1. ORTHODONTICS & DENTAL ORTHOPAEDICS – IV BDS

1. Introduction, Definition, Historical Background, Orthodontics And Need For Orthodontics Care

2. Growth And Development: In General
   a. Definition
   b. Growth spurts and Differential growth
   c. Factors influencing growth and Development
   d. Methods of measuring growth
   e. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial)
   f. Genetic and epigenetic factors in growth
   g. Cephalocaudal gradient in growth.

3. Morphologic Development Of Craniofacial Structures
   a. Methods of bone growth
   b. Prenatal growth of craniofacial structures
   c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion.

4. Functional Development of Dental Arches And Occlusion
   b. Forces of occlusion
   c. Wolfe's law of transformation of bone
   d. Trajectories of forces

5. Clinical Application Of Growth And Development

6. Malocclusion - In General
   a. Concept of normal occlusion
   b. Definition of malocclusion
   c. Description of different types of dental, skeletal and functional malocclusion.

7. Classification of Malocclusion
   Principle, description, advantages and disadvantages of classification of malocclusion by Angle's, Simon's, Lischer's and Ackerman and Proffitt's.

8. Normal And Abnormal Function Of Stomatognathic System
9. Etiology Of Malocclusion
   a. Definition, importance, classification, local and general etiological factors.
   b. Etiology of following different types of malocclusion:
      1) Midline diastema
      2) Spacing
      3) Crowding
      4) Cross Bite: Anterior/Posterior
      5) Class III Malocclusion
      6) Class II Malocclusion
      7) Deep Bite
      8) Open bite

10. Diagnosis And Diagnostic Aids
    a. Definition, Importance and classification of diagnostic aids
    b. Importance of case history and clinical examination in orthodontics
    c. Study Models; Importance and uses - Preparation and preservation of study models.
    d. Importance of intraoral X-rays in orthodontics
    e. Panoramic radiographs: - Principles, Advantages, disadvantages and uses
    f. Cephalometries: Its advantages, disadvantages
       1. Definition
       2. Description and use of cephalostat
       3. Description and uses of anatomical landmarks lines and angles cephalometric analysis
       4. Analysis- Steiner's, Down's, Tweed's, Ricket's-E-line
      g. Electromyography and its uses in orthodontics
      h. Wrist X-rays and its importance in orthodontics

11. General Principles In Orthodontic Treatment Planning Of Dental And Skeletal Malocclusions

12. Anchorage In Orthodontics - Definition, Classification, Types and Stability Of Anchorage

13. Biomechanical Principles In Orthodontic Tooth Movement
    a. Different types of tooth movements
    b. Tissue response to orthodontic force application
14 Preventive Orthodontics
   a. Definition
   b. Different procedures undertaken in preventive orthodontics and their limitations.

15. Interceptive Orthodontics
   a. Definition
   b. Different procedures undertaken in interceptive orthodontics
   c. Serial extractions; Definition, indications, contra-indication, technique, advantages and disadvantages.
   d. Role of muscle exercises as an interceptive procedure

16. Corrective Orthodontics
   a. Definition, factors to be considered during treatment planning.
   b. Model analysis; Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis
   c. Methods of gaining space in the arch:- Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
   d. Extractions in Orthodontics - indications and selection of teeth for extraction.

17. Orthodontic Appliances: General
   d. Requisites for orthodontic appliances
   e. Classification, indications of Removable and functional Appliances
   f. Methods of force application
   g. Materials used in construction of various orthodontic appliances - uses of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antifluxes.
   h. Preliminary knowledge of acid etching and direct bonding. Ethics

REMOVABLE ORTHODONTIC APPLIANCES
1) Components of removable appliances
2) Different types of clasps and their uses
3) Different types of labial bows and their uses
4) Different types of springs and their uses
5) Expansion appliances in orthodontics;
   i) Principles
   ii) Indications for arch expansion
   iii) Description of expansion appliances and different types of
        expansion devices their uses.
   iv) Rapid maxillary expansion

**FIXED ORTHODONTIC APPLIANCES**

1. Definition, Indications 8, Contraindications
2. Component parts and ::heir uses
3. Basic principles of different techniques: Edgewise, Begg's, straight wire.

**EXTRAORAL APPLIANCES**

1. Headgears
2. chin cup
3. reverse pull headgear'

**MYOFUNCTIONAL APPLIANCES**

1. Definition and principles
2. Muscle exercises and their uses in orthodontics
3. Functional appliances:
   (i) Activator, Oral screens, Frankels function regulator, bionator twin
       blocks, lip bumper
   (ii) Inclined planes - upper and lower

18. Orthodontic Management Of Cleft Lip And Palate

19. Principles Of Surgical Orthodontics
    Brief knowledge of correction of:
    a. Mandibular Prognathism and Retrognathism
    b. Maxillary Prognathism and Retrognathism
    c. Anterior open bite and deep bite
    d. Cross bite

20. Principle, Differential Diagnosis & Methods Of Treatment Of:
    1. Midline diastema
    2. Cross bite
    3. Open bite
    4. Deep bite
    5. Spacing
    6. Crowding
    7. Class II - Division 1, Division 2
    8. Class III Malocclusion - True and Psuedo Class III

21. Retention And Relapse
2. PEADIATRIC & PREVENTIVE DENTISTRY – IV BDS

THEORY:

1. INTRODUCTION TO PEDODONTICS & PREVENTIVE DENTISTRY.
   Definition, Scope, Objectives and Importance.

2. GROWTH & DEVELOPMENT:

2. DEVELOPMENT OF OCCLUSION FROM BIRTH THROUGH ADOLESCENCE.
   Study of variations and abnormalities.

4. DENTAL ANATOMY AND HISTOLOGY:
   Development of teeth and associated structures.
   Eruption and shedding of teeth.
   Teething disorders and their management.
   Chronology of eruption of teeth,
   Differences between deciduous and permanent teeth.
   Development of dentition from birth to adolescence.
   Importance of first permanent molar.

