



SAUDI BOARD RESIDENCY TRAINING PROGRAM

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Part One Examination

Examination Format:

Part I Examination of Saudi board certificate shall consist of one paper with 150 Single Best Answer MCQs. Up to 10% unscored items can be added for pretesting purposes.

Passing Score:

1. The passing score is 65%.
2. If the percentage of candidates passing the exam before final approval is less than 70%, the passing score can be lowered by one mark at a time aiming at achieving 70% passing rate or a score of 60% whichever comes first. Under no circumstances, may the score can be reduced below 60%.





Suggested References:

1. Proffit WR. Contemporary orthodontics. 6th edition, St. Louis, MO, USA, Mosby, Inc.
2. Radiographic cephalometry from basics to 3-D imaging, Alexander Jacobson, Richard Jacobson, second edition
3. **Integrated Basic Science I references:**

ORAL BIOLOGY (HISTOLOGY & PHYSIOLOGY):

1. Biological changes in PDL and bone during orthodontic treatment

Textbooks

- Graber L, Vanarsdall R, Vig KWL, Huang GJ: Orthodontics: Current Principles and Techniques, ed 7, Mosby, 2017. **Chapter 3**
- Proffit WR, Fields HW, Larson BE, et al: Contemporary Orthodontics, ed 6, Elsevier, 2019. **Chapter 8**
- Nanci A: Ten Cate's Oral Histology: Development, Structure, and Function, ed 9, Mosby, 2018. **Chapter 1, Chapter 6 and Chapter 9**

Journal Articles

- Huang H, Williams RC, Kyrkanides S: Accelerated orthodontic tooth movement: molecular mechanisms. American Journal of Orthodontics and Dentofacial Orthopedics 146(5): 620-632, November 2014.
- Li Y, Jacox LA, Little SH, Ko C-C: Orthodontic tooth movement: the biology and clinical implications. Kaohsiung Journal of Medical Sciences 34(4): 207-214, April 2018.
- Melsen B: Biological reaction of alveolar bone to orthodontic tooth movement. The Angle Orthodontist 69(2): 151-158, April 1999.

2. Histology of the cementum and root resorption in orthodontics

Textbooks

- Graber L, Vanarsdall R, Vig KWL, Huang GJ: Orthodontics: Current Principles and Techniques, ed 7, Mosby, 2017. **Chapter 3**
- Proffit WR, Fields HW, Larson BE, et al: Contemporary Orthodontics, ed 6, Elsevier, 2019. **Chapter 8**





Journal Articles

- Weltman B, Vig KWL, Fields HW, et al: Root resorption associated with orthodontic tooth movement: a systematic review. American Journal of Orthodontics and Dentofacial Orthopedics 137(4): 462-476, April 2010
- Tronstad L: Root resorption-etiology, terminology and clinical manifestations. Dental Traumatology 4(6): 241-252, December 1988.

3. Microanatomy and ultrastructure of the gingiva and how it is affected during orthodontic treatment

Textbooks

- Nanci A: Ten Cate's Oral Histology: Development, Structure, and Function, ed 9, Mosby, 2018. **Chapter 12**
- Carranza's Clinical Periodontology, 10th edition. **Chapter 4, Chapter 5, Chapter 11, Chapter 21, Chapter 23, Chapter 29, Chapter 35, Chapter 39**
- Orban's Oral Histology, 13th edition, **Chapter 10.**

Journal Articles

- Mathews DP and Kokich VG: Managing treatment for the orthodontic patient with periodontal problems. Seminars in Orthodontics 3(1): 21-38, March 1997.

4. Response of the oral tissues to systemic conditions and drugs

Journal Articles

- Gameiro GH, Pereira-Neto JS, Magnani MB, Nouer DF. The influence of drugs and systemic factors on orthodontic tooth movement. J Clin Orthod. 2007;41(2):73-8.
- Kamatchi Diravidamani, Sathesh Kumar Sivalingam, and Vivek Agarwal. Drugs influencing orthodontic tooth movement: An overall review. J Pharm Bioallied Sci. 2012;4(Suppl 2):S299-S303.
- Zahrowski JJ: Biphosphonate treatment: an orthodontic concern calling for a proactive approach. American Journal of Orthodontics and Dentofacial Orthopedics 31(3): 311-320, March 2007.
- Titas A and Ferguson MM: Impact of opioid use on dentistry. Australian Dental Journal 47(2): 94-98, June 2002.
- Gupta B, Singh S, Tallents RH, et al: Effects of bisphosphonates on orthodontic treatment and the TMJ: a systemic review. Journal of Clinical Orthodontics 51(8): 471-478, August 2017.





