque biofilm control with oralrinses
i) Disclosingagents
j) Frequency of plaque biofilm removal
k) Patient motivation andeducation

41 **Periodontal management of HIV infectedpatients.**

a. Periodontal treatmentprotocol
b. Oralcandidiasis
d) Oral hairyleukoplakia
e) Kaposi'ssarcoma
f) Bacillaryangiomatosis
g) Non-specific oral ulcerations and recurrentaphthae
h) Periodontal disease in HIV positiveindividual

42 **Occlusal evaluation and therapy in the management of periodontaldisease.**

a) Terminology
b) Occlusal function anddysfunction
c) Biologic basis of occlusalfunction
d) Pathogenesis
e) Parafunction
f) Clinical evaluation procedures
g) Interpretation & treatmentplanning
h) Occlusaltherapy

43 **Role of orthodontics as an adjunct to periodontaltherapy.**

a) Benefits of orthodontictherapy
b) Pre-orthodontic osseoussurgery
c) Orthodontic treatment of osseousdefects
d) Orthodontic treatment of gingivaldiscrepancies
e) Implant interactions inorthodontics

44 **Special emphasis on precautions and treatment for medically compromised patients.**

45 **Periodontalsplints.**

46 **Dentinalhypersensitivity.**

47 **Periodontal surgicalphase.**

a) General principles of periodontalsurgery
b) Outpatient surgery
c) Hospital periodontalsurgery
d) Surgicalinstruments

48 **Surgical anatomy of periodontium and relatedstructures.**

a) Mandible
b) Maxilla
c) Exostoses
d) Muscles
e) Anatomic spaces

49 **Gingivalcurettage.**

a) Rationale
b) Indications
c) Procedure
d) Healing after scaling andcurettage
e) Clinical appearance after scaling and curettage

50 **Gingivectomytechnique.**

a) Indications &contraindications
b) Sugicalgingivectomy
c) Healing after surgicalgingivectomy
d) Gingivectomy by electrosurgery
e) Hearing after gingivectomy by electrosurgery
f) Laser gingivectomy
g) Gingivecomy by chemosurgery

51 **Treatment of gingivalenlargements.**

a) Treatment of chronic inflammatoryenlargement

b) Treatment of periodontal and gingivalabcesses

c) Treatment of drug associated gingivalenlargement

d) Treatment of leukemic gingivalenlargement

e) Treatment of gingival enlargement inpregnancy

f) Treatment of gingival enlargement inpuberty

g) Recurrence of gingival nlargement

52 **Periodontalflap.**

a) Classification offlaps

b) Design of theflap

c) Incisions

d) Elevation of theflap

e) Suturingtechniques

f) Healing after flapsurgery

53 **Flap technique for pockettherapy.**

a) Modified WidmanFlap

b) Undisplacedflap

c) Apically displacedflap

d) Flaps for reconstructivesurgeries

e) Distal molarsurgeries

54 **Osseous surgery (Resective andRegenerative).**

a) Resective

- Selection of treatmenttechnique
- Rationale
- Normal alveolar bonemorphology
- Terminology
- Factors in selection of resective osseoussurgery
- Examination and treatmentplanning
- Methods of resective osseoussurgery
- Osseous resectiontechnique
- Flap placement andclosure
- Postoperativemaintenance
- Specific osseous reshapingsituations

b) Regenerative

- Assessment of new attachment & periodontalreconstruction
- Reconstructive surgicaltechniques

- Factors that influence therapeuticsuccess
- Future directions for periodontalregeneration

55 **Furcation: Involvement & treatment.**

a) Etiologicfactors

b) Diagnosis and classification of furcationdefects

c) Local anatomicfactors

d) Anatomy of the bonylesions

e) Indices of furcationinvolvement

f) Treatment

g) Nonsurgicaltherapy

f) Surgicaltherapy

g) Prognosis

56 **Periodontic plastic and estheticsurgery.**

a) Terminology

b) Objectives

c) Cause of marginal tissuerecession

d) Factors that affect surgicaloutcome

e) Techniques to increase attachedgingiva

f) Techniques to deepen thevestibule

g) Techniques to remove thefrenum

h) Techniques to improveaesthetics

i) Tissue engineering

j) Criteria for selection oftechniques

57 **Host modulation.**

a) Systemically administeredagents

b) Locally administeredagents

c) Host modulation & comprehensive periodontal management

d) Sub-antimicrobial doseDoxycycline

e) Emerging host modulatorytherapies

f) Host modulation factors in systemicdisorders

58 **The periodontic- endodonticcontinuum.**

a) Rationale fortherapy

b) Sequence oftreatment

c) Control of activedisease

d) Preprostheticsurgery

e) Biologicconsiderations

f) Esthetic tissue management

g) Occlusal considerations in restorativetherapy

h) Special restorativeconsiderations

59 **Periodontalmicrosurgery.**

a) Philosophy of periodontalmicrosurgery
b) Advantages of microsurgery
c) Magnification systems
d) Microsurgicalsutures
e) Esthetic periodontalmicrosurgery
f) Microsurgicalknots

60 **Lasers in periodontal and peri-implanttherapy.**

a) Laser physics and biologicinteractions
b) Laser applications inperiodontics
c) Lasers in the management of periodontitis
d) Lasers in the management ofperi-implantitis
e) Complications and risks of lasertherapy