5. DENTAL RADIOLOGY RELATED TO PEDODONTICS.

6. ORAL SURGICAL PROCEDURES IN CHILDREN.
   Indications and contraindications of extractions of primary and permanent teeth in children.
   Knowledge of Local and General Anesthesia. Minor surgical procedures in children.

7. DENTAL CARIES:
   Historical background.
   Definition, aetiology & pathogenesis.
   Caries pattern in primary, young permanent and permanent teeth in children.
   Rampant caries, early childhood caries and extensive caries:
   * Definition, aetiology, Pathogenesis, Clinical features, Complications &
Management
Role of diet and nutrition in Dental Caries. Dietary modifications & Diet counseling.
Caries activity, tests, caries prediction, caries susceptibility & their clinical application.

8. GINGIVAL & PERIODONTAL DISEASES IN CHILDREN.
Normal gingiva & periodontium in children.
Definition, aetiology & Pathogenesis.
Prevention & Management of gingival & Periodontal diseases.

9. CHILD PSYCHOLOGY:
Definition.
Theories of child psychology.
Psychological development of children with age.
Principles of psychological growth & development while managing child patient.
Dental fear and its management.
Factors affecting child's reaction to dental treatment.

10. BEHAVIOUR MANAGEMENT:
Definitions.
Types of behaviour encountered in the dental clinic.
Non-pharmacological & pharmacological methods of Behaviour Management.

11. PEDIATRIC OPERATIVE DENTISTRY:
Principles of Pediatric Operative Dentistry.
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 materials like Glass Ionomer, Composites & Silver Amalgam. Stainless steel, Polycarbonate & Resin Crowns.

12. PEDIATRIC ENDODONTICS
Principles & Diagnosis.
Classification of Pulpal Pathology in primary, young permanent & permanent teeth.

Management of Pulpally involved primary, young permanent & permanent teeth.

* Pulp capping - direct & indirect.
* Pulpotomy
* Pulpectomy
* Apexogenesi*
* Apexification

Obturation Techniques & material used for primary, young permanent & Permanent teeth in children.

13. TRAUMATIC INJURIES IN CHILDREN:
Classifications & Importance.
Sequele & reaction of teeth to trauma.
Management of Traumatized teeth.

14. PREVENTIVE & INTERCEPTIVE ORTHODONTICS:
Definitions.
Problems encountered during primary and mixed dentition phases & their management.
Serial extractions.
Space management.

15. ORAL HABITS IN CHILDREN:
Definition, Aetiology & Classification.
Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
Management of oral habits in children.

16. DENTAL CARE OF CHILDREN WITH SPECIAL NEEDS:
Definition, Aetiology, Classification, Behavioural and Clinical features & Management of children with:

• Physically handicapping conditions.
• Mentally compromising conditions.
• Medically compromising conditions.
• Genetic disorders.

17. CONGENITAL ABNORMALITIES IN CHILDREN:
Definition, Classification, Clinical features & Management.
18. DENTAL EMERGENCIES IN CHILDREN & THEIR MANAGEMENT.
19. DENTAL MATERIALS USED IN PEDIATRIC DENTISTRY.
20. PREVENTNE DENTISTRY:
   Definition.
   Principles & Scope.
   Types of prevention.
   Different preventive measures used in Pediatric Dentistry including pit and fissure sealants and caries vaccine.
21. DENTAL HEALTH EDUCATION & SCHOOL DENTAL HEALTH PROGRAMMES.
22. FLUORIDES:
   Historical background.
   Defluoridation techniques.
23. CASE HISTORY RECORDING:
   Outline of principles of examination, diagnosis & treatment planning.
24. SETTING UP OF PEDODONTIC CLINIC.
25. ETHICS.
3. PERIODONTOLOGY – IV BDS

1. Introduction: Definition of Periodontology, Periodontics, Periodontia, Brief historical background, Scope of Periodontics


3. Defensive mechanisms in the oral cavity: Role of Epithelium, Gingival fluid, Saliva and other defensive mechanisms in the oral environment.

4. Age changes in teeth and periodontal structures and their association with periodontal diseases and their significance in Geriatric dentistry

5. Classification of periodontal diseases –
   - Need for classification scientific basis of classification
   - Classification of gingival and periodontal diseases as described in World Workshop 1989

Gingivitis:
Plaque associated, ANUG, steroid hormone influenced, Medication influenced, Desquamative gingivitis, other forms of gingivitis as nutritional deficiency, bacterial and viral infections etc.

Periodontitis:
Adult periodontitis, Rapidly progressive periodontitis A&B, Juvenile periodontitis (localized, generalized, and post-juvenile), Prepubertal periodontitis, Refractory pe'riodontitis Localized and generalized

6. Gingival Disease – Localized and generalized gingivitis, Papillary, 6 marginal and diffuse gingivitis Etiology, pathogenesis, clinical signs, symptoms and management of
   i) Plaque associated gingivitis
   ii) Systemically aggravated gingivitis (sex hormones, drugs and systemic diseases)
   iii) ANUG
   iv) Desquamative gingivitis-Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other iresiculobullous lesions
v) Allergic gingivitis
vi) Infective gingivitis-Herpetic, bacterial and candidial
vii) Pericoronitis
viii) Gingival enlargement (classification and differential diagnosis)

7. Epidemiology of periodontal disease –
- Definition of index, incidence, prevalence, epidemiology, endemic, epidemic, and pandemic
- Classification of indices (Irreversible and reversible)
- Deficiencies of earlier indices used in Periodontics
- Detailed understanding of Silness & Loe Plaque Index, Loe & Silness Gingival Index, CPITN & CPI.
- Prevalence of periodontal diseases in India and other countries.
  - Public health significance (All these topics are covered at length under community dentistry. Hence, the topics may be discussed briefly. However, questions may be asked from the topics for examination)

8. Extension of inflammation from gingival –
  Mechanism of spread of inflammation from gingival area to deeper periodontal structures.

