CURRICULUM

DEPARTMENT OF OPERATIVE DENTISTRY

I. Course Topic: OPERATIVE DENTISTRY

S. No.	Lecture Topic	Learning Objectives	Mode of Teaching	Assessment tools
01	Biologic Considerations in Operative Dentistry	- Discuss the chemical composition, structure and properties of: o Enamel, o Dentin o Pulp, o Cementum, o Gingiva. - Discuss the morphologic and histologic structure of tooth tissues with their clinical impact on restorative dentistry. - Discuss the importance of dentogingival complex and biologic width in restorative dentistry.	- Lecture	- Class Test - Class Participation - Final Examination
02	Patient Evaluation and Problem Oriented Treatment Planning	- Define treatment oriented treatment planning and discuss its merits and drawbacks. - Describe problem oriented treatment planning and its merits. - Discuss the correct questions regarding history and symptoms of presenting complaint. - Understand the importance of a thorough medical and dental history. - Describe and discuss elements of a clinical examination: o Evaluation of dentition, o Evaluation of periodontium, o Evaluation of radiographs, o Evaluation of	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination

		diagnostic casts and photographs. - Discuss esthetic parameters to be considered when restoring the dentition. - Understand that correct treatment sequencing is imperative for a successful treatment plan. - Discuss the importance of dental record keeping.		
03	Preliminary Considerations in Operative Dentistry	- Understand the need of correct patient and operator positions when carrying out restorative procedures. - Discuss the ideal operating positions when carrying out various procedures. - Discuss the importance of isolation in operative dentistry and endodontics. - Enlist and describe different methods used for isolation. - Enlist and describe the armamentarium required for rubber dam isolation. - Describe and perform application and removal of rubber dam for operative dentistry and endodontics.	- Lecture - Tutorial/ Small Group Discussion - Clinical Teaching	- Class Test - Class Participation - Group Assignment - Final Examination
04	Sterilization And Disinfection	- Define and differentiate between the following terms: o Sterilization, o Disinfection, o Asepsis. - Discuss the importance of sterilization and disinfection. - Enlist elements of a sterilization plan. - List various methods used for sterilization. - Discuss methods to monitor effectiveness of sterilization. - List chemicals that are used for disinfection. - Discuss general considerations for infection control in the dental office.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination

05	Assessment of Radiographs	- Describe importance of radiographs in operative dentistry. - Identify normal anatomic structures of maxilla and mandible on a: o Periapical x-ray, o Bitewing x-ray, o Occlusal x-ray, o Orthopantomogram (OPG). - Discuss the indications and limitations of the following x-rays views for diagnostic purposes: o Periapical x-ray, o Bitewing x-ray, o Occlusal x-ray, o Orthopantomogram (OPG).	- Lecture - Tutorial/ Small Group Discussion - Clinical Teaching	- Quiz - Class Participation - Final Examination
06	Dental Caries- Etiology and Clinical Characteristics	- Define dental caries. - Discuss etiology and pathogenesis of dental caries. - Describe factors influencing dental caries process. - Discuss role of plaque biofilm in progression of dental caries. - Describe microorganisms responsible for dental caries. - Describe the Stephan's curve. - Describe clinical characteristics and progression of carious lesions as seen on: o Pit and fissures, o Smooth surfaces, o Root surfaces. - Describe the progression of carious lesions in: o Enamel, o Dentin. - Discuss the different zones of enamel and dentin caries.	- Lecture	- Class Test - Quiz - Class Participation - Final Examination
07	Dental Caries- Diagnosis and Management	- Discuss methods of detection and diagnosis of dental caries. - Describe International Caries Detection and Assessment System (ICDAS II). - Discuss how to assess dental	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Quiz - Class Participation - Final Examination

		caries risk for a patient. - Define and discuss Caries Management by Risk Assessment (CAMBRA). - Discuss protocols and strategies for prevention of dental caries. - Discuss non-invasive options for treatment of existing lesions. - Define caries control restorations. - Describe the clinical protocol for caries control restorations. - Understand the need to devise a logical treatment plan sequence for restoring a patient's dentition. - Discuss maintenance care and recall visit intervals for individuals based on risk assessment.		
08	Management of Deep Carious Lesion	- Discuss the various possible reactions of the pulp-dentin complex to a deep carious lesion. - Define: o Stepwise excavation, o Indirect pulp cap, o Direct pulp cap (carious and iatrogenic). - Discuss the rationale of stepwise excavation. - Enumerate materials that can be used for direct and indirect pulp cap. - Describe the clinical protocol for direct and indirect pulp cap procedures.	- Lecture	- Class Test - Quiz - Class Participation - Final Examination
09	Nomenclature, Principles of Cavity Design and Preparation. Class I- Class VI	- Describe different systems for naming and numbering teeth. - Describe the nomenclature of tooth surfaces and cavity preparation. - Explain classification of caries lesions and tooth preparation. - Describe the objectives of tooth preparation.	- Lecture - Tutorial/ Small Group Discussion	- Class Participation - Group Assignment - Final Examination

