Contents

1. Introduction 1-12
Nomenclature and Differences in Teeth 1
Important Descriptive Landmarks on the Tooth Surface 1
Structure of Tooth 5
Life Cycle of a Tooth—The Crown and Root 6
Dental Tissues 7
Junctions of Tooth Tissues 10
Anatomic and Clinical Crown 10
Oral Physiology and Importance of its Study 11
Organization of the Functions of the Oral Cavity 11

2. Oral Examination 13-25
Introduction 13
Normal Anatomy of the Oral Cavity 13
Intraoral Examination 15
Surface Anatomy and Location of Structures that can be Palpated Extraorally 24

3. Dental Anthropology (Comparative Study of Dentition) 26-35
Introduction 26
Evolution of the Jaws 26
Dentition in Vertebrates 27
Dentition of Primates 31

4. Development and Eruption of Teeth 36-47
Introduction 36
Development 36
Eruption 38

5. Tooth and Surface Identification 48-55
Introduction 48
Nomenclature and Tooth Identification Systems 48
Different Surfaces of the Teeth 52
Line Angles and Point Angles 55

6. Drawing and Carving of Teeth 56-62
Introduction 56
Method of Measurement of Teeth 56
Drawing an Individual Tooth 59
Carving an Individual Tooth 60

7. Deciduous (Primary) Teeth 63-87
Introduction 63
Importance of Deciduous Dentition 63
Difference between Deciduous and Permanent Dentition 64
Occlusion of Deciduous Teeth 86

8. Physiology of Dentition 88-93
Introduction 88
Alignment and Contacts 88
Interproximal Form 88
Root Form 89
Occlusal and Dental Arch Compensating Curvatures 89
Tooth Form and Jaw Movements 91
Concept of Crown Outline 92

9. Physiologic Form of Teeth in Relation to Functions and Periodontium 94-106
Introduction 94
Proximal Contact Areas 94
Interproximal Spaces 97
Embrasures (Spillways) 98
Facial and Lingual Contours of the Crowns. 102
The Cervical Lines on Mesial and Distal Surfaces (Cemento-Enamel Junction) 104
The Height of Epithelial Attachment 104

10. Permanent Maxillary Incisors 107-118
Introduction 107
Functions 107
Morphology and General Outline of Maxillary Central Incisors 107
Characteristics of All Incisors 108
Arch Characteristics 111
Description of Permanent Maxillary Central Incisors 111
Description of Permanent Maxillary Lateral Incisors 115

11. Permanent Mandibular Incisors 119-126
Introduction 119
Mandibular Central Incisors 119
Mandibular Lateral Incisors 123
Variations in Mandibular Incisors 126

12 Permanent Canines 127-136
Introduction 127
Functions 127
General Characteristics of Canines of Both the Arches 128
Maxillary Canines 128
Mandibular Canines 132
Variations 136

13. Maxillary Premolars 137-147
Introduction 137
Functions 137
Comparison of Morphology of Premolars to Anterior Teeth 137
Common Characteristics of All Premolars 138
Maxillary First Premolar 141
Maxillary Second Premolar 143
Distinguishing Features Between First and Second Maxillary Premolars 147
Distinguishing Features and Similarities Between Right and Left Maxillary First and Second Premolars 147
Variations 147

14. Mandibular Premolars 148-159
Introduction 148
Mandibular First Premolar 148
Mandibular Second Premolar 153

15. Permanent Maxillary Molars 160-171
General Description 160
Maxillary First Molar 161
Maxillary Second Molar 166
Maxillary Third Molar 169

16. Permanent Mandibular Molars 172-183
Introduction 172
Mandibular First Molar 172
Mandibular Second Molar 177
Mandibular Third Molar 181

17. Pulp Cavities of the Teeth 184-208
Introduction 184
Pulp Cavities of Maxillary Teeth 186
Pulp Cavities of Mandibular Teeth 193

18. Basic Concept of Occlusion and Malocclusion 209-231
Introduction 209
Development of Occlusion 209
Dental Arch Form 212
Compensating Occlusal Curvatures and Planes of Dental Arches 212
Jaw Relationships—The Relationship of the Mandible to the Maxillae 213
Angulation of Individual Teeth and Root Shape in Relation to Various Planes 215
Shape of Incisal and Occlusal Thirds of Teeth To Suit the Various Functions 217
In Centric Occlusion—Facial and Lingual Relations of Individual Tooth to its Antagonists in the Opposite Arch 218
In Centric Occlusion—Occlusal Contacts and Intercuspal Relationships of Individual Tooth of one Arch to that of Opposite Arch 220
During the Various Mandibular Positions and Movements Occlusal Contacts and Intercusp Relations of all the Teeth 225
Neurobehavioral Aspects of Occlusion/Stomatognathic System 227
Occlusal Stability 229
Guidance of Occlusion 229
Vertical Dimension 229
Oral Motor Behavior 230
Types of Malocclusion 230

19. Dento-osseous Structures 232-245
Maxillae 232
Maxillary Sinus 239
Mandible 242

20. Temporomandibular Joints and Their Functions 246-256
Introduction 246
Anatomy of the Temporomandibular Joint 246
Development of the Temporomandibular Joint 248
Ligaments 249
Blood Supply and Nerve Supply 249
Muscle Functioning of Temporomandibular Joint 250
Normal Movements Within the Temporomandibular Joint 252
Act of Chewing 254

21. Oral Physiology of Dental Pain 257-261
Oral Physiology 257
Pulpal Pain 258
Mechanoreceptors 259
Kinesthesia 260
Thermal Receptors 260

22. Special Oral Functions 262-271
Salivary Secretion 262
Mastication 264
Taste 266
Swallowing 270
Speech 271

Multiple Choice Questions 273

Index 291