9. Pocket - Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket

10. Etiology -
- Dental Plaque (Biofilm) 5
  - Definition, New concept of biofilm
  - Types, composition, bacterial colonization, growth, maturation & disclosing agents
  - Role of dental plaque in periodontal diseases Plaque microorganisms in detail and bacteria associated with periodontal diseases
  - Plaque retentive factors
  - Materia alba
  - Food debris
  - Calculus
  - Definition
  - Types, composition, attachment, theories of formation
  - Role of calculus in disease
Food Impaction
- Definition
- Types, Etiology Hirschfeld's classification
- Signs, symptoms & sequelae of treatment

Trauma from occlusion
- Definition, Types Histopathological changes
- Role in periodontal disease
- Measures of management in brief

Habits
- Their periodontal significance
- Bruxism & parafunctional habits, tongue thrusting, lip biting, occupational habits

IATROGENIC FACTORS
Conservative Dentistry
- Restorations
- Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth

Prosthodontics
- Interrelationship
  - Bridges and other prosthesis, pontics(types), surface contour, relationships of margins to the periodontium, Gingival protection theory, muscle action theory & theory of access to oral hygiene.

Orthodontics
  - Interrelationship, removable appliances & fixed appliances
  - Retention of plaque, bacterial changes

Systemic diseases
- Diabetes, sex hormones, nutrition(Vit.C & proteins)
- AIDS & periodontium
- Hemorrhagic diseases, Leukemia, clotting factor disorders, PMN disorders

11. Risk factor - Definition. Risk factors for periodontal diseases
12. Host response -
  - Mechanism of initiation and progression of periodontal diseases
  - Basic concepts about cells, Mast cells, neutrophils, macrophages, immunoglobulins, complement system, immune mechanisms &
cytokines in brief
- Stages in gingivitis-Initial, early, established & advanced
- Periodontal disease activity, continuous paradigm, random burst & asynchronous multiple burst hypothesis

13. Periodontitis –
- Etiology, histopathology, clinical signs & 6 symptoms, diagnosis and treatment of adult periodontitis
- Periodontal abscess; definition, classification, pathogenesis, differential diagnosis and treatment
- Furcation involvement, Glickmans' classification, prognosis and management
- Rapidly progressive periodontitis
- Juvenile periodontitis: Localized and generalized Post-juvenile periodontitis
- Periodontitis associated with systemic diseases

14. Diagnosis –
- Routine procedures, methods of probing, types of 2 probes, (According to case history)
- Halitosis: Etiology and treatment. Mention advanced diagnostic aids and their role in brief.

15. Prognosis –
- Definition, types, purpose and factors to be taken into consideration

16. Treatment Plan – Factors to be considered

17. Periodontal therapy –
A. General principles of periodontal therapy. Phase I, II, III, IV therapy.

Definition of periodontal regeneration, repair, new attachment and reattachment.

B. Plaque control
(i) Mechanical tooth brushes, interdental cleaning aids, dentifrices
(ii) Chemical; classification and mechanism of action of each
 & pocket irrigation

18. Pocket eradication procedures –
- Scaling and root planing:
- Indications.
- Aims & objectives
- Healing following root planning
- Hand instruments, sonic, ultrasonic & piezoelectric scalers
- Curettage & present concepts Definition

19. Osseous Surgery – Osseous defects in periodontal disease
   - Definition
   - Classification
   - Surgery: resective, additive osseous surgery (osseous grafts with classification of grafts)
   - Healing responses
   - Other regenerative procedures; root conditioning Guided tissue regeneration

20. Mucogingival Surgery & Periodontal plastic surgeries –
   - Definition
   - Mucogingival problems: etiology, classification of gingival recession (P.O. Miller Jr. and Sullivan and Atkins)
   - Indications & objectives
   - Gingival extension procedures: lateral pedicle graft, frenectomy, frenotomy
   - Crown lengthening procedures

21. Splints –
   - Periodontal splints
   - Purpose & classification
   - Principles of splinting

22. Hypersensitivity – Causes, Theories & management

23. Implants –
   - Definition, types, scope & biomaterials used.
Periodontal considerations: such as implant-bone interface, implant-gingiva interface, implant failure, peri-implantitis & management

24. Maintenance Phase (SPT) -
   - Aims, objectives, and principles
   - Importance
   - Procedures
   - Maintenance of implants

25. Pharmaco – therapy-
   - Periodontal dressings
   - Antibiotics & anti-inflammatory drugs
   - Local drug delivery systems

26. Periodontal management of medically –
   Topics concerning periodontal management of medically compromised patients

27. Inter – disciplinary care -
   - Pulpo-periodontal involvement
   - Routes of spread of infection
   - Simons' classification Management

28. Systemic effects of periodontal diseases in brief -
   Cardiovascular diseases, Low birth weight babies etc.

29. Infection control protocol –
   - sterilization and various aseptic procedure

30. Ethics
4. ORAL & MAXILLOFACIAL SURGERY – IV BDS

DETAILED SYLLABUS

1. Introduction, definition, scope, aims and objectives.

2. Diagnosis in oral surgery
   (A) History taking
   (B) Clinical examination
   (C) Investigations.


4. Principles of Oral Surgery -
   a) Asepsis: Definition, measures to prevent introduction of infection during surgery.
      1. Preparation of the patient
      2. Measures to be taken by operator
      3. Sterilisation of instruments - various methods of sterilisation etc.
      4. Surgery set up
   b) Painless Surgery:
      1. Pre-anaesthetic considerations. Pre-medications: purpose, drugs used
      2. Anaesthetic considerations -
         a) Local b) Local with IV sedations
      3. Use of general anaesthetic
   c) Access:
      Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions.
      Bone Removal: Methods of bone removal.
      Use of Burs: Advantages & precautions
      Bone cutting instruments: Principles of using chisel & osteotome.
      Extra Oral Skin incision- principles, various extra – oral incision to expose facial skeleton.
   d) Control of haemorrhage during surgery
      Normal Haemostasis
      Local measures available to control bleeding
      Hypotensive anaesthesia etc.
e) Drainage & Debridement
   - Purpose of drainage in surgical wounds
   - Types of drains used
   - Debridement: purpose, soft tissue & bone debridement.