Articles Related to Biology of Tooth Movement & Tissue Reaction

- Ren Y1, Maltha JC, Kuijpers-Jagtman AM. Optimum force magnitude for orthodontic tooth movement: a systematic literature review. Angle Orthod. 2003;73(1):86-92.
- Proff P, Römer P. The molecular mechanism behind bone remodelling: a review. Clin Oral Investig. 2009;13:355-362.
- Von Böhl M, Kuijpers-Jagtman AM. Hyalinization during orthodontic tooth movement: A systematic review of tissue reactions. Eur J Orthod. 2009;31:30-36.

GENETICS:

Part 1

Textbooks

- Graber L, Vanarsdall R, Vig KWL, Huang GJ: Orthodontics: Current Principles and Techniques, ed 7, Mosby, 2017. **Chapter 2**
- Proffit WR, Fields HW, Larson BE, et al: Contemporary Orthodontics, ed 6, Elsevier, 2019. **Chapter 5**

Journal Articles

- Suri L, Gagari E, Vastardis H: Delayed tooth eruption: pathogenesis, diagnosis, and treatment. A literature review. American Journal of Orthodontics and Dentofacial Orthopedics 126(4): 432-445, October 2004.
- Witkop CJ: Amelogenesis imperfecta, dentinogenesis imperfect and dentin dysplasia revisited: problems in classification. Journal of Oral Pathology & Medicine 17(9-10): 547-553, November 1988.

Part 2

Textbooks

- Graber L, Vanarsdall R, Vig KWL, Huang GJ: Orthodontics: Current Principles and Techniques, ed 7, Mosby, 2017. **Chapter 2**
- Proffit WR, Fields HW, Larson BE, et al: Contemporary Orthodontics, ed 6, Elsevier, 2019. **Chapter 5**
- Sperber GH and Sperber SM: Craniofacial Embryogenetics and Development, ed 3, PMPH USA Ltd, 2019. **Chapter 20**
- Robert Moyers. Handbook of orthodontics. **Chapter 3**





Journal Articles

- Chai Y, Jiang XB, Ito Y, et al: Fate of the mammalian cranial neural crest during tooth and mandibular morphogenesis. Development 127(8): 1671-1679, April 2000.
- Juan Daia, Bakr M. Rabie. Gene Therapy to Enhance Condylar Growth Using rAAV-VEGF. Angle Orthodontist. 2008;78(1):89-93.
- Vagish Kumar L S. Gene Therapy: Principles and Applications in Dentistry. Research and Reviews: Journal of Dental Sciences. 2014;2(1):5-12.
- N. Zhao, Y. Liu, H. Kanzaki, W. Liang, J. Ni J. Lin. Effects of local osteoprotegerin gene transfection on orthodontic root resorption during retention: an in vivo micro-CT analysis. Orthodontic and Craniofacial research. 2012;15:10-20.
- H. Kanzaki¹, M. Chiba. Takahashi, N. Haruyama, M. Nishimura, H. Mitani. Local OPG gene transfer to periodontal tissue inhibits orthodontic tooth movement. J Dent Res. 2004;83(12):920-925.
- Nida Siddique, Hira Raza, Sehrish Ahmed, Zohaib Khurshid, Muhammad Sohail Zafar. Gene Therapy: A Paradigm Shift in Dentistry. Genes. 2016;7:98.1-12.
- ABM Rabie, J Dai, R Xu. Recombinant AAV-mediated VEGF gene therapy induces mandibular condylar growth. Gene Therapy. 2007;14:972-980.