		- Enlist factors that need to be considered before tooth preparation. - Describe the steps in the initial and final stages of tooth preparation. - Identify shortcomings of Black's cavity classification. - Describe the advances in material sciences have made cavity preparation minimally invasive. - Plan restorations in different clinical situations.		
10	Instruments and Equipment for Tooth Preparation	- Enlist hand and rotary instruments used for tooth preparation. - List various cutting and noncutting hand instruments. - Discuss the design features for hand cutting instruments. - Discuss the nomenclature for hand cutting instruments. - Describe sharpening of hand instruments. - Describe the various instrument grasp techniques that can be employed. - Enlist and describe rotary cutting equipment and instruments. - Discuss common design characteristics of rotary cutting instruments (dental burs). - Discuss latest developments for tooth preparation and caries removal including: o Lasers, o Ozone, o Air abrasion. - Discuss hazards with cutting instruments and their prevention.	- Lecture - Tutorial/ Small Group Discussion	- Class Participation - Final Examination
11	Occlusion	- Define the terms: o Occlusion, o Static occlusion, o Dynamic occlusion, o Centric relation,	- Lecture	- Class Test - Class Participation - Final Examination

		○ Maximum intercuspation, ○ Supporting cusps, ○ Nonsupporting cusps. - Describe and explain the types and directions of mandibular movements. - Discuss the importance of restoring occlusion in restorative dentistry.		
12	Review of Restorative Materials	- Discuss the composition, properties, merits and shortcomings of materials used for direct restorations: ○ Amalgam, ○ GIC, ○ Composite.	- Lecture - Tutorial/ Small Group Discussion	- Quiz - Class Participation - Final Examination
13	Amalgam Restorations	- Discuss chemistry of dental amalgam. - Discuss mercury hazards and hygiene. - List advantages and disadvantages of amalgam restorations. - Describe class 1 cavity preparation. - Explain the outline form of a class 2 cavity. - Discuss ways of improving resistance and retention form of a simple class 1 and 2 restoration. - Define complex restorations. - Discuss ways of improving resistance and retention form of complex restorations. - Describe the need for cuspal coverage with special reference to rule of thirds. - Describe types of dentin pins. - Describe method of placement of dentin pins. - Describe other mechanical features to improve resistance and retention. - Discuss importance of matrices and wedges.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination

		- List various types of matrix band systems. - List various parts of tofflemire. - Describe the method of using a tofflemire. - List different types of wedges. - Describe bonded amalgam restorations. - Describe the mechanism of amalgam bonding. - Describe placement of amalgam in simple and complex cavities. - Discuss other cavity preparation designs e.g. box only preparation, tunnel preparation. - Discuss cavity preparation and restoration of a class 6lesion.		
14	Bonding to Enamel and Dentin	- List advantages of adhesive techniques over conventional, non-adhesive methods. - Describe the structure of enamel and explain why it is a favorable substrate for bonding. - Describe the structure of dentin and explain how it is different from enamel. - Discuss the effect of smear layer on dentin bonding. - Explain the effect of Configuration Factor (C-factor) on bonding. - List scientific classification of modern adhesives. - Describe smear layer modifying adhesives. - Discuss etch and rinse adhesives. - Explain the effect of acid conditioning on enamel. - Discuss difficulties in dentine conditioning. - Discuss chemistry of primers and adhesive resin (bonding agent). - Explain the importance of hybridization for effective	- Lecture	- Class Test - Class Participation - Final Examination