f) Closure of wounds
   - Suturing Principles, suture material, classification, body responses to various materials etc.

g) Post operative care
   - Post operative instruction
     - Physiology of cold and heat
   - Control of infection – antibiotics
   - Control of swelling – anti-inflammatory drugs
   - Long term post operative follow up – significance.

5. Exodontia General considerations
   - Ideal Extraction.
   - Indications for extraction of teeth
   - Extraction in medically compromised patients.
   - Methods of extraction-
     (a) Forceps or intra - avtraction of teeth
         - Extraction in medically compromised patients.
         - Principles, types of movement force etc.
     (b) Trans – alveolar, surgical or open method, Indications, surgical procedure.
   - Dental elevators: uses, classification, principles in the use of elevators commonly
     - Used elevators.
     - Complications of exodontias
     - Common to both maxilla and mandible.
     - Post –operative complications-
       - Prevention and management of complications.

6. Impacted teeth:
   - Incidence, definition actiology
     (a) Impacted mandibular third molar.
       - Classification reasons for removal, 
       - Assessment procedures for removal.
       - Surgical procedures for removal
       - Complications during and after removal.
Prevention and management.

(b) Maxillary third molar,
Indication for removal, classification,
Surgical procedure for removal,

(c) Impacted maxillary canine
Reasons for canine impaction
Localization, indications for removal,
Methods of management, labial and palatal approach,
Surgical exposure, transplantation, removal. etc.

7. Pre- prosthetic Surgery:
Definition, classification of procedures

(a) Corrective procedures: Alveoloplasty,
Reduction of maxillary tuberosities,
Frenectomies and removal of tori.

(b) Ridge extension or sulcus extension procedures
Indications and various surgical procedure

(c) Ridge augmentation and reconstruction
Indication, use of bone grafts Hydroxyapatite
Implants – concept of osseo integration
Knowledge of various types of implants and
Surgical procedure to place implants

8. Diseases of the maxillary sinus
Surgical anatomy of the sinus.
Sinnusitis both acute and chronic
Surgical approach of sinus – Caldwell Lue procedure
Oro-antral fistula – aetiology, Clinical features and various surgical methods for closure.

9. Disorders of T. M. Joint
Applied surgical anatomy of the joint
Dislocation – Types, aetiology, clinical features and management.
Ankylosis – Definition, aetiology clinical features and management.
Myo – facial pain dysfunction syndrome, aetiology, clinical features, management –
Non surgical and surgical.
Internal derangement of the joint
Arthritis of T.M. Joint.
10. Infection of the Oral cavity
   Introduction, factors responsible for infection course of odontogenic infection, spread of odontogenic infection through various facial spaces.
   Dento–alveolar abscess- etiology, clinical features and management.
   Osteomyelities of the jaws- definition aetiology, predisposing factors, classification, clinical features and management.
   Ludwigs angina- definition, etiology, clinical features, management and complications.

11. Benign cystic lesions of the jaws
   Definition, classification, pathogenesis.
   Diagnosis – Clinical features, radiological, aspiration biopsy use of contrast media and histopathology.
   Management – Type of surgical procedures, rationale of the techniques, indications, procedures, complications etc.

12. Tumours of the Oral cavity
   General considerations
   Non odontogenetic benign tumours occurring in oral cavity- fibroma, papilloma, lipoma, ossifying fibroma, myxoma etc.
   Ameloblastoma- Clinical features, radiological appearance and methods of management.
   Carcinoma of the oral cavity- TNM classification
   Outline of management of squamous Cell carcinoma surgery, radiation and chemotherapy
   Role of dental surgeons in the prevention and early detection of oral cancer.

13. Fractures of the jaws –
   General considerations, type of fractures, etiology clinical features and general mandibular fractures – Applied anatomy, classification.
   Diagnosis – Clinical and radiological
   Management – Reduction closed and open
   Fixation and immobilisation methods
   Outline of rigid and semi-rigid internal fixation.
   Fractures of the condyle- etiology classification, clinical features, principles of management.
Fractures of the middle third of the face.
Definition of the mid face, applied surgical anatomy, classification, clinical
Features and outline of management.
Alveolar fractutes – methods of management.
Fractures of the Zygomatic complex
Classification, clinical features, indications for treatment,
various methods of reduction and fixation.
Complications of fractures - delayed union, non-union and malunion.

14. Salivary gland diseases -
Diagnosis of salivary gland
diseases' Sialography, contrast
media, procedure. Infectio.ns of
the salivary glands
Sialolithiasis - Sub mandibular duct and gland arid
parotid duct. Clinical features, management.
Salivary fistulae
Common tumours of salivary glands like Pleomorphic
adenoma including minor salivary glands.

15. Jaw deformities -
Basic forms - Prognathism, Retrognathism
and open bite. Reasons for correction.
Outline of surgical methods carried out on mandible and maxilla.

16. Neurological disorders -
Trigeminal neuralgia - definition, aetiology, clinical features
and methods of management including surgical.
Facial paralysis - Aetiology, clinical
features. Nerve injuries -
Classification, neurorhaphy etc.

