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BOOK TWO

QUESTION 10 (20 marks) – DOUBLE QUESTION

You are the consultant in a regional Emergency Department. A 5 year old girl re-presents having been discharged 7 hours ago. She was assessed during the previous presentation for a head injury, sustained after a fall from a slide at preschool. No investigations were performed.

- i. List 6 indications for CT scan of brain for this child (6 marks)

- ii. Give 3 positive findings from the axial CT Image below (3 marks)

A CT BRAIN IS SHOWN IN THE PROPS BOOKLET, PAGE 5

- iii. The child deteriorates to GCS 5. List your top 5 management priorities (5 marks)

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- iv. Concerns about the management of the initial presentation are brought to your attention. Give 3 potential issues and action required (6 marks)

QUESTION 11 (16 marks)

You are the overnight registrar in your tertiary hospital ED. You receive an ambulance pre-arrival call at 2am for a 25 year old male, stabbed multiple times in the chest. ETA is 10 min.

Vital signs: HR 150 bpm
 BP 72/41 mmHg
 SaO2 90% on 15L
 RR 30 bpm
 GCS 12

- i. List 6 potential life threatening injuries in this patient (6 marks)

- ii. Briefly describe how you would prepare to receive this patient (5 marks)

iii. What are the indications for ED thoracotomy in trauma (3 marks)

iv. Provide an estimate of survival rates following ED thoracotomy for traumatic arrest (2 marks)

In penetrating chest trauma	
In blunt trauma	

QUESTION 12 (14 marks)

A 68 year old female presents to your tertiary emergency department intoxicated, 2 hours after deliberately ingesting 120 x 600mg tablets of slow release potassium. She has been vomiting and has a GCS of 14 (confused). An initial VBG is performed.

pH	7.32	(7.35-7.45)
pCO ₂	35 mmHg	(35-38)
Lactate	5 mmol/L	(0.6-1.5)
Creat	110 mcmol/L	(45-90)
BSL	6.3 mmol/L	(3.9-5.8)
Na	133 mmol/L	(136-146)
K	6.1 mmol/L	(3.9-5.2)
HCO ₃	18 mmol/L	(21-28)
BE	-4 mmol/L	(-1.5-3.0)

- i. Outline your risk assessment with regard to her ingestion (4 marks)

- ii. List and briefly describe 2 specific toxicological interventions that may be used to manage her potassium ingestion (2 marks)

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- iii. List an advantage and disadvantage for each of the methods listed above (4 marks)

- iv. List 4 other management priorities (4 marks)

QUESTION 13 (20 marks)

A 35 year old female presents to your Emergency Department with an acute asthma attack. She is highly distressed and only speaking single words despite continuous salbutamol nebs.

- i. List 4 markers of severe asthma (4 marks)

- ii. Complete the table below regarding the use of intravenous salbutamol and magnesium sulfate in asthma (8 marks)

	Indication and rationale	Adverse Effects
Intravenous salbutamol		
Magnesium		

Despite intensive therapy, and a period of non-invasive ventilation, the patient continues to deteriorate, appears exhausted and begins to tire rapidly. You decide intubation is required.

- iii. Outline what your initial ventilator settings (4 marks)

- iv. List likely causes of climbing airway pressures in a ventilated asthmatic (4 marks)

QUESTION 14 (13 marks)

This is the ear of a 40-year-old male who has developmental delay with autism.

A CLINICAL IMAGE IS SHOWN IN THE PROPS BOOKLET, PAGE 6

- i. Describe and interpret the image (2 marks)

- ii. List two possible predisposing conditions (2 marks)

- iii. List two complications (2 marks)

- iv. Name the three bacteria typically involved (3 marks)

- v. Name one suitable antibiotic choice for this condition (1 mark)

This developmentally delayed man is distressed about being in hospital. He is currently pacing and will not come into the assessment room.

- vi. List 3 non-pharmacological strategies or techniques you can use to manage his agitation (3 marks)

QUESTION 15 (15 marks)

A 74 year old man presents after a fall the night before. He is now complaining of reduced mobility. Past medical history includes atrial fibrillation and hypertension. His medications are dabigatran, metoprolol and aspirin. GCS is 15.

- i. Outline the findings on the CT image (4 marks)

A CT BRAIN IS SHOWN IN THE PROPS BOOKLET, PAGE 7

- ii. List 4 possible treatments you would consider using and your rationale for each (8marks)

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- iii. List 2 important additional features on assessment that are required to assist your treatment decision (2 marks)

- iv. List one other option for the management of NOAC associated bleeding (1 mark)

QUESTION 16 (15 marks)

A 12 year old girl was brought to ED via ambulance following a syncopal episode.

- i. What is the definition of syncope (3 marks)

- ii. What is the most common cause of syncope in children (1 mark)

- iii. Name a form of syncope unique to the preschool population (1 mark)

- iv. List 5 red flags in this girl's history that would prompt further investigation (5 marks)

- v. List 5 conditions you would look for in this girl's ECG (5 marks)

QUESTION 17 (14 marks)

A 26 year old primigravida presents at 36 weeks gestation with jaundice, blurred vision and hypertension (180/100 mmHg). The antenatal period was otherwise unremarkable. The following are her blood results:

Hb	80g/L	(115 – 160)
Platelets	52 x 10 ⁹ /L	(140 – 400)
INR	1.8	(0.9 – 1.3)
APTT	55 seconds	(25 – 38)
LDH	654 U/L	(110 – 250)
Fibrinogen	1.0 G/L	(1.5 – 4.0)
Total bilirubin	51 micromol/L	(< 20)

- i. List the four most likely diagnoses for this clinical presentation (4 marks)

- ii. Outline 4 priorities in your management (4 marks)

- iii. She starts to have a generalised seizure. List 2 medications with doses that you might administer (2 marks)

- iv. List the findings on a cardiotocograph (CTG) trace that would indicate foetal distress (4 marks)

CTG Feature	Non-reassuring or Abnormal values
Baseline rate	
Decelerations	

QUESTION 18 (16 marks)

A 72 year old male presents via ambulance short of breath. He is sweaty and looks unwell but is conscious. He has a history of IHD and has an AICD in situ.

Vital signs P 150 bpm
 BP 75/- mmHg
 RR 30 bpm
 SaO₂ 96% 15LNRB

- i. What rhythm is shown (1 mark)

A 12 LEAD ECG IS SHOWN IN THE PROPS BOOKLET, PAGE 8

You decide to perform DC cardioversion to treat the rhythm noted above. A VBG done after a cannula is placed shows the following.

pH	7.35	(7.35-7.45)
pCO ₂	57 mmHg	(32-45)
Lactate	3.3 mmol/L	(0.5-1.6)
K	6.1 mmol/L	(3.5-5.2)
Cr	160 mcmmol/L	(60-110)

- ii. What other treatment is required while cardioversion is being arranged (2 marks)

- iii. Outline 2 pharmacologic agents you could use for sedation in this patient with initial doses and indicating an advantages and disadvantage for each (8 marks)

Drug	Dose	Advantage	Disadvantage

- iv. Describe what settings you would set on the defibrillator and the positioning of the pads on the patient (2 marks)

- v. After cardioversion with sedation his rhythm is as follows. Describe the rhythm (1 mark)

A RHYTHM STRIP IS SHOWN IN THE PROPS BOOKLET, PAGE 8

- vi. Despite the ECG change the patient remains hypotensive, P 100bpm, SBP 80mmHg. Give 2 differential diagnoses for this (2 marks)
