



Cert Pulmonology(SA) Paed

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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

Examination for the Subspecialty Certificate in Pulmonology of the College of Paediatricians of South Africa

Paper 1

2 March 2017

(3 hours)

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

- 1 A 10-year-old boy with liver cirrhosis and portal hypertension presents with recurrent dyspnoea and wheezing episodes requiring hospitalisation. Positive clinical findings are stunting, digital clubbing, mild cyanosis (SaO₂ in room air 88%), loud second heart sound and hyperinflation with bilateral soft wheeze.
 - a) Tabulate the differential diagnosis list for his respiratory disease with a pathophysiological explanation of the accompanying symptoms and signs. (10)
 - b) Describe your approach to investigating this patient. (10)
 - c) Write short notes on the management of this patient considering the differential diagnosis listed in question a). (5)[25]
- 2 Pulmonary rehabilitation is an important part of management of children with lung disease. Discuss an approach to monitoring respiratory function of a child with Duchenne muscular dystrophy during the different stages of the illness. [25]
- 3 Childhood origin of adult chronic lung disease is now an established fact. Describe the evidence for this claim as it relates to asthma, COPD, pneumonia, bronchiectasis and bronchiolitis obliterans. [25]
- 4 With regard to cystic fibrosis answer the following questions:
 - a) Describe the pathophysiological effects of cystic fibrosis transmembrane conductance regulator (CFTR) dysfunction. (5)
 - b) Discuss the different mutational classes of CFTR as well the functional abnormality associated with each class giving an example of a mutation in each class. (10)
 - c) Discuss the role of macrolides in cystic fibrosis. (5)
 - d) Discuss the therapeutic options available related to CFTR protein and CF genes. (5)[25]



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Paper 2

3 March 2017

(3 hours)

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

- 1 A 9-year-old girl presents to you with a history of chronic cough and exertional dyspnoea. Her chest radiograph shows bilateral reticulonodular infiltrates suggestive of interstitial lung disease. Discuss the role of chest CT in assisting with the diagnosis of ILD including how you would minimise radiation exposure in this case. [10]
- 2 Discuss the management of a term newborn baby born to a mother diagnosed with multi-drug resistant tuberculosis. [10]
- 3 Non-invasive ventilation (NIV) is widely used in children in acute respiratory illness and for long-term ventilation. List the modalities and interfaces available to deliver NIV in children and mention the advantages and disadvantages of each. [10]
- 4 Discuss tracheomalacia in children under the following headings: diagnosis, aetiology and management. [10]
- 5 With regards to *Bordetella pertussis*, discuss the following
 - a. The burden of *Bordetella pertussis* disease is highest in young infants (<3 months of age) and has doubled over the last two decades despite the availability of vaccines. Discuss reasons why. (5)
 - b. Discuss prevention strategies for *B. pertussis*. (5)[10]
- 6 Discuss the role of Diffusion Capacity measurement in paediatric patients. [10]
- 7 Discuss the sensitivity and specificity of the different samples and microbiological tests used for the diagnosis of tuberculosis. [10]
- 8 Discuss the spirometry in children under the following headings
 - a. How to determine acceptability and repeatability criteria of tests. (6)
 - b. Contra-indications and relative contra-indications for spirometry. (4)[10]
- 9 Discuss the presentation and approach of a child with pulmonary arterio-venous malformation. [10]
- 10 Describe the gross anatomy of the lung including the airways and its divisions. [10]