17. Cleft Lip and Palate -
Aetiology of the clefts, incidence, classification, role of dental surgeon
in the management of cleft patients. Outline of the closure procedures.

18. Medical Emergencies in dental practice -
Primary care of medical emergencies in dental practice particularly -
(a) Cardiovascular  (b) Respiratory (c) Endocrine  •
19. Emergency drugs & Intra muscular LV. Injections -
   Applied anatomy, Ideal location for giving these injections, techniques etc.

20. Oral Implantology

21. Ethics

LOCAL ANAESTHESIA:
Introduction, concept of L.A., classification of local anaesthetic agents, ideal requirements, mode of action, types of local anaesthesia, complications.
   Use of Vaso constrictors in local anaesthetic solution
   Advantages, contra-indications, various vaso constrictors used.
   Anaesthesia of the mandible
   Pterygomandibular space - boundaries, contents etc.
   Interior Dental Nerve Block - various techniques
   Complications
   Mental foramen nerve block
   Anaesthesia of Maxilla
   Intra - orbital nerve block.
   Posterior superior alveolar nerve block
   Maxillary nerve block - techniques.

GENERAL ANAESTHESIA-
   Concept of general anaesthesia.
   Indications of general anaesthesia in dentistry.
   Pre-anaesthetic evaluation of the patient.
   Pre-anaesthetic medication - advantages, drugs used.
   Commonly used anaesthetic agents ..
   Complication' during and after G.A.
   I. V. sedation with Diazepam and Medozolam.
   Indications, mode of action, technique etc.
   Cardiopulmonary resuscitation
   Use of oxygen and emergency drugs.
   Tracheostomy.
ORAL MEDICINE & RADIOLOGY – IV BDS

Part-I ORAL MEDICINE AND DIAGNOSTIC AIDS

SECTION (A) - DIAGNOSTIC METHODS.

(1) Definition and importance of Diagnosis and various types of diagnosis
(2) Method of clinical examinations.
   (a) General Physical examination by inspection.
   (b) Oro-facial region by inspection, palpation and other means
   (c) To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease
   (d) Examination of lesions like swellings,' ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches
   (e) Examination of lymph nodes
   (f) Forensic examination - Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics.

(3) Investigations
   (a) Biopsy and exfoliative cytology
   (b) Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis

SECTION (B) - DIAGNOSIS, DIFFERENTIAL DIAGNOSIS

While learning the following chapters, emphasis shall be given only on diagnostic aspects including differential diagnosis

(1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
(2) Diseases of bone and Osteodystrophies: Development disorders:
   Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenisis imperfecta, Marfans syndrome,
   Osteopetrosis , Inflammation- Injury, infection and spread of infection, fascial space infections, osteoradionecrosis.
   Metabolic disorders – Histiocytosis
   Endocrine- Acro megal and hyperparathyroidism
   Miscellaneous – Page’s disease , Mono and poyostotic fibrous dysplasis, Cherubism,
(3) Temporomandibular joint: Developmental abnormalities of the condyle, Rheumatoid arthritis, Osteoarthritis, Sub – luxation and luxation.

(4) Common cysts and Tumors.

CYSTS ; cysts of soft tissue: Mucocele and Ranula

Cysts of bone: Odontogenic and nonodontogenic.

TUMORS:

Soft Tissue:

Epithelial: Papilloma, Carcinoma, Melanoma

Connective tissue: Fibroma, Lipoma, Fibrosarcoma

Vascular: Haemangioma, Lymphangioma

Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis

Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin’s Tumor,

Adenoid cystic carcinoma.

Hard Tissue:

Non Odontogenic: Osteoma, Osteosarcoma, Osteolastoma, Chondroma.

Chondrosarcoma, Central giant cell tumor and central and d central haemangioma.

Odontogenic: enamelma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor,

Adenomatoid Odontogenic tumor, Periapical cemental dysphasia and odontomas.

(5) Periodontal diseases: Gingival hyperplasia, gingivitis, perodontitis, pyogenic granuloma

(6) Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma,

Crohn’s Disease and Histiocytosis X

(7) Miscellaneous Disorders: Burkitt lymphoma, sturge- weber syndrome, CREST syndrome, rendu- osler – weber disease

SECTION (C) ORAL MEDICINE AND THERAPEUTICS.

The following chapters shall be studied in detail including the etiology, pathogenesis, clinical features, investigations, differential diagnosis, management and prevention.

(1) Infections of oral and paraoral structures

Bacterial Streptococcal, tuberculosis, syphils, vincents, leprosy, actiomycosis,
diphtheria and tetanus

Fungal Candida albicans

Virus: Herpes simplex, herpes zoster, ramsay hunt syndrome, measles,
herpangina, mumpes, infectious mononucleosis AIDS and hepatitis – B
Important common mucosal lesions:
White lesions: Chemical burns, leukodema, leukoplakia, Fordyce spots, stomatitis nicotina palatinus, with sponge nevus, candidasis, lichenplanus, discoid lupus erythematosus
Vericulo- bullous lesions Herpes simples, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid erythema multiforme.
Ulcers: Acute and chromic ulcers
Pigmented lesions: Exogenous and endogenous
Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.

Cervico- facial lymphadenopathy

Facial pain:
(i) Organic pain: Pain arising from the diseases of orfacial tissues like teeth, pulp gingival periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc.
(ii) Pain arising due to C.N.S. diseases:
(a) Pain due to intracranial and extracranial involvement of cranial nerves (Multiple sclerosis cerebrovascular diseases, trotter’s syndrome. Etc.)
(b) Neuralgic pain due to unknown causes: Trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain.
(iii) Referred pain: Pain arising from distant tissues like heart, spine etc.

