

**SECTION-II: ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS - 50 Marks**

**I. Applied Anatomy:**

- Prenatal growth of head:  
Stages of embryonic development, origin of head, origin of face, origin of teeth.
- postnatal growth of head:  
Bones of skull, the oral cavity, development of chin, the hyoid bone, general growth of head, face growth.
- Bone growth:  
Origin of bone, composition of bone, units of bone structure, schedule of ossification, mechanical properties of bone, roentgen graphic appearance of bone
- Assessment of growth and development:  
Growth prediction, growth spurts, the concept of normality and. growth increments of growth, differential growth, gradient of growth, methods of gathering growth data. Theories of growth and recent advances , factors affecting physical growth.
- Muscles of mastication:  
Development of muscles, muscle change during growth, muscle function and facial development, muscle function and malocclusion
- Development of dentition and occlusion:  
Dental development periods, order of tooth eruption, chronology of permanent tooth formation, periods of occlusal development, pattern of occlusion.
- Assessment of skeletal age.  
The carpal bones, carpal x - rays, cervical vertebrae

**II. Physiology:**

Endocrinology and its disorders  
Calcium and its metabolism  
Nutrition-metabolism and their disorders  
Muscle physiology  
Craniofacial biology  
Bleeding Disorders

**III. Applied dental materials, orthodontic wires, elastic etc.**

**IV. Applied genetics and physical anthropology**

**V. Applied pharmacology**

**VI. Concepts of occlusion and esthetics**

**VII. Etiology and classification of malocclusion:**

**VIII. Dentofacial anomalies**

**IX. Child and adult psychology**

**X. Diagnostic procedures cephalometric and treatment planning in orthodontics.**

**XI. Clinical orthodontics:**

Removable appliances, Myofunctional Orthodontics, Fixed appliances.

**XII. Dentofacial orthopedics**

**XII. Cleft lip and palate rehabilitation**

**XIV. Biology of tooth movement**

**XV. Orthodontic / orthognathic surgery**

**XVI. Ortho - perio - prosth/restorative inter relationship**

**XVII. Preventive and interceptive orthodontics.**

**XVIII**

- Anchorage considerations in Orthodontics.
- Temporomandibular Joint in Health and Disease.

**XIX. Recent advances like**

Use of implants

Lasers

Application of Finite Element Method(F.E.M)

Distraction Osteogenesis

**REFERENCE BOOKS:**

1. Orthodontics Principles and Practice: Graber T.M.; 3<sup>rd</sup> edition
2. Contemporary Orthodontics: Proffit W.R: 2nd ed.
3. Orthodontics Principles and Practice:Graber:3rd ed.
4. Management of Temporomandibular Disorder's and Occlusion: Okeson J.P.
5. Systemized Ortho-treatment Mechanics: Mclaughlin Bennett
6. Dentofacial Orthopedics with Functional Appliance: Graber T.M