



## THE COLLEGES OF MEDICINE OF SOUTH AFRICA

Incorporated Association not for gain  
Reg No 1955/000003/08

### Part I Examination for the Fellowship of the College of Dentistry of South Africa



24 March 2015

Paper 2

(3 hours)

*All questions are to be answered. Each question to be answered in a separate book (or books if more than one is required for the one answer)*

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- 1 Discuss the physiology of nerve transmission and how an ulcer in the mouth is perceived as painful by the brain. [25]
- 2 Discuss the composition, function and mechanism of secretion of human saliva. [25]
- 3 Discuss the cellular and biomechanical aspects of bone remodelling and repair. [25]
- 4 Adrenaline plays a major role in the physiology of the patient undergoing dental procedures. Discuss adrenaline under the following headings  
a) Synthesis, metabolism and receptor occupation. (5)  
b) Physiological effects on the following  
i) Central nervous system.  
ii) Cardiovascular system.  
iii) Musculo-skeletal system.  
iv) Respiratory system.  
v) Gastro-intestinal system.  
vi) Carbohydrate metabolism.  
vii) Fat metabolism. (20)  
[25]
- 5 Discuss the physiology of white blood cells by referring to  
a) Types of cells. (10)  
b) Functions of each cell type. (10)  
c) Pathophysiology. (5)  
[25]
- 6 Discuss in detail the role of blood platelets in haemostasis. [25]



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25 March 2015

Paper 3

(3 hours)

*All questions are to be answered. Each question to be answered in a separate book (or books if more than one is required for the one answer)*

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- 1 Describe and compare the nature, role and microscopic features of granulation tissue and granulomatous tissue. Use key oral lesion examples to illustrate your answer. [25]
- 2 List and write a brief descriptive / explanatory overview on the 10 fundamental changes in cell physiology, the so-called hallmarks of cancer (including the “emerging” hallmarks and enabling characteristics) which together dictate the malignant phenotype of cancer cells. Limit your answers to the key facts and the most relevant gene mutations. [25]
- 3 Briefly describe the aetiopathogenesis of
  - a) Embolism and it’s complications. (12.5)
  - b) Dystrophic calcification. (12.5)[25]
- 4 Discuss cutaneous wound healing by referring to
  - a) Healing by first intention. (6)
  - b) Healing by second intention. (6)
  - c) Wound strength. (3)
  - d) Pathologic aspects of repair. (10)[25]
- 5 Discuss the health effects of tobacco. [25]
- 6 Discuss paraneoplastic syndromes by referring to
  - a) Definition. (3)
  - b) Clinical syndromes. (11)
  - c) Major forms of underlying causes and mechanisms. (11)[25]