Altered sensation: Cacogeusia, halitosis

Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)

Oral manifestations of:
(i) Metabolic disorders:
(a) Porphyria
(b) Haemochromatosis
(c) Histocytosis X diseases
(ii) Endocrine disorders:
(a) Pituitary: Gigantism, acromegaly, hypopituitarism
(b) Adrenal cortex: Addison's disease (Hypofunction) Cushing's syndrome (Hyperfunction)
(c) Parathyroid glands: Hyperparathyroidism.
(d) Thyroid gland: (Hypothyroidism) Cretinism, myxedema (e) Pancreas: Diabetes
(iii) Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)
(iv) Blood disorders
(a) Red blood cell diseases
  Deficiency anemias: (Iron deficiency, plummer - vinson syndrome, pernicious anemia)
  Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis) Aplastic anemia . .
  Polycythemia
(b) White Blood cell diseases
  Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias
(c) Haemorrhagic disorders:
  Thrombocytopenia, purpura, hemophillia, chrismas disease and von willebrand's disease
(8) Disease of salivary glands:
  (i) Development disturbances: Aplasia, atresia and aberration
  (ii) Functional disturbances:Xerostomia, ptyalism
  (iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis heerdfort's - syndrome (Uveoparotid fever), Necrotising sialometaplasia
  (iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma
  (v) Miscellaneous: Sialolithiasis, sjogren's syndrome, mikuliez's disease and sialosis
(9) Dermatological diseases with oral manifestations:
   (a) Ectodermal dysplasia (b) Hyperkerotosis palmarplantaris with periodontopathy (c) Scleroderma (d) Lichen planus including ginspan's syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis

(10) Immunological diseases with oral manifestations
   (a) Leukemia (b) Lymphomas (c) Multiple myeloma (d) AIDS clinical manifestations opportunistic infections, neoplasms
   (e) Thrombocytopenia (f) Lupus erythematosus (g) Scleroderma
   (h) dermatomyositis (i) Submucous fibrosis (j) Rheumatoid arthritis
   (k) Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome

(11) Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)

(12) Foci of oral idection and their ill effects on general health

(13) Management of dental problems in medically compromised persons:
   (i) Physiological changes: Puberty, pregnancy and menopause
   (ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.

(14) Precancerous lesions and conditions

(15) Nerve and muscle diseases:
   (i) Nerves: (a) Neuropraxia (b) Neurotemesis (c) Neuritis (d) Facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and ramsay hunt syndrome
   (e) Neuroma (f) Neurofibromatosis (g) Frey's syndrome

   (ii) Muscles: (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome (c) Trismus

(16) Forensic odontology:
   (a) Medicolegal aspects of orofacial injuries (b) Identification of bite marks
(c) Determination of age and sex  
(d) Identification of cadavers by dental appliances, Restorations and tissue remanants  

(17) Therapeutics: General therapeutic measures - drugs commonly used in oral medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demelucents, local surface anaesthetic, sialogogues, antisialogogues and drugs used in the treatment of malignancy

Part - II BERA VIOURAL SCIENCES AND ETHICS.  
Part - III ORAL RADIOLOGY  

(1) Scope of the subject and history of origin  
(2) Physics of radiation: (a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays (e) Compton effect (f) Photoelectric effect (g) Radiation measuring units  
(3) Biological effects of radiation  
(4) Radiation safety and protection measures  
(5) Principles of image production  
(6) Radiographic techniques:  
(i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel technics) (b) Bite wing radiographs (c) Occlusal radiographs  
(ii) Extra-oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (e) Cephalograms  
(d) Orthopantomograph (e) Projections of temperomandibular joint and condyle of mandible  
(f) Projections for Zygomatic arches  
(iii) Specialised techniques: (a) Sialography (b) Xeroradiography (c) Tomography
(7) Factors in production of good radiographs:
   (a) K.V.P. and mA.of X-ray machine (b) Filters (c) Collimations
   (d) Intensifying screens (e) Grids (f) X-ray films (g) Exposure time
   (h) Techniques (i) Dark room (j) Developer and fixer solutions
   (k) Film processing

(8) Radiographic normal anatomical landmarks

(9) Faculty radiographs and artefacts in radiographs

(10) Interpretation of radiographs in various abnormalities of teeth,
bones and other orofacial tissues

(11) Principles of radiotherapy of oro-facial malignancies and
complications of radiotherapy

(12) Contrast radiography and basic knowledge of radio-active isotopes

(13) Radiography in Forensic Odontoloy - Radiographic age estimation
    and post-mortem radiographic methods
6. CONSERVATIVE DENTISTRY & ENDODONTICS – IV BDS

1. Nomenclature of Dentition
   Tooth numbering systems A.D.A Zsigmondy palmer and F.D.I system

2. Principles of cavity preparation
   Steps and nomenclature of cavity preparation classification of cavities nomenclature of floors Angles of cavities

3. Dental caries:
   Aetiology, classification, clinical features, morphological features, microscopic features, clinical diagnosis and sequel of dental caries.

4. Treatment planning for operative dentistry:
   Detailed clinical examination, radiographic examination, tooth vitality test, tests, diagnosis and treatment planning, preparation of the case sheet.

5. Gnathological concepts of restoration:
   Physiology of occlusion, normal occlusion, ideal occlusion, mandibular movements and occlusal analysis, occlusal rehabilitation and restoration.

6. Armamentarium for cavity preparation:
   General classification for operative instruments, hand cutting instruments, design formula and sharpening of instruments. Rotary cutting instruments, dental bur, mechanism of cutting, evaluation of hand piece and speed current concepts of rotary cutting procedures. Sterilisation and maintenance of instruments. Basic instrument tray set up.

7. Control of operating field:
   Light source sterilization field of operation control of moisture, rubber dam in detail, cotton rolls and anti-sialogagues.

8. Amalgam restoration:
   Indications, contraindications, physical and mechanical properties, clinical behavior, cavity preparation for class I, II, V and III step wise procedure for cavity preparation and restoration, failure of amalgam restoration.