		dentine bonding. - Discuss self etch adhesives. - Describe 4th, 5th 6th and 7th generation adhesives. - Explain steps involved in enamel bonding. - Describe steps in dentin bonding. - Describe the bond strength under optimal conditions.		
15	Direct Anterior Composite Restorations	- Discuss the chemistry of anterior composites. - Describe preoperative evaluation for an anterior composite restoration. - Describe factors influencing shade selection. - Discuss guidelines for shade matching. - Discuss various methods of shade selection. - Describe cavity preparation for class 3 restorations. - Outline cavity preparation for class 4 restorations. - Discuss importance of matrices and wedges. - Explain composite placement technique for class 3 and 4 restorations. - List indications, contraindications, advantages and disadvantages of direct composite veneers. - Describe clinical steps for placing direct resin composites veneer. - Explain the technique for diastema closure with direct composite. - Discuss different instruments used for finishing and polishing of composite restorations and their use.	- Lecture	- Quiz - Class Participation - Final Examination
16	Direct Posterior Composite	- Enumerate indications, contraindications, advantages and disadvantages for	- Lecture	- Quiz - Class Participation

	Restorations	composite resin as a posterior restorative material. - Describe preoperative evaluation for a posterior composite restoration. - List factors affecting retention of fissure sealants. - Describe placement technique for preventive resin restoration. - Explain the importance of pre-wedging in class 2 composites. - Discuss the outline form of a class 2 cavity. - Explain bonded base technique. - Classify matrix systems available for composite restorations. - Compare circumferential and sectional matrix systems. - Discuss different methods to minimize polymerization shrinkage when placing composite. - List different methods to create a tight contact for class 2 composite restorations. - List various resin polymerization equipment. - Discuss other cavity preparation designs e.g. box only preparation, tunnel preparation. - Discuss cavity preparation and restoration of a class 6lesion.		- Final Examination
17	Class 5 Restorations	- Describe cavity preparation for class 5 restorations. - Describe non-surgical and surgical techniques for isolating class 5 restorations. - Discuss restorative materials available for restoring class 5 lesions. - List ways of improving retention of class 5 composite restorations.	- Lecture	- Class Participation - Final Examination
18	Diagnosis and Treatment of	- Define root caries. - Describe appearance and	- Lecture	- Quiz - Class Test

	Root Caries	location of root caries. - List etiology and risk factors associated with root caries. - Discuss preventive and chemotherapeutic strategies to treat root caries. - Discuss available restorative materials for treating root caries.		- Class Participation - Final Examination
19	Tooth Surface Loss	- Define the following types of tooth surface loss: o Abrasion, o Attrition, o Erosion, o Abfraction. - Discuss the etiology of each. - Discuss the prevention and management of tooth surface loss. - List etiology, pathogenesis and management of dentine hypersensitivity.	- Lecture	- Class Test - Class Participation - Final Examination
20	Discoloration of Teeth	- Describe causes of tooth discoloration. - Describe nature of stains. - Describe mode of action of bleaching agent on stains. - Enlist commonly used bleaching agents and their strengths. - Enlist indications and contraindications of various types of bleaching techniques. - Explain technique for : o In-office vital bleaching o At-home vital bleaching o Non-vital bleaching. - Describe the procedure for micro abrasion and macro abrasion.	- Lecture	- Quiz - Class Participation - Final Examination

II. Course Topic: ENDODONTICS

S. No.	Lecture Topic	Learning Objectives	Mode of Teaching	Assessment Tools
01	Biology of Dental Pulp and Periradicular Tissue	- Recognize the anatomic regions of the pulp and their clinical importance. - Describe the functions of the pulp-dentin complex. - Describe the blood vessels and lymphatics of pulp. - List the neural components of pulp and describe their distribution and function. - Discuss theories of dentin sensitivity. - Describe the pathway of efferent nerves from the pulp to central nervous system. - Describe changes in pulp morphology with age. - Describe the structure and function of periradicular tissues.	- Lecture	- Class Test - Quiz - Class Participation - Final Examination
02	Preserving Pulp Vitality	- Understand physiologic and structural characteristics of pulp and how it affects pulp response to injury. - Discuss iatrogenic effects on the dental pulp by: o Local anesthetics with vasoconstrictor, o Cavity/ crown preparation (thermal shock), o Depth of cavity preparation, o Various restorative materials, o Placement of pins, o Polishing restorations, o Post-restoration hypersensititvity, o Orthodontic tooth movement, o Vital bleaching. - Discuss the formation and role	- Lecture	- Class Test - Quiz - Class Participation - Final Examination

