

**BHARATI VIDYAPEETH  
(DEEMED TO BE UNIVERSITY), PUNE, INDIA  
PhD Entrance Test – 2025**

**SECTION-II: CONSERVATIVE DENTISTRY AND ENDODONTICS - 35 Marks**

**Dental material science:**

1. Physical and mechanical properties of dental materials and biocompatibility.
2. Impression materials, detailed study of various restorative materials, restorative resin and recent advances in composite resins, bonding – recent development , Dental Amalgam, Direct filling Gold, Casting alloys, Inlay wax, investment, casting procedures, defects, dental cements for restoration and pulp protection (luting, liners, bases) cavity varnishes.
3. Dental ceramics – recent advances, finishing and polishing materials.

**Conservative dentistry**

1. Occlusion as related to conservative dentistry, contact, contour, its significance. Separation of teeth, matrices used in conservative dentistry.
2. Dental caries – epidemiology, recent concept of etiological factors, pathophysiology, histopathology, diagnosis, caries activity tests, prevention of dental caries and management –recent methods.
3. Hand and rotary cutting instruments, development of rotary equipment, speed ranges, hazards.
4. Infection control procedures in conservative dentistry, isolation equipments etc.
5. Concepts in tooth preparation for amalgam, composite, GIC and restorative techniques, failures and management, Direct and indirect composite restorations, Indirect tooth colored restorations – ceramic, inlays and Onlays, veneers, recent advances in fabrication and materials,
6. Cast metal restorations, tooth preparation for Class II inlay, onlay full crown restorations. Tissue management, Impression procedures used for indirect restorations, Restorative techniques, direct and indirect methods of fabrication of restorations.
7. Management of non- carious lesion.
8. Hypersensitivity, theories, causes and management.
9. Principles of esthetic-Color, Facial analysis, Principles of esthetic integration, Treatment planning in esthetic dentistry.

**Endodontics**

1. Rationale of endodontics
2. Dentin and pulp complex, Pulp and periapical pathology, Pathobiology of periapex.

3. Diagnostic procedure in Endodontics
4. Access cavity preparation – objectives and principles, Endodontic instruments and instrumentation, Working length determination / cleaning and shaping of root canal system and recent development in techniques of canal preparation, Root canal irrigants and intra canal medicaments used including non- surgical endodontics by calcium hydroxide, Single visit endodontics, current concepts and controversies
5. Obturating materials, various Obturation techniques and recent advances in Obturation of root canal.
6. Traumatic injuries and management – endodontic treatment for young Permanent teeth. Pediatric endodontics – treatment of immature apex.
7. Endodontic surgeries
8. Endodontic emergencies and management.
9. Lasers in Endodontics.
10. Failures in Endodontics

#### **REFERENCE BOOKS:**

1. Anusavice K.J. Phillips: Science of Dental Materials
2. Grossman L.J: Endodontic Practice
3. Ingle J.I: Endodontics
4. Roberson T.M: Sturdevents Operative Dentistry 4th ed.
5. Charbeneau G.J: Principle of practice of operative dentistry
6. Cohen Stephen: Pathways of the pulp 9th ed.