61 **Leukocyte- and platelet-richfibrin.**

a) Introduction
b) General characteristics of l-PRFmembranes
c) Extraoral applications ofl-PRF
d) L-PRF in the treatment of periodontal bonydefects
e) L-PRF for ridgepreservation
f) L-PRF and sinus floorelevation
g) L-PRF and implantsurgery
h) L-PRF for periodontal mucogingivalsurgery
i) L-PRF and medication-related osteonecrosis of thejawbone
j) Initial observations on thePRF-block

62 **Periodontal maintenancephase.**

a) Supportive periodontaltreatment

- Rationale for supportive periodontaltreatment
- Maintenanceprogram
- Classification of post treatment patients and riskassessment
- Referral of patients to theperiodontist
- Tests for diseaseactivity
- Maintenance for dental implantpatient

a) **Results of periodontaltreatment**

- Prevention and treatment of gingivitis
- Prevention and treatment of loss ofattachment
- Tooth mortality

63 **Future directions and controversial questions in periodontaltherapy.**

a) Future directions for infectioncontrol
b) Research directions in regenerativetherapy
c) Future directions in anti-inflammatorytherapy
d) Future directions in measurement of periodontaldiseases

64 **Oralimplantology.**

a) Introduction and historicalreview
b) Biological, clinical and surgical aspects of dentalimplants
c) Biomaterials
d) Peri-implant anatomy, biology, andfunction
e) Implant geometry(macrodesign)
f) Implant surface characteristics(microdesign)
g) Hard tissueinterface
h) Soft tissueinterface
i) Clinical comparison of teeth andimplants
j) Clinical evaluation of the implantpatient
k) Case types andindications
l) Pretreatmentevaluation
m) Risk factors andcontraindications
n) Post treatmentevaluation
o) Diagnosis and treatmentplanning
p) Standardprojections
q) Cross-sectionalimaging
r) Interactive “simulation” softwareprograms
s) Patientevaluation
t) Clinical selection of diagnosticimaging

65 **Implantsurgery.**

a) **Basic implant surgicalprocedures**

- General principles of implantsurgery
- Two-stage “submerged” implantplacement
- One-stage “non-submerged” implantplacement

b) **Localized bone augmentation and implant sitedevelopment**

- Guided boneregeneration
- Localized ridge augmentation
- Alveolar ridge preservation/management ofextractions

c) **Advanced implant surgicalprocedures**

- Maxillary sinus elevation and boneaugmentation
- Supracrestal/vertical boneaugmentation
- Growth factors in boneaugmentation

d) **Esthetic management of difficult cases (minimally invasiveapproach)**

- Surgical strategy for predictableaesthetics
- Immediate implant placement for predictability andaesthetics
- Surgical management of difficult cases (minimally invasiveapproach)

e) **Dental implantmicrosurgery**

f) **Piezoelectric bonesurgery**

- Clinical characteristics of ultrasoniccutting
- Clinical applications & advanced clinicalapplications
- Digitally assisted implantsurgery

66 **Prosthetic aspects of dentalimplants.**

a) Impression makingtechniques
b) Implantconsiderations
c) Abutment/prosthesis considerations for singleunits
d) Management of partially edentulous implant treatment in the aestheticzone
e) Fully edentulous: prostheticconsiderations

67 **Implant-related complications andfailures.**

- Definitions of implant survival and success
- Types and prevalence of implantcomplications
- Types of dentalimplants
- Surgicalcomplications
- Biologiccomplications
- Complications related to augmentationprocedures
- Complications related to placement and loadingprotocols

- Prosthetic or mechanicalcomplications
- Aesthetic and phoneticcomplications

68 **Diagnosis and treatment of peri-implantcomplications.**

- Incidence
- Etiology
- Technical implantfailures
- Diagnosis of peri-implant tissuebreakdown
- Removal of failedimplants
- Initial phase of peri-implantitistreatment
- Surgical techniques for treatment ofperi-implantitis
- Maintenance
- Special emphasis on plaque control measures in implantpatients
- Maintenancephase.

69 **Management of medical emergencies in periodontalpractice.**

70 **Evidence based decision making in clinicalpractice.**

Scheme of Examination

A) Theory

Part – I	Basic sciences paper	100 Marks
Part – II	Paper –I Paper-II, aper-III	300 Marks (100 Marks for each paper)

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of ***MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I , Paper-II and Paper III shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Distribution of topics for each paper will be as follows:***

Part- I: Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.

Part-II

Paper I: Normal Periodontal structure, Etiology & Pathogenesis of Periodontal diseases, epidemiology as related to Periodontics

Part-II Paper II: Periodontal diagnosis, therapy & Oral Implantology Paper III: Essays (descriptive and analyzing type questions)

*The topics assigned to the different papers are generally evaluated under those sections. However, a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.

B) Practical / Clinical Examination: 200 Marks

The clinical examination shall be of two days duration

1st day

Case Discussion

- Long Case- One
- Short case –One
- Periodontal surgery – Periodontal Surgery on a previously prepared case after getting approval from the Examiners

2nd day

Post-surgical review and discussion of the case treated on the 1st day Presentation of dissertation & discussion

All the examiners shall participate in all the aspects of clinical examinations / Viva Voce Distribution of Marks for Clinical examination (recommended)

a) Long Case discussion	75 marks	
b) I short case	25 marks	
c) Periodontal surgery	1. Anesthesia	10
	2. Incision	20
	3.Post Surgery Evaluation	25
	4. Sutures 10	
	5. Pick up (if any)	10
Post – operative review		25
Total	**200**	

C. Viva Voce: 100 Marks

i**. Viva-Voce examination: 80 marks**

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach,

expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic will be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.

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