		of tertiary dentin in pulp protection. - Discuss preventive measures during dental restorative procedures to preserve pulp vitality.		
03	Endodontic Microbiology	- Describe the routes of entry of microorganisms to the pulp and periradicular tissues. - Discuss the different types of endodontic infections. - Describe the various microbial species involved in different types of endodontic infections. - Discuss ecology of endodontic microbiota and features of endodontic ecosystem.	- Lecture	- Class Test - Class Participation - Final Examination
04	Pulp and PeriradicularPathosis	- Identify etiological factors of pulp inflammation. - Explain mechanism of spread of inflammation in the pulp. - Explain why the pulp has difficulty in recovering from severe injury. - List specific and non-specific indicators of pulpal inflammation. - Classify pulpal diseases along with their clinical and histological features. - Describe the mechanisms and explain consequences of spread of pulpal inflammation into periradicular tissues. - Classify periradicular lesions of pulpal origin along with their clinical and histological features. - Describe steps involved in repair of periapical pathosis after successful root canal treatment. - Identify and describe non-endodontic lesions that may simulate endodontic periradicular pathosis.	- Lecture	- Class Test - Quiz - Class Participation - Final Examination
05	Endodontic	- Discuss the correct questions regarding history and	- Lecture - Tutorial/	- Class Test - Class

	Diagnosis and Treatment Plan	symptoms of presenting complaint. - Understand the importance of a thorough medical and dental history. - Perform complete extra and intraoral examination to ascertain pulpal and periapical health. - Describe various vitality tests, interpret their findings and understand their limitations. - Correlate radiographic findings to the history and clinical examination. - Discuss the common medical diseases that may influence endodontic treatment planning. - Discuss special considerations when planning treatment for geriatric patients. - Consolidate all the data to formulate a diagnosis and treatment plan. - Discuss the importance of an informed consent before any treatment. - Understand the importance of referral to an endodontist in certain cases.	Small Group Discussion	Participation - Group Assignment - Final Examination
06	Endodontic Radiology	- Describe importance of radiographs in endodontics. - Identify normal anatomic structures of maxilla and mandible on radiograph. - Describe radiographic characteristics to differentiate between endodontic and non-endodontic radiolucencies and radioopacities. - Describe radiographic characteristics of periapical lesion of endodontic origin. - Describe reasons for varying horizontal and vertical cone angulations to create image shift.	- Lecture - Tutorial/ Small Group Discussion - Clinical Teaching	- Class Test - Group Assignment - Final Examination

		- Describe the SLOB rule. - Describe new technologies for radiographic imaging.		
07	Pulp Anatomy	- Understand the relationship of shape of pulp system to root anatomy. - State laws of canal orifice location. - List and recognize significance of iatrogenic or pathologic factors that may cause alterations in pulp anatomy. - Define pulp space and list and describe its major components. - Describe variations in the pulp system in apical third. - Describe how to determine clinically the distance from occlusal/incisal surface to the roof of chamber. - Describe accessory canals. - Describe relationship between anatomic, radiographic and actual location of apical foramen. - Describe common variations in pulp anatomy resulting from developmental abnormalities. - Describe changes in pulp anatomy that occur with age. - Draw a representative example of the most common internal and external anatomy of each tooth in sagittal section and in cross section.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Quiz - Class Participation - Individual Assignment - Final Examination
08	Instruments in Endodontics	- Define a basic set of instruments appropriate for various endodontic procedures. - Describe the general physical properties of instruments. - Describe the design of common canal preparation instruments and their mode of use. - Explain the basis for sizing and taper of hand operated instruments. - Describe proper use of instruments to prevent	- Lecture	- Class Test - Quiz - Class Participation - Final Examination

		breakage within canal. - Recognize visible changes in instruments that will predispose to breakage. - Describe techniques for sterilization and disinfection. - Describe nickel titanium rotary instruments.		
09	Local Anesthesia in Endodontics	- Define pain threshold and the factors affecting pain threshold. - List techniques that are helpful in giving "painless" injections. - Describe the "routine" approach to conventional local anesthesia. - Describe circumstances that create difficulties in obtaining profound anesthesia. - Describe when to use supplemental methods of obtaining pulpal anesthesia. - Review techniques of intraosseous, periodontal ligament, and intrapulpal injections.	- Lecture - Clinical Training	- Class Test - Quiz - Class Participation - Final Examination
10	Isolation, Endodontic Access, and Length Determination	- Discuss methods of isolation in endodontics with emphasis on rubber dam isolation. - Describe importance of pre-operative assessment as pre-requisite for treatment success. - Discuss the importance of pre-endodontic buildup. - Describe the objectives of access cavity preparation. - Describe the general principles of endodontic access cavity. - Describe the procedure, armamentarium and sequence for access cavity preparation. - Describe and draw outline of access cavity of each tooth. - Describe average length and canal configuration of various teeth. - Describe technique for locating canal orifices.	- Lecture - Clinical Teaching	- Class Test - Quiz - Class Participation - Individual Assignment - Final Examination