9. Pulp protection:
   Liners, bases and varnishes, zinc phosphate, zinc polycarboxylate, zinc oxide eugenol, glass ionomer cement

10. Anterior Restoration:
    Selection of cases, selection of materials, step wise procedures for using restorations, silicate (theory only) glass ionomers, composites, including sand witch restorations and bevel of the same with a note on status of the dentine bonding agents.
11 Direct filling gold restorations:

Types of direct filling gold, indications and limitations of cohesive gold. Annealing of gold foil cavity preparation and condensation of gold foils.

12 Preventive Measures in Restorative practice:

Plaque control, pit and fissure sealants, dietary measures, restorative procedure and periodontal health contact and contour of teeth and restorations. Matrices, tooth separation and wedges.

13 Temporisation or interim Restoration


15. Management of deep carious lesions indirect and direct pulp capping.

16. Non carious destruction tooth structures diagnosis and clinical management.

17. Hyper sensitive dentine and its management.

18. Cast Restorations

Indication contra indication advantages and materials used for same class II and I cavity preparation.

For inlays fabrication of wax pattern spurring, inverting and casting procedures and casting defect.


20. Gingival tissues management for cast restoration and impression procedures.

21. Recent cavity modification amalgam restoration.

22. Differences between amalgam and inlay cavity preparation with note on all the type of Burwells used for cast restoration.

23. Control of pain during operative procedures.

24. Treatment planning for operative dentistry detailed clinical examination radiographic examination.

25. Vitality tests diagnosis and treatment planning and preparation of case sheet.


1. Biological Considerations.

Evaluation, clinical application and adverse effects of the following materials. Dental cements, Zinc oxide eugenol cements, zinc phosphate cements, polycarboxylates glass ionomer.
cements, silicate cement calcium hydroxides vanishes.

2. Dental amalgam, technical considerations mercury toxicity mercury hygiene.

3. Composite, Dentine bonding agents, chemical and light curing composites

4. Rubber base Imp. Materials

5. Nobel metal alloys & non noble metal alloys

6. Investment and die materials

7. Inlay casting waxes

8. Dental porcelain

9. Aesthetic Dentistry

27. Endodontics: introduction definition scope and future of endodontics

28. Clinical diagnostic methods

29. Emergency endodontic procedures


31. Periapical diseases: acute periapical abscess, acute periodontal abscesses phoeix abscess, chronic alveolar abscess granuloma cysts Condensing osteits, external resorption.

32. Vital pulp therapy: indirect and direct pulp capping pulpotomy different types and medicaments used.

33. Apexogenisis and apexification or problems of open apex.

34. Rationale of endodontic treatment case selection indication and contraindications for root canal treatments.


37. Preparation of root canal space. Determination of working length, cleaning and shaping of root canals, irrigating solution chemical aids to instrumentation.


40. Methods of cleaning and shaping like step back crown down and conventional methods.


42. Failures in endodontics.


49. Emergency endodontic procedures.

50. Lasers in conservative endodontics (introduction only) practice management.
52. Duties towards the govt. Like payments of professional tax, income tax.
53. Financial management of practice
54. Dental material and basic equipment management.
55. Ethics

7. PROSTHODONTICS AND CROWN & BRIDGE – IV BDS
**Complete Dentures**

A. Applied Anatomy and Physiology.
   1. Introduction
   2. Biomechanics of the edentulous state.
   3. Residual ridge resorption.

B. Communicating with the patient
   Understanding the patients. Mental attitude.
   Instructing the patient.

C. Diagnosis and treatment planning for patients-
   1. With some teeth remaining.
   2. With no teeth remaining.
      a) Systemic status.
      b) Local factor.
      c) The geriatric patient.
      d) Diagnostic procedures.

D. Articulators- discussion

E. Improving the patient's denture foundation and ridge relation -an overview.
   a) Pre-operative examination.
   b) Initial hard tissue & soft tissue procedure.
   c) Secondary hard & soft tissue procedure.
   d) Implant procedure.
   e) Congenital deformities.
   f) Postoperative procedure.
F. Principles of Retention, Support and Stability

G. Impressions - detail.
   a) Muscles of facial expression.
   b) Biologic considerations for maxillary and mandibular impression including anatomy landmark and their interpretation.
   c) Impression objectives.
   d) Impression materials.
   e) Impression techniques.
   f) Maxillary and mandibular impression procedures.
      i. Preliminary impressions.
      ii. Final impressions.
   g) Laboratory procedures involved with impression making (Beading & Boxing, and cast preparation).

H. Record bases and occlusion rims - in detail.
   a) Materials & techniques.
   b) Useful guidelines and ideal parameters.
   c) Recording and transferring bases and occlusal rims.

I. Biological consideration in jaw relation & jaw movements - craniomandibular relations.
   a) Mandibular movements.
   b) Maxillo-mandibular relation including vertical and horizontal jaw relations.
   c) Concept of occlusion - discuss in brief.

J. Relating the patient to the articulator.
   a) Face bow types & uses - discuss in brief.
   b) Face bow transfer procedure - discuss in brief.