Part 3

- H. Egusa et al. Stem cells in dentistry--part I: stem cell sources. Journal of Prosthodontic Research. 2012;56:151-165.
- H. Egusa et al. Stem cells in dentistry--part II: Clinical applications. Journal of Prosthodontic Research. 2012;56:229-248.
-

4. Integrated Basic Science II:

ORAL PATHOLOGY:

Neville BW, Damm DE, Allen CM, et al: Oral and Maxillofacial Pathology, ed 4, Elsevier, 2016.

EMBRYOLOGY:

1. Barry Mitchell and Ram Sharma. Embryology: An Illustrated Colour Text, 2nd edition. Edinburgh: Churchill Livingstone, 2009. (ISBN: 0702032255)
2. Keith L Moore, TVN Persaud, Mark G Torchia. The Developing Human: Clinically-Oriented Embryology, 9th edition. Philadelphia: Saunders, 2011. ISBN: 1437720021)





ANATOMY:

1. Cunningham's Manual of Practical Anatomy: Volume III: Head, Neck and Brain (Oxford Medical Publications) - G. J. Romanes, 15th edition, 1986.
2. Gray's Anatomy: The Anatomical Basis of Clinical Practice, Expert Consult - Online and Print, 40e - Susan Standring. Churchill Livingstone, 2008.
3. Last's Anatomy: Regional and Applied - Chummy S. Sinnatamby. Churchill Livingstone, 2011.

5. Advanced Oral & Maxillofacial Radiology:

Textbooks:

1. Mallya, S., & Lam, E. (2018). White and Pharoah's Oral Radiology: Principles and Interpretation (8th ed. **Chapters 8-13**). Mosby.

Articles

1. Okano T, Sur J. Radiation dose and protection in dentistry. Japanese Dental Science Review. 2010 Aug 1;46(2):112-21.
 2. Mettler Jr FA, Huda W, Yoshizumi TT, Mahesh M. Effective doses in radiology and diagnostic nuclear medicine: a catalog. Radiology. 2008 Jul;248(1):254-63. <https://pubs.rsna.org/doi/10.1148/radiol.2481071451>
 3. Brooks SL, Brand JW, Gibbs SJ, Hollender L, Lurie AG, Omnell KÅ, Westesson PL, White SC. Imaging of the temporomandibular joint: a position paper of the American Academy of Oral and Maxillofacial Radiology. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology. 1997 May 1;83(5):609-18. [https://www.oooojournal.net/article/S1079-2104\(97\)90128-1/fulltext](https://www.oooojournal.net/article/S1079-2104(97)90128-1/fulltext)
 4. Clinical recommendations regarding use of cone beam computed tomography in orthodontics. Position statement by the American Academy of Oral and Maxillofacial Radiology. (2013). Oral Surgery Oral Medicine Oral Pathology and Oral Radiology,116(2), 238-257. <https://doi.org/10.1016/j.oooo.2013.06.002>
6. **Professionalism and Ethics**, Handbook for Residents, Practical guide, Prof. James Ware, Dr. Abdulaziz Fahad Alkaabba, Dr. Ghaiath MA Hussein, Prof. Omar Hasan Kasule, SCFHS, Latest Edition.
 7. **Essentials of Patient Safety**, SCHS, Latest Edition.

Note:

This list is intended for use as a study aid only. SCFHS does not intend the list to imply endorsement of these specific references, nor are the exam questions necessarily taken solely from these sources.





Blueprint Outlines:

No.	Sections	Percentage
1	The Development of orthodontic problems	10%
2	Diagnosis and Treatment planning	15%
3	Biomechanics, Biomaterials, and contemporary orthodontic appliance	14%
4	Treatment in preadolescent children	12%
5	Growth modification	12%
6	Comprehensive Orthodontic in early permanent dentition	12%
7	Treatment for adults	10%
8	Integrated Basic Science Course 1	5%
9	Integrated Basic Science Course 2	5%
10	Advanced oral and maxillofacial radiology	5%
Total		100%

Note:

- Blueprint distributions of the examination may differ up to $\pm 5\%$ in each category.
- Percentages and content are subject to change at any time. See the SCFHS website for the most up-to-date information.
- Research, Ethics, Professionalism and Patient Safety are incorporated within various domains.