		- Identify errors during access and know how to correct them. - Describe various methods of working length determination.		
11	Cleaning and Shaping	- Describe why infection of pulp space is different from other tissues of body. - Identify purpose of cleaning the pulp space. - Describe purpose of shaping along with the mechanical objectives. - Understand and explain the concept of apical patency. - Describe basic and combined instruments movements. - Describe different techniques of canal preparation. - Explain step-back and crown-down technique. - Explain how to minimize preparation errors in curved canal. - Discuss management of calcified canals. - Discuss NiTi rotary instruments and its efficacy over SS files. - Explain the importance of irrigants. - List properties of an ideal irrigant and name various agents used. - Describe irrigation techniques that provide maximum irrigant effect.	- Lecture - Clinical Teaching	- Class Test - Quiz - Class Participation - Final Examination
12	Intra Canal Medicaments and Temporary Filling Materials	- Name different microorganisms involved in endodontic pathosis. - Define intra canal medicament. - Discuss the properties and role of intra-canal, inter-appointment medicaments. - Categorize and name various agents used as intra-canal medicament. - Describe the method of application and instruments used in intra-canal medication.	- Lecture	- Class Test - Class Participation - Final Examination

		- List temporary filling materials used and describe techniques for their placement and removal.		
13	Root Canal Obturation	- Describe the purpose of obturation and reasons why inadequate obturation may result in treatment failure. - Recognize the clinical criteria that determines time of obturation. - List the properties of ideal obturation material. - Name core obturation materials. - Describe the composition and properties of gutta percha. - Describe advantages and disadvantages of each core material. - List properties of ideal sealer and understand the need for using a sealer. - Name various types of sealers. - Name different types of obturation techniques. - Describe lateral condensation technique. - Describe briefly other techniques used for obturation. - Discuss the clinical and radiographic criteria for evaluating the quality of obturation.	- Lecture	- Quiz - Class Participation - Final Examination
14	Procedural Accidents	- Recognize procedural accidents and describe their causes, prevention and treatment during: o Access cavity preparation, o Cleaning and shaping, o Obturation. - Define and describe the following errors including their management: o Transportation, o Ledging,	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Individual Assignment - Final Examination

		○ Elbow, ○ Zipping, ○ Root perforations- apical, middle and coronal, ○ Separated instruments, ○ Aspiration and ingestion, ○ Hypochlorite accident, ○ Air Emphysema. - Discuss how procedural errors can affect the prognosis of treatment.		
15	Endodontic Emergencies	- Identify causes of emergencies before treatment, inter-appointment and after obturation. - Describe emotional status of emergency patient and explain how this complicates diagnosis and treatment. - Explain the importance of sequential approach to endodontic emergencies: ○ Determine source of pain, ○ Establish a pulpal and periapical diagnosis, ○ Design an emergency (short term) treatment plan, ○ Design a long term treatment plan. - Describe how to manage various endodontic emergencies including: ○ Painful irreversible pulpitis, ○ Necrotic pulp with acute apical periodontitis, ○ Acute apical abscess, ○ Acute apical periodontitis. - Recognize inter-appointment flareup and describe its	- Lecture - Tutorial/ Small Group Discussion	- Quiz - Class Participation - Final Examination

		management. - Recognize post-obturation flare up and describe its management. - Discuss pharmacological therapy used in emergency and its role in controlling pain and infection. - Understand the indications and contraindications for prescribing analgesics, antibiotics, anti-inflammatory agents and anxiolytics. - Discuss development of a treatment plan consisting of appropriate endodontic and pharmacologic strategies for managing pain, anxiety, and infection.		
16	Restoration of Endodontically Treated Tooth	- Explain why endodontically treated teeth are different from vital teeth. - Explain the importance of coronal seal. - Discuss options available for restoring endodontically treated teeth. - Explain ferrule effect. - Describe indications of post placement in anterior and posterior teeth. - Describe Nayyar Core. - Describe ideal dimensions of a post. - Describe common post systems, their advantages and disadvantages. - Describe method of placement of prefabricated and cast post. - Describe core materials and their placement. - Discuss complications that can occur during placement of post.	- Lecture - Tutorial/ Small Group Discussion	- Class Participation - Final Examination
17	Endodontic Considerations in Geriatric Patients	- Describe changes in pulp morphology with age. - Discuss special considerations when planning treatment for geriatric patients.	- Lecture	- Quiz - Class Participation - Final Examination

