

Paper II: Technical Subject

1. Fundamentals of Operative Dentistry

- 1.1 Dental anatomy, histology, physiology and occlusion
 - 1.1.1 Clinical significance of histology during cavity preparation and restoration
 - 1.1.2 Maxilla and mandible
 - 1.1.3 fundamentals of occlusion
 - 1.1.4 Mechanics of mandibular movement
 - 1.1.5 Features of normal periodontium
- 1.2 Principles of tooth preparation, matricing, tooth separation including contacts and contours
- 1.3 Microleakage
 - 1.3.1 Microleakage and nanoleakage - Clinical importance
 - 1.3.2 Role of smear layer
- 1.4 Operative Instruments – hand and rotary instruments
- 1.5 Sterilization and infection control
- 1.6 Diagnosis and treatment planning - case history, clinical and radiographic examination
- 1.7 Management of Pain
- 1.8 Isolation of operating field

2. Carious and non carious lesions of teeth

- 2.1 Dental caries - Etiology, Pathophysiology, Histopathology and Microbiology, Clinical characteristics, recent advances in caries diagnosis, factors for caries risk assessment, modes of prevention of Dental Caries
- 2.2 Non carious lesions of teeth –Erosion, Abrasion, Abfraction, Attrition

3. Dentin hypersensitivity

- 3.1 Neurophysiology of teeth
- 3.2 Theories of dentin hypersensitivity
- 3.3 Management – interdisciplinary approach

4. Direct restorations

- 4.1 Dental amalgam – composition, classification, manipulation, cavity designs, mercury hazards, Complex amalgam restorations, controversies related to amalgam
- 4.2 Enamel and dentin adhesion - challenges in dentin bonding, development of adhesives

लोक सेवा आयोग

नेपाल स्वास्थ्य सेवा, डेन्टिस्ट्री समूह, इण्डोडोण्टिस्ट उपसमूह, नवौं (९) तहको खुला र आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

- 4.3 Composite Resin - composition, classification, manipulation, cavity designs, Repair of defective composite restorations, Common problems with composite and its management, new advances in composite
 - 4.4 Glass ionomer Cement - composition, classification, manipulation, Newer advances in GIC
 - 4.5 Direct filling gold - Tooth preparation and restoration, Stress during compaction and Pulp protection
 - 4.6 Complex restorations – classification, principles, and complications related to pin retained restorations
5. **Indirect restorations**
- 5.1 Cast metal restorations – materials, Principles of tooth preparation, impression making and casting, Casting defects, Pin retained cast restoration, Biologic consideration
 - 5.2 Indirect Resin restorations – materials, Composite inlays and onlays
 - 5.3 Dental ceramic - materials and procedure for Ceramic inlays and onlays, repair
6. **Esthetic restoration**
- 6.1 Esthetics – Introduction, factors governing esthetics, Principles of smile design
 - 6.2 Conservative esthetic treatment - Micro abrasion and macro abrasion, vital tooth and non-vital tooth Bleaching
 - 6.3 Veneers – Materials, direct and indirect veneer techniques, Repair
7. Minimal Intervention Dentistry - ART, LSTR, Remineralization therapy, Instruments and materials used for MID
8. Fundamentals of Endodontics - Rationale of Endodontics and role of endodontic therapy in dentistry
9. Histological & anatomical structure of pulp & periradicular tissues
10. Pathologies of pulp and Periradicular tissues
11. Diagnosis in Endodontics - Case History, Various techniques of Pulp Vitality Tests with recent advances, Description of Odontogenic and Non Odontogenic pain
12. Internal Anatomy of root canal system
13. **Root Canal Therapy**
- 13.1 Access cavity preparation
 - 13.2 Working length determination
 - 13.3 Cleaning and shaping of root canal system
 - 13.4 Irrigation of root canal system
 - 13.5 Obturation of root canal system

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14. Post Endodontic Restoration - effects of Endodontic treatment on the tooth, various Post systems, Describe the instruments used for preparing post space, reasons for post failure and its management
15. Endodontic Surgery
16. **Interdisciplinary approach in Restorative Dentistry and Endodontics**
 - 16.1 Relationship with Periodontics
 - 16.2 Relationship with Orthodontics
 - 16.3 Relationship with Prosthodontics
 - 16.4 Endodontic microbiology
 - 16.5 Endodontic pharmacology
 - 16.6 Pediatric Endodontics
17. **Traumatic Injury**
 - 17.1 Classification of Dentoalveolar fracture
 - 17.2 Protocol for examination and management of traumatic injury
 - 17.3 Prevention of traumatic injury
18. Procedural Accidents including Vertical root fracture - Classification and Management
19. **Endodontic Emergencies**
 - 19.1 Diagnosis & treatment planning
 - 19.2 Analgesics and antibiotics used in Endodontic Emergencies
20. **Endodontic Failure and Retreatment**
 - 20.1 Evaluate success of Endodontic treatment
 - 20.2 Causes of the Endodontic Failures and its prevention
 - 20.3 Case selection for Retreatment
21. **Recent advances in Conservative and Endodontics**
 - 21.1 Lasers in Conservative and Endodontics
 - 21.2 Magnification and illumination
 - 21.3 Dental Implant
 - 21.4 Tissue engineering and regenerative endodontics
