

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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Examination for the Subspeciality Certificate in Infectious Diseases of the  
College of Physicians of South Africa

27 March 2008

I Paper Only

(3 hours)

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**ANSWER 4 OF THE FOLLOWING 6 QUESTIONS**

- 1 Write short notes on the following aspects of tuberculosis
- a) Briefly discuss the advantages and limitations of the interferon-gamma release diagnostic assays. (10)
  - b) You are asked to advise on infection control measures to limit the spread of MDR & XDR tuberculosis in a tuberculosis hospital. Discuss appropriate measures for middle income countries like South Africa. (20)
  - c) Discuss the management of tuberculous meningitis. (10)
  - d) A 23-year-old woman with a CD4 count of 87 commences treatment for sputum smear-positive tuberculosis, with a good clinical response. Three weeks later she develops recurrence of her cough and fever. Chest radiograph shows expansion of the original pulmonary infiltrate and mediastinal nodes. Discuss the differential diagnosis. (10)
- [50]
- 2 A 33-year-old man is brought in to the Emergency Department with a fever of 38.9°C and bleeding manifestations. He is confused and a clear clinical history is not available.
- a) What is the differential diagnosis for a febrile patient presenting to a South African healthcare facility with haemorrhagic manifestations? (10)
  - b) Discuss the laboratory investigations that you would request in order to assist you in making a clinical diagnosis. (15)
  - c) Describe the possible infection containment/control measures that you would institute while waiting for final laboratory reports. (15)
  - d) Discuss the value of the various therapeutic options that are available to you for the management of a patient with suspected or confirmed Congo-Crimean haemorrhagic fever. (10)
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3 Write short notes on the following

- a) Explain the difference between concentration-dependant and time-dependant antimicrobial mechanisms of action on antimicrobial dosing using examples. (10)
  - b) Discuss the rationale behind using combination antibiotics. Provide examples where combination therapy is necessary for improved outcome. (10)
  - c) Discuss the criteria for diagnosis of infective endocarditis. (10)
  - d) Briefly describe the pathogenesis and management of pyogenic brain abscesses. (10)
  - e) Discuss the pathogenesis of fever. Explain the pathophysiology of night sweats. (10)
- [50]

4 Write short notes on the following diseases in immunocompromised hosts

- a) Describe the clinical manifestations of Cytomegalovirus (CMV) disease in:
    - i) HIV-infected adults. (10)
    - ii) Transplant recipients. (10)
  - b) Describe the diagnostic tests used for cryptococcosis and comment on their sensitivity and specificity in HIV-infected patients. (10)
  - c) Briefly describe the pathogenesis, clinical manifestations and therapeutic management of Diffuse Infiltrative Lymphocytosis Syndrome (DILS) in HIV-infected adults. (10)
  - d) Discuss your clinical approach to a bone marrow transplant recipient presenting with spiking fever and neutropenia 1 week post-transplant. (10)
- [50]

5 Write short notes on the following aspects/cases of travel medicine

- a) Briefly describe the management for severe malaria, including recent developments in antimalarial chemotherapy. (10)
- b) A 16-year-old junior "iron man" athlete gets admitted to hospital on day 4 of an acute febrile illness. He presents with sudden onset of malaise, myalgia (mainly in his calves), arthralgia, and cephalgia with retrobulbar tenderness. He had just returned from the Phillipines where he had competed in an iron man contest (20 km jungle marathon followed by 5 km canoeing in the sea). It turns out that more than 20 athletes were hospitalised around the globe with a similar clinical picture after having returned home from the same competition.

Discuss the list of differential diagnoses and consider whether specific prophylactic measures could have averted risk. (10)

- c) In the recent past, a chikungunya epidemic unfolded on the Indian Ocean islands and adjacent areas. Briefly discuss the epidemiology, biology, clinical aspects and management of this arboviral infection. (10)
- d) A family of four (mum and dad with two teenage boys; all healthy with no past medical history) plan to tour Malawi and Tanzania on a shoestring budget for four weeks. Planned activities include snorkelling in Lake Malawi, and a visit to Tarangire National Park where husbandry has recently become difficult due to a particular cattle disease called nagana. Outline briefly the advice you would suggest for this trip. (10)
- e) A cruise ship is about to arrive in Cape Town harbour. The captain informed local authorities that more than 200/560 passengers came down with acute watery diarrhoea following a buffet dinner, with some elderly patients being at the brink of collapse. Outline what public health measures ought to be taken and how to investigate this outbreak. (10)

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6 Discuss the following in adults with HIV infection

- a) The optimal time to initiate antiretroviral therapy. (15)
- b) Discuss and motivate the first-line antiretroviral regimen. (10)
- c) Diagnosis and management of lipodystrophy. (15)
- d) Discuss the merits of phenotypic versus genotypic resistance assays. (10)

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