		- Identify management of the difficulties that can be encountered during root canal treatment of older patients.		
18	Nonsurgical Endodontic Retreatment	- State rationale and indications of endodontic retreatment. - Describe the alternates to endodontic retreatment. - Describe technique of accessing through extra coronal restorations. - Describe technique of removing crowns and posts. - Identify various types of canal obstructions and describe their management. - Describe the techniques for gutta percha removal. - Explain the role of intra-canal medicament in retreatment. - Discuss prognosis of retreatment.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination
19	Endodontic Surgery	- Discuss the role of endodontic surgery alone or in combination with nonsurgical root canal therapy. - Recognize situations when endodontic surgery is contraindicated. - Define the terms: o Incision for drainage, o Apical curettage, o Root-end resection, o Root-end preparation o Root-end filling, o Root amputation, o Hemisection, o Bicuspidization. - Discuss indications for the above mentioned procedures. - State principles of flap design. - Illustrate various flap designs. - Describe in brief, step by step procedures involved in peri-radicular surgery. - Discuss prognosis of endodontic surgical cases.	- Lecture	- Class Participation - Final Examination

20	Longitudinal Tooth Fractures	- Define and differentiate:
		  o Craze line,
		  o Cusp fracture,
		  o Cracked tooth,
		  o Split tooth,
		  o Vertical root fracture.
		- Describe the causes of these fractures of tooth structure.
		- Describe symptoms and clinical features of crack tooth.
		- Discuss the diagnosis, treatment, prognosis and prevention of a crack at various levels.
			- Lecture	- Quiz
				- Class Participation
				- Final Examination

21	Endodontic and Periodontal Inter Relationship	- Discuss possible paths of communication between pulpal and periodontal tissue. - Classify endodontic-periodontal lesions. - Discuss the differential diagnosis between lesions of endodontic or periodontal origin based on clinical, radiographic and histopathological features. - Discuss treatment options.	- Lecture	- Quiz - Class Participation - Final Examination

III. Course Topic: PAEDODONTICS

S. No.	Lecture Topic	Learning Objectives	Mode of Teaching	Assessment tools
01	Introduction to Paediatric Dentistry	- Discuss growth and development of jaws and dentition. - Understand the differences between permanent and primary teeth. - Discuss the chronology of development of primary and permanent dentition. - Discuss eruption timing and sequence of primary and permanent teeth.	- Lecture - Tutorial/ Small Group Discussion	- Final Examination
02	Pain and Anxiety Management of Paediatric Patient	- Enlist various pharmacological and non-pharmacological methods of pain and anxiety control. - Discuss different behavioral management strategies for pediatric patients. - Describe different sedation techniques for paediatric patients. - Discuss the dental management of children with special needs.	- Lecture	- Class Participation - Final Examination
03	Prevention of Dental Disease of Paediatric Patient	- Discuss the importance of a detailed medical and dental history for management of the paediatric patient. - Describe various medical conditions that may affect the management of paediatric patient. - Discuss effects of diet on dental tissues. - Describe various sources of sugars. - Discuss the effect of fluoride on dental caries process. - Explain the rationale for fluoride supplementation. - Describe different vehicles of fluoride delivery. - Describe correct tooth brushing	- Lecture - Tutorial/ Small Group Discussion	- Class Participation - Group Assignment - Final Examination

		technique. - Explain the importance of parental counseling. - Describe the importance of dietary management and home care in caries prevention. - Discuss the importance of regular dental follow-ups. - Understand the importance of fissure sealing and acid etch technique as a preventive measure. - Describe the placement of pit and fissure sealants and preventive resin restorations in primary teeth.		
04	Local Anesthesia Technique for Paediatric Patient	- Describe available topical anesthesia solutions. - Describe new techniques for achieving topical anesthesia. - List various techniques of local anesthesia administration. - Describe pain free anesthesia technique. - Discuss possible complications of local anesthesia.	- Lecture - Tutorial/ Small Group Discussion	- Class Participation - Final Examination
05	Restorative Dentistry for Paediatric Dentition	- Discuss methods to detect and diagnose dental caries in primary teeth. - Describe the pattern of early childhood caries and its management. - Discuss the radiographic views that are of value in diagnosing dental caries. - Explain the importance of isolation when restoring teeth. - Explain the importance of matricing in proximal decay. - Discuss restorative materials that can be used to restore a carious lesion. - Describe restoration of occlusal and proximal caries. - Describe the indications for stainless steel crowns and acrylic crowns.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination

