



Dip PEC(SA)

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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Examination for the Diploma in Primary Emergency Care of the
College of Emergency Medicine of South Africa

18 August 2010

Paper I Basic Sciences and Equipment relating to Emergency care (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)

Al die vrae moet beantwoord word. Elke vraag moet in 'n aparte boek (of boeke indien meer as een nodig is vir 'n vraag) geskryf word

- 1 a) Describe how Adrenaline can be used in the following clinical scenarios, with special reference to dose, route and frequency of administration and mechanism of action
- i) Croup (Laryngotracheobronchitis). (5)
 - ii) Anaphylaxis. (5)
 - iii) Symptomatic bradycardia. (5)
 - iv) Septic shock. (5)
- b) Describe with the aid of a diagram, the anatomy of the major ligaments that stabilise the lateral aspects of the ankle joint. (5)
- [25]
- 1 a) *Beskryf hoe Adrenalin in die volgende kliniese situasies gebruik kan word; met spesifieke verwysing na dosis, roete en frekwensie van toediening en meganisme van aksie*
- i) *Kroep (Laringotracheobronchitis).* (5)
 - ii) *Anafilakse.* (5)
 - iii) *Simptomatiese bradikardie.* (5)
 - iv) *Septiese skok.* (5)
- b) *Beskryf met behulp van 'n diagram, die anatomie van die major ligamente wat die laterale aspek van die enkel gewrig stabiliseer.* (5)
- [25]
- 2 In the context of patients affected by changes in atmospheric pressure, write short notes on
- a) The physiological impact of breath hold (free) diving to a depth of 30m. (5)
 - b) The physiological impact of scuba diving at a depth of 30m for 1 hour and then ascending rapidly to the surface. (5)
 - c) The pathophysiology of high altitude pulmonary oedema or acute mountain sickness. (5)
 - d) The performance enhancing effect of participating in sport at high altitude (Johannesburg compared to Durban). (5)
 - e) The physiological effects on a patient with a closed pneumothorax being transported in a commercial high altitude jet airliner. (5)
- [25]

- 2 *In die konteks van pasiënte wat geaffekteer word deur verandering in atmosferies druk, skryf kort notas oor*
- a) *Die fisiologiese impak van asem ophou (vry) duik tot 'n diepte van 30m. (5)*
 - b) *Die fisiologiese impak van skuba duik by 'n diepte van 30m vir 1 uur gevolg deur 'n vinnige opstyg na die oppervlak. (5)*
 - c) *Die patofisiologie van hoë hoogte pulmonaal edeem of akute bergsiekte. (5)*
 - d) *Die prestasie verbeterende effek van deelname in sport by hoë hoogtes (Johannesburg in vergelyking met Durban). (5)*
 - e) *Die fisiologiese effek op 'n pasiënt met 'n geslote pneumotoraks wat vervoer word in 'n kommersiële hoë hoogte straler vliegtuig. (5)*
- [25]
- 3 Under the following headings, definition, pathophysiology, causes, clinical presentation, laboratory work up, treatment and follow up, write short notes on
- a) Methaemoglobinaemia. (12)
 - b) Porphyria. (13)
- [25]
- 3 *Onder die volgende opskrifte: definisie, patofisiologie, oorsake, kliniese presentasie laboratorium opwerk, behandeling en opvolg, skryf kort notas oor*
- a) *Methemoglobinemie. (12)*
 - b) *Porfirie. (13)*
- [25]
- 4 Describe and discuss
- a) Lower versus upper motor neurone damage. Give distinguishing features and examining tests. (7)
 - b) The Monroe-Kelly Hypothesis and give the underlying causes of increased intracranial pressure and the effects of uncal herniation. (8)
 - c) The effects of Spinal Cord injury. (10)
- [25]
- 4 *Beskryf en bespreek*
- a) *Onderste teenoor boonste motor neuron skade. Gee onderskeidende kenmerke en ondersoek toetse. (7)*
 - b) *Die Monroe-Kelly Hipotese en gee die onderliggende oorsake van verhoogde intrakraniale druk en die effekte van uncale herniasie. (8)*
 - c) *Die effekte van Spinaalkoord besering. (10)*
- [25]

- a) A 35-year-old athlete collapses at the end of a running marathon – clinically dehydrated; pulse rate 100; BP 88/55. (5)
- b) A 30-year-old victim of penetrating chest trauma – massive haemothorax; pulse 95, BP 80/40. (5)
- c) An elderly diabetic presents to the emergency department after collapse at home – GCS 13/15, pulse 55, BP 80/40, glucose 7mmols/l. (5)
- d) An 8-year-old with 4 hour old 20% BSA deep partial thickness (2nd) burns. (5)
- e) A near drowning victim, spent 3 days at sea exposed to elements on a wrecked boat – presents to the emergency department after rescue – GCS 12/15; pulse 85; BP 85/45; hypernatraemia, clinically dehydrated. (5)
- 2 *Besprek vog resussitasie/ behandeling opsies in die volgende gevalle*
- a) 'n 35-Jarige atleet kollabeer teen die einde van 'n hardloop maraton – klinies gedehidreer; pols spoed 100; BP 88/55. (5)
- b) 'n 30-Jarige slagoffer van penetrerende borskas trouma – massiewe hemotoraks; pols 95, BP 80/40. (5)
- c) 'n Bejaarde diabeet presenteer by die nood eenheid na 'n kollaps by die huis – GCS 13/15, pols 55, BP 80/40, glukose 7mmols/l. (5)
- d) 'n 8-Jarige met 4 uur oue 20% BSA diep gedeeltelike dikte (2^{de}) brandwonde. (5)
- e) 'n Naby verdrinking slagoffer, het 3 dae gespandeer op see blootgestel aan die elemente op 'n vergane boot – presenteer by die nood eenheid na die reddingpoging – GCS 12/15; pols 85; BP 85/45; hipernatremia, klinies gedehidreer. (5)
- [25]
- 3 Define Disseminated Intravascular Coagulation [DIC], and write short notes under the following headings
- a) Pathophysiology. (5)
- b) Causes. (5)
- c) Clinical presentation. (5)
- d) Laboratory work up. (5)
- e) Treatment and follow up. (5)
- [25]
- 3 *Definieer Gedissemineerde Intravaskulêre Koagulasie, en skryf kort notas onder die volgende opskrifte*
- a) *Patofisiologie.* (5)
- b) *Oorsake.* (5)
- c) *Kliniese presentasie.* (5)
- d) *Laboratorium opwerk.* (5)
- e) *Behandeling en opvolg.* (5)
- [25]
- 4 A 54-year-old man presents at your emergency department with mild abdominal discomfort. On examination you find a swelling in the scrotum. Describe and discuss your approach and clinical assessment focussed on the swelling, including aetiology, signs and symptoms, diagnosis and diagnostic aids and possible complications of the swellings you have described if left untreated. [25]
- 4 *'n 54-jarige man presenteer by jou nood eenheid met geringe abdominale ongemak. Op ondersoek vind jy 'n swelling in die skrotum. Beskryf en bespreek jou benadering en kliniese evaluering gefokus op die swelling, insluitend orsaak, simptome en tekens, diagnose en diagnostiese hulpmiddels en moontlike komplikasies van die swellings wat jy bespreek het as dit onbehandeld gelos sou word.* [25]