K. Recording maxillo mandibular relation.
   a) Vertical relations.
   b) Centric relation records.
   c) Eccentric relation records.
   d) Lateral relation records.
L. Tooth selection and arrangement.
   a) Anterior teeth.
   b) Posterior teeth.
   e) Esthetic and functional harmony.
M. Relating inclination of teeth to concept of occlusion - in brief.
   a) Neutrocentric concept.
   b) Balanced occlusal concept.
N. Trial dentures.
O. Laboratory procedures.
   a) Wax contouring.
   b) Investing of dentures.
   c) Preparing of mold.
   d) Preparing & packing acrylic resin.
   e) Processing of dentures.
   f) Recovery of dentures.
   g) Lab remount procedures.
   h) Recovering the complete denture from the cast.
   i) Finishing and polishing the complete denture.
   j) Plaster cast for clinical denture remount procedure.
P. Denture insertion.
   a) Insertion procedures.
   b) Clinical errors.
   c) Correcting occlusal disharmony.
   d) Selective grinding procedures.
R. Treating problems with associated denture use - discuss in brief
   (tabulation/flow-chart form).
S. Treating abused tissues - discuss in brief.
T. Relining and rebasing of dentures - discuss in brief.
U. Immediate complete dentures COstruction procedure - discuss in brief.
V. The single complete denture - discuss in brief.
W. Overdentures denture - discuss in brief.
X. Dental implants in complete denture - discuss in brief:
Note: It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover -

1. Definition
2. Diagnosis (of the particular situation/patient selection/planning)
3. Types / Classification
4. Materials
5. Methodology - Lab / Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase
9. Oral Implantology
10. Ethics

REMOVABLE FLEXIBLE DENTURE

1. Introduction
   - Terminologies and scope
2. Classification.
3. Examination, Diagnosis & Treatment planning & evaluation of diagnostic data.
   ~ Major connectors;
   ~ minor connectors,
   ~ Rest and rest seats.
5. Components of a Removable Partial Denture.
   ~ Direct retainers;
   ~ Indirect retainers,
   ~ Tooth replacement.
7. Survey and design - in brief.
   - Surveyors.
   - Surveying.
   - Designing.
8. Mouth preparation and master cast.
9. Impression materials and procedures for removable partial dentures.
11. Laboratory procedures for framework construction - in brief.
12. Fitting the framework - in brief.
14. Completion of the partial denture - in brief.
15. Inserting the Removable Partial Denture - in brief.
16. Postinsertion observations.
17. Temporary Acrylic Partial Dentures.
18. Immediate Removable Partial Denture.

Note: It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover -
1. Definition
2. Diagnosis (of the particular situation / patient selection / treatment planning)
3. Types / Classification
4. Materials
5. Methodology - Lab / Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase
Fixed Partial Dentures

**Topics To Be Covered In Detail**

1. Introduction
3. Articulators - in brief.
4. Treatment planning for single tooth restoration
5. Treatment planning for the replacement of missing teeth including selection and choice of abutment teeth.
6. Fixed partial denture configurations.
8. Preparations for full veneer crown in detail.
10. Provisional Restoration
11. Fluid Control and Soft Tissue Management
12. Impressions
13. Working Casts and dies
14. Wax Pattens
15. Pontics and Edentulous Ridges
16. Esthetic Consideration
17. Finishing and cementation

**Topics To Be Covered In Brief -**

1. Solder Joints and Other connector
2. All - Ceramic restoration
3. Metal – ceramic Restorations
4. Preparations of intracoronal restorations.
5. Preparations for extensively damaged teeth.
6. Preparations for periodontology weakened teeth
7. The functionally " Generated, path Technique
8. Investing and Casting
9. Resin - BGl1,ded Fixed Partial Denture
Note: It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover -

1. Definition
2. Diagnosis (of the particular situation / patient selection / treatment planning)
3. Types / Classification
4. Materials
5. Methodology ~ Lab / Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

19 AESTHETIC DENTISTRY

Aesthetic Dentistry is gaining MORE popularity since last decade. It is better that undergraduate students should understand the philosophy and scientific knowledge of the esthetic dentistry.

I. Introduction and scope of esthetic dentistry
2. Anatomy, & physiology of smile
3. Role of the colour in esthetic dentistry
4. Simple procedures (roundening of central incisors to enhance esthetic appearance)
5. Bleaching of teeth
6. Veneers with various materials
7. Preventive and interceptive esthetics
8. Ceramios

9. Simple gingival contouring to enhance the appearance
10. Simple clinical procedures for BDS students
8. PUBLIC HEALTH DENTISTRY (COMMUNITY) – IV BDS

**Syllabus:**

1. Introduction to Dentistry: Definition of Dentistry, History of dentistry, Scope, aims and objectives of Dentistry.

2. Public Health:

   (i) Health & Disease: - Concepts, Philosophy, Definition and Characteristics

   (ii) Public Health: - Definition & Concepts, History of public health

   (iii) General Epidemiology: - Definition, objectives, methods

   (iv) Environmental Health: - Concepts, principles, protection, sources, purification environmental sanitation of water disposal of waste sanitation, then role in mass disorder

   (v) Health Education: Definition, concepts, principles, methods, and health education aids

   (vi) Public Health Administration: - Priority, establishment, manpower, private practice management, hospital management.

   (vii) Ethics and Jurisprudence: Professional liabilities, negligence, malpractice, consents, evidence, contracts, and methods of identification in forensic dentistry.

   (viii) Nutrition in oral diseases

   (ix) Behavioral science: Definition of sociology, anthropology and psychology and their in dental practice and community.

   (x) Health care delivery system: Center and state, oral health policy, primary health care, national programmes, health organizations.
Dental Public Health:
1. Definition and difference between community and clinical health.
2. Epidemiology of dental diseases - dental caries, periodontal diseases, malocclusion, dental fluorosis and oral cancer.
4. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive health care, school dental health.
5. Payments of dental care: Methods of payments and dental insurance, government plans
6. Preventive Dentistry - definition, Levels, role of individual, community and profession, fluorides in dentistry, plaque control programmes.

Research Methodology and Dental Statistics
1. Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes
2. Research Methodology: - Definition, types of research, designing a written protocol

Practice Management
1. Place and locality
2. Premises & layout
3. Selection of equipments

Dentist Act 1948 with amendment.
Dental Council of India and State
Dental Councils Composition and responsibilities.
Indian Dental Association
Head Office, State, local and branches.