		- Describe the technique for stainless steel crown and acrylic crown placement.		
06	Pulp Therapy for Primary and Young Permanent Teeth	- Understand the development of a tooth from its eruption to root maturation. - Explain the need to save a primary tooth. - Describe the importance of case assessment. - Describe the indications and contraindications of pulp therapy in deciduous teeth. - Describe the stabilization of mouth in case of rampant caries. - Describe the indications, contraindications and procedures in primary dentition for: o Pulp cap, o Pulpotomy, o Pulpectomy. - Describe indications, contraindications and procedure in young permanent dentition for: o Indirect pulp cap, o Direct pulp cap, o Cvekpulpotomy, o Apexogenesis, o Apexification. - Discuss the role of regenerative endodontics in the management of non-vital immature teeth.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination
07	Inherited Anomalies Of Enamel And Dentin	- Enlist various inherited enamel and dentin defects. - Recognize the clinical problems associated and treatment objectives with inherited enamel and dentin defects. - Discuss the etiology, prevention, clinical features and management of: o Amelogenesis Imperfecta	- Lecture	- Class Test - Class Participation - Final Examination

		○ Dentinogenesis Imperfecta ○ Molar Incisor hypoplasia.		
08	Periodontal Diseases in Paediatric Patient	- Classify periodontal diseases in children. - Discuss the etiology, clinical features and management of acute gingival conditions: ○ Primary herpetic gingivostomatitis ○ Necrotizing ulcerative gingivitis. - Discuss the etiology, clinical features and management of chronic gingivitis and periodontitis. - Discuss etiology, clinical features and management of drug induced gingival enlargement. - Discuss periodontal disease as a manifestation of various syndromes and systemic diseases in children.	- Lecture	- Class Test - Class Participation - Final Examination
09	Anomalies of Tooth Formation and Eruption	- Discuss the prevalence, etiology and management of variation in number of teeth. - Discuss various anomalies in tooth size and their management. - Discuss various anomalies of tooth form and their management. - Describe disturbances in eruption and exfoliation and its clinical significance.	- Lecture	- Class Test - Class Participation - Final Examination
10	The Paedodontic-Orthodontic Interface	- Understand the importance of screening patients for orthodontic referral at the correct time. - Define interceptive orthodontics. - Discuss the rationale and sequence of serial extractions. - Enlist and discuss various space maintainers used in mixed dentition.	- Lecture	- Class Test - Class Participation - Final Examination

		- Enlist and describe various habit breaking appliances in paediatric patients.		
11	Oral Surgery and Pathology in Paediatric Patients	- Discuss lesions affecting the oral soft tissues in children: o Infections, o Ulcers, o Vesiculobullous, o White lesions, o Cysts, o Tumors. - Discuss lesions affecting the jaws in children: o Cysts, o Developmental, o Osteodystrophies, o Tumors.	- Lecture	- Class Test - Class Participation - Final Examination
12	History and Examination of Patient with Dental Trauma	- Classify dento-alveolar injuries. - Understand the importance of a detailed history of trauma including past medical and dental history. - Enlist the questions to be inquired from a patient presenting with history of dental trauma. - Perform a thorough extraoral and intraoral examination. - Discuss the appropriate radiographs needed for an accurate diagnosis.	- Lecture - Tutorial/ Small Group Discussion - Clinical Teaching	- Class Test - Class Participation - Group Assignment - Final Examination
13	Injury to Tooth and Healing After Trauma	- Describe different types of healings. - Describe the healing of pulp and factors affecting its healing. - Describe the healing of periodontium and factors affecting its healing - Describe and differentiate between various types of root resorptions: o External resorption, o Cervical resorption, o Internal resorption, o Replacement resorption.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination
14	Injuries to	- Describe management of hard tissue injury in the following	- Lecture - Tutorial/	- Class Test - Class

