

PRIMARY EXAMINATION

PHYSIOLOGY

December 2001

Time allowed: Two hours

INSTRUCTIONS TO CANDIDATES

Answer three (4) of the following (6) questions. (If you answer more than three questions, only the first three answers will be marked).

Each question is of equal value, namely, 25% of the total for the written paper.

Ample time is allowed for your answers, so please try to present your answers in a well – organized manner. Diagrams may be used to illustrate your answers.

Allow time at the end of the examination to read your answers carefully.

Question 1

(30 minutes: 25 marks)

The masticatory system is adapted to a number of functions including chewing and speech. Describe the neural mechanisms that control the muscles of mastication during chewing food of varying consistency.

Question 2

(30 minutes: 25 marks)

Post-trauma pain and post-operative pain in the trigeminal system are part the result of changes in the excitability of circuits in the brain. Describe this mechanism. Include in your answer a discussion of the relevance of this information to dental practice.

Question 3

(30 minutes: 25 marks)

Extraction of a tooth is followed by bleeding that normally ceases in less than one hour. Discuss the mechanisms that bring about this cessation of bleeding. Include in your answer a brief discussion of conditions in which bleeding may be prolonged.

Question 4

(30 minutes: 25 marks)

Sjogren's syndrome is a condition which is the result of auto-immune attack on the salivary glands. List the probable consequences of the loss of saliva to oral health and in a patient with this disorder. Give the reasons for each of these consequences.

Question 5**(30 minutes: 25 marks)**

Write brief notes on all of the following:

1. the mechanism of action of local anaesthetic drugs and the vasoconstrictors that are included with many of them.
2. control of breathing
3. the spread of excitation through the heart and its relationship to contraction of the various chambers of the heart.

Question 6**(30 minutes: 25 marks)**

Osteoporosis is a major cause of disability in our population.

- a) What are the major factors for osteoporosis?
- b) What are the implications of osteoporosis in dentistry?
- c) What advice would you give to an apparently healthy patient who you believed to be at risk for osteoporosis? Give your reasons.

End of Paper