



ROYAL AUSTRALASIAN COLLEGE
OF
DENTAL SURGEONS
INCORPORATED
ABN 97 343 369 579

**PRIMARY EXAMINATION IN
MICROBIOLOGY**

Wednesday 29 November 2006

Time allowed: Two hours

INSTRUCTIONS TO CANDIDATES

The complete examination in Microbiology is in two parts:
This paper is worth 75% of the final mark;
The viva is worth 25% of the final mark.

This examination consists of three sections, with a choice of questions in each section.

Answer only **ONE** (1) question from Section A.

Answer only **ONE** (1) question from Section B.

Answer only **THREE** (3) questions from Section C.

Candidates must answer Section A in a separate booklet.

The remaining 4 questions from Sections B and C may be answered in the one answer booklet.

Each question is worth 15 marks, thus for a total of 5 questions: 75 marks.

Part A. Answer only ONE question in this part.

Write your answer for Part A in a separate examination booklet.

A1. Describe how bacteria from the oral cavity can contribute to diseases at other sites, using both infective endocarditis and infection of a prosthetic joint as examples. Include in your answer how these problems can be minimized.
(15 marks)

OR

A2. Current thinking has linked some systemic health conditions with periodontitis. Give an example of such a condition, and explain the link between periodontal bacteria, the immune response which they elicit, and the systemic health condition. **(15 marks)**

~~~ END OF PART A ~~~



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**written paper continued**

**Part B. Answer only ONE question in this part.**

**Your answers to Parts B and C must be written in a separate examination booklet from Part A.**

B1. Describe in detail, using tables as appropriate, how chemical indicators are used to monitor the performance of an autoclave in everyday dental practice. Make specific reference to the types of indicators which would be used for wrapped and for unwrapped cycles, for both gravity and pre-vacuum types of autoclaves.

**(15 marks)**

OR

B2. Describe the different types of autoclaves used in dental practice with specific reference to the methods used to remove air from the chamber. Include in your answer relevant advantages and disadvantages of the various methods. **(15 marks)**

**Part C. Answer only THREE of the FIVE questions in this part.**

C1. Based on your knowledge of the immune response to infection, explain why patients with AIDS develop characteristic infections. Include in your answer three examples, with one drawn from each of the following three categories: bacterial infection, fungal infection, and viral infection. **(15 marks)**

C2. Outline a number of strategies for preventing dental caries, which are based upon the concept of dental caries as a microbial disease. Include in your answer strategies that prevent plaque biofilm formation, as well as those that modify such biofilms. **(15 marks)**

C3. Explain the role of bacteria and their products in periodontal and endodontic infections. What similarities exist between these in terms of aetiology and treatment? **(15 marks)**

~~~ Part C continued ~~~~



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written paper continued

Part C continued...

C4. With regard to Hepatitis C (HCV) infection,

- (a) What laboratory test results would indicate that a patient had chronic infection?
- (b) List the oral and general health consequences of chronic hepatitis C infection.
- (c) List the factors that influence whether a dental staff member will contract hepatitis C following a local anaesthetic needle-stick type injury to the hand during the course of dental treatment for a hepatitis C positive patient.
- (d) What therapy could be considered if the injured staff member contracted the infection? **(15 marks)**

C5. Describe how a patient's lifestyle habits (including diet) can affect his/her salivary parameters, and thereby influence the oral microflora. What is the relevance of this to dental caries? **(15 marks)**

This is the last page of this examination paper