

Candidate number _____

BOOK THREE

QUESTION 19 (21 marks) – DOUBLE QUESTION

A 20 year old male is brought to your ED with confusion and hyperthermia following a marathon. You think he has exertion related heat stroke.

i. What are the management priorities in this situation (5 marks)

ii. What investigations would you perform and why (4 marks)

Heat illness affects some groups more than others and non-exertional heat stroke is more common during heat waves.

iii. Define heat wave (2 marks)

- iv. List 4 risk factors for classic non-exertional heat stroke (4 marks)

- v. List three drugs/medications from different classes that increase the risk of heat stroke and explain the pharmacological reason(s) for the effect for each (6 marks)

Medication	Explanation

QUESTION 20 (10 marks)

A 20 year old male presents with a 3 day history of lethargy and generalised malaise. He is confused and looks unwell. The following venous blood tests are obtained.

pH	7.08		
pCO ₂	20	mmHg	(35-45)
HCO ₃	16	mmol/L	(22-28)
BE	-22	mmol/L	(-3-3)
Lactate	9	mmol/L	(<2.2)
Glucose	44	mmol/L	(3.9-5.8)
K	2.7	mmol/L	(3.5-4.2)
Na	160	mmol/L	(135-145)
Cl	124	mmol/L	(95-110)
Creatinine	70	micromol/L	(60-110)
Urea	5.3	mmol/L	(3-8)

- i. Interpret the above results, and show any relevant calculations (5 marks)

- ii. Outline your immediate management priorities (5 marks)

QUESTION 21 (14 marks)

A 3 year old boy is brought to ED by his mother with abdominal pain and vomiting. Mum is concerned that he may have ingested some of her iron tablets. She is sure that there are more than 10 tablets missing.

- i. List 3 details that will assist your risk stratification (3 marks)

- ii. Complete the following table (4 marks)

Elemental Iron dose	Clinical Effect
<20mg/kg	
20-60mg/kg	
>60-120mg/kg	
>120mg/kg	

- iii. List 4 investigations with a rationale for each that you would perform to determine the severity of toxicity (4 marks)

- iv. List 3 options for decontamination in this child (3 marks)

QUESTION 22 (12 marks)

A woman in late pregnancy is brought to you following a high speed MVA.

- i. List three changes in respiratory physiology that occur with pregnancy [3 marks]

- ii. Complete the table regarding cardiotocographic (CTG) monitoring in trauma (4 marks)

Purpose of CTG monitoring	
Gestation (weeks) from which CTG monitoring is useful	
Recommended duration of CTG monitoring in trauma	
Three CTG findings suggesting foetal distress	

- iii. Describe the process of peri-mortem caesarean section [5 marks]

QUESTION 23 (14 marks)

An 89 year old woman is brought to your tertiary ED with sudden severe chest pain and collapse with transient loss of consciousness.

Vital signs BP 90/- mmHg
 HR 50 bpm
 GCS 12

- i. List 4 potentially life threatening diagnoses (4 marks)

- ii. What are the three most useful diagnostic tests in this setting (3 marks)

- iii. What is the major abnormality on this bedside sub-sternal ultrasound image and what is the likely clinical diagnosis (2 marks)

AN ULTRASOUND IS SHOWN IN THE PROPS BOOKLET, PAGE 12

iv. What two treatment approaches are available (2 marks)

v. The family arrives with an Advance Care Directive stating the patient did not want any lifesaving surgery. Prescribe the PRN meds you would chart for the ward (3 marks)

QUESTION 24 (13 marks)

You are at a peripheral hospital with no maternity facilities when a 16 year old obese girl presents in the second stage of labour. Up until this presentation she was unaware that she was pregnant.

- i. List 5 steps you would take to prepare for her deliver (5 marks)

Within minutes of arrival the baby's head is delivered. However, on the next contraction you are unable to deliver the shoulders despite gentle axial traction.

- ii. Name this condition and in what period of time should the baby be delivered to avoid serious foetal hypoxia (2 marks)

- iii. Describe 3 manoeuvres that may enable the safe delivery of the child (6 marks)

QUESTION 25 (18 marks)

A 4 week old baby presents to your urban ED with a runny nose, mild cough and increased work of breathing over the past 2 days. The child had several episodes where her breathing became slower but this resolved with gentle stimulation. She has not fed for 8 hours.

Vital signs	Temp	36.6 deg C
	HR	190 bpm
	CR	3 sec
	RR	70/min
	SaO ₂	93% RA

- i. List 4 differential diagnoses (4 marks)

- ii. Describe and interpret the CXR (4 marks)

A CHEST XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 13

iii. Outline your management steps (4 marks)

iv. You prepare for intubation. Complete the following table (6 marks)

Weight	4kg
ETT size	
ETT insertion depth	
Blade type and size	
Induction agent and dose	
Paralytic agent and dose	
Ventilator settings (TV, RR, FiO ₂)	

QUESTION 26 (14 marks)

A 50 year old female presents with chronic lithium poisoning. Investigations reveal a lithium level of 3.1 mmol/L, and serum creatinine 180 micromol/L.

i. What is the volume of distribution of lithium (1 mark)

ii. List 6 possible signs or symptoms of chronic lithium poisoning (6 marks)

iii. Outline the principles of management in this patient (5 marks)

iv. List 2 major differences between ACUTE and CHRONIC lithium poisoning (2 marks)

QUESTION 27 (16 marks)

A 68 year old male sustains blunt trauma to his right eye from a golf ball.

- i. Describe three abnormalities in the image (3 marks)

A CLINICAL IMAGE IS SHOWN IN THE PROPS BOOKLET, PAGE 14

- ii. List 5 features on assessment that would suggest orbital compartment syndrome (5 marks)

iii. Describe the steps involved in a lateral canthotomy/cantholysis (8 marks)