	Primary Dentition	categories: o Uncomplicated crown fracture, o Complicated crown fracture, o Crown-root fracture, o Root fracture. - Describe management of soft tissue injury in following categories: o Concussion, o Subluxation, o Extrusive luxation, o Lateral luxation, o Intrusion, o Avulsion. - Describe the sequelae of injuries to the primary dentition.	Small Group Discussion	Participation - Final Examination
15	Injury to Permanent Dentition- Hard Tissue	- Describe management of hard tissue injury in the following categories: o Enamel infarction, o Enamel fracture, o Enamel-dentin fracture, o Complicated crown fracture, o Uncomplicated crown-root fracture, o Complicated crown-root fracture, o Root fracture. - Discuss the types and uses of splints. - Describe the duration of splint therapy in each injury. - Describe the procedure for placement of composite and wire splint.	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination
16	Injury to Permanent Dentition- Luxation and Avulsion	- Describe management of soft tissue injury in following categories: o Concussion, o Subluxation, o Extrusive luxation, o Lateral luxation, o Intrusion,	- Lecture - Tutorial/ Small Group Discussion	- Class Test - Class Participation - Final Examination

		○ Avulsion. - Describe duration of splint therapy in each injury. - Describe the rationale of delayed reimplantation of an avulsed tooth.		

IV. Course Topic: INDIRECT RESTORATIONS

S. No.	Lecture Topic	Learning Objectives	Mode of Teaching	Assessment tools
01	Review of Restorative Materials	- Discuss the composition, properties, merits and shortcomings of materials used for indirect restorations: o Metals, o Ceramics.	- Lecture - Tutorial/ Small Group Discussion	- Quiz - Class Participation - Final Examination
02	Partial Coverage Indirect Restorations	- Enlist various partial and full coverage indirect restorations. - Describe the principles of tooth preparation for indirect restorations. - Describe the indications and contraindications for provision of: o Inlay, o Onlay. - Describe the clinical assessment required and the steps of preparation for: o Inlay, o Onlay. - List materials available for these restorations. - Discuss soft tissue management and impression making for inlays and onlays. - Discuss laboratory steps for these restorations. - Enlist the materials used for cementation. - Describe the clinical procedure for cementation. - Discuss the latest innovations including CAD-CAM technology.	- Lecture	- Quiz - Class Participation - Final Examination
03	Porcelain Veneers	- Discuss indications and contraindications for veneers. - Describe the diagnostic procedures involved in treatment planning. - Explain the importance of quality and quantity of enamel for predictable bonding. - Describe tooth preparation, soft	- Lecture	- Class Test - Class Participation - Final Examination

		tissue management and impression making for veneers. - Describe methods of temporization. - Describe step by step procedure of veneer placement. - Describe the importance of silane coupling agent and hydro fluoric acid. - Identify techniques for intra oral repair of indirect restorations.		
04	Full Coverage Indirect Restorations	- Describe the indications and contraindications for: o Porcelain jacket crown, o Porcelain fused to metal crown, o All metal crown, o All ceramic crown. - Discuss factors influencing shade selection. - Describe guidelines for accurate shade matching. - Discuss various methods of shade selection. - Describe the clinical assessment required and the steps of preparation for: o Porcelain jacket crown, o Porcelain fused to metal crown, o All metal crown, o All ceramic crown. - List materials available for these restorations. - Discuss soft tissue management and impression making for full coverage restorations. - Discuss the indications, contra indications and technique for the use of electrosurgery. - Discuss laboratory steps for these restorations. - Enlist the materials used for cementation.	- Lecture	- Class Test - Class Participation - Final Examination

		- Describe the clinical procedure for cementation. - Discuss the latest innovations including CAD-CAM technology.		
05	Implant Supported Restorations	- Discuss indications and contraindications of implant supported restorations. - Describe various implant supported restorations that can be used for replacement of missing teeth.	- Lecture	- Class Test - Class Participation - Final Examination

RECOMMENDED BOOKS (Latest editions):

OPERATIVE DENTISTRY:

- Summit Fundamentals of Operative Dentistry
- Sturdevant's Art and Science of Operative Dentistry

ENDODONTICS:

- Endodontics: Principles and Practice (Torabinejad, Fouad & Walton)
- Harty's Endodontics in Clinical Practice
- Cohen’s Pathways of the Pulp

PEDIATRIC DENTISTRY:

- Pediatric Dentistry (Richard Welbury)

CROWNS AND BRIDGES:

- Planning and Making Crowns and Bridges (Bernard G N Smith)
- Contemporary Fixed Prosthodontics (Stephen F. Rosenstiel)
- Fundamentals of Fixed Prosthodontics (Shillingburg)

IMPLANTS:

- Contemporary Fixed Prosthodontics (Stephen F. Rosenstiel)