

PRIMARY EXAMINATION

MICROBIOLOGY

Thursday 6 December 2001

Time allowed: Two hours

INSTRUCTIONS TO CANDIDATES

Answer any ONE (1) question from Section A.

Answer any TWO (2) questions from Section B.

Answer any TWO (2) questions from Section C.

Candidates may answer all 5 questions in one answer booklet. The mark values are as shown for the questions in each section. Maximum marks = 75. As a guide, allow approximately 24 minutes to answer each of the 5 questions selected.

Section A. (Answer **one** question: 15 marks)

1. When a surgical instrument pack is opened for use, the chemical indicator located inside the pack gives a "sterilisation fail" result. Outline how you would investigate systematically the factors which might be responsible for this test result.
2. Compare and contrast (using tables as appropriate) the host-bacteria interactions which occur in the following 4 conditions: gingivitis, acute necrotising ulcerative gingivitis, acute dento-alveolar abscess, and periapical granuloma.

Section B. (Answer **any two** questions: 15 marks each)

3. Discuss the diagnosis and management of oral candidal infections, with specific reference to predisposing factors, and the selection of appropriate antifungal agents.
4. Explain why hepatitis B has become endemic in some segments of the world population, and outline the impact of this in terms of clinical dental practice.
5. Discuss how Koch's postulates apply to *Streptococcus mutans* and dental caries, and its clinical relevance in the diagnosis and prevention of dental caries.

Section C. (Answer **any two** questions: 15 marks each)

6. Describe how biofilms develop in the waterlines of dental equipment, and outline the practical measures which can be used to minimise biofilm and maintain acceptable water quality in clinical practice.
7. Discuss the significance of prion diseases (transmissible spongiform encephalopathies) to the practice of dentistry.
8. Explain why the body's immune response fails to clear HSV-1 (herpes simplex virus type 1), HIV (human immunodeficiency virus), and hepatitis C virus.

End of paper