

Candidate number \_\_\_\_\_

# **BOOK TWO**

## QUESTION 10 (25 marks) - DOUBLE QUESTION

An 18 year old male is brought to your small rural ED by his parents. He had a VP shunt inserted for hydrocephalus at age 10, with the last revision 3 years ago. He has had increasing headache and vomiting for the last two days and is now confused.

Vital signs are:

T 37.3 degrees (per axilla)

P 114 regular

BP 140/70

GCS 14

- i. List 5 potential causes for this presentation (5 marks)

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- ii. List the initial laboratory investigations you would perform including your rationale (10 marks)

Investigation	Rationale

- iii. A CT brain shows marked hydrocephalus. The patient becomes drowsy and has a tonic clonic seizure. Outline your initial five treatment steps (5 marks)

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- iv. Despite your treatment, his seizures persist for the next 30 minutes. What five further steps would you take (5 marks)

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## QUESTION 11 (16 marks)

A 2 year old boy has ingested iron tablets. He presents with his mother and he currently seems well. You calculate that he has possibly ingested 90mg/kg elemental iron.

- i. Complete the table (4 marks)

Elemental iron dose	System involved/Effects
<20mg/kg	
20-60mg/kg	
>60-120mg/kg	
>120mg/kg	

- ii. Complete the table of classical stages of iron toxicity (5 marks)

Time post ingestion	Clinical features
0-6 hours	
6-12 hours	
12-48 hours	
2-5 days	
2-6 weeks	

- iii. You obtain an Xray. List 2 relevant findings (2 marks)

**AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 5**

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- iv. How does this xray alter your management plan (2 marks)

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- v. List 3 blood tests that you will order and your reasoning for doing so (3 marks)

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QUESTION 12 (13 marks)

A 40 year old man is brought to your tertiary ED after being found unconscious in a police watch house cell. It appears he hanged himself with a belt, tied to a ceiling beam. Ambulance personnel report the following at handover:

GCS 5  
Temp 37 deg C  
P 110, BP 180/90  
RR 16, spontaneous respirations, with stridor

- i. Outline 4 key issues in the immediate management of this patient (4 marks)

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- ii. List 4 prognostic indicators for this patient's outcome (4 marks)

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- iii. The patient is successfully intubated and ventilated, but develops high airway pressures a short time later. List 5 possible causes (5 marks)

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QUESTION 13 (23 marks)

A 2 year old girl is brought to ED by her mother, who tells you her daughter has been reluctant to weight bear. The mother tells you that her daughter pulled a drawer full of cutlery onto her foot yesterday afternoon.

- i. Outline four key points of your physical examination of this patient (4 marks)

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- ii. A femur and knee Xray is performed. Describe your findings (1 mark)

**AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 6**

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- iii. Describe three pharmacological options for analgesia in this patient. Provide drug names, doses, dosing intervals, route of administration, and possible adverse effects (9 marks)

NAME	Dose/Route of administration	Adverse effects

- iv. List five features which might suggest a non-accidental cause of injury in this patient (5 marks)

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- v. The mother decides to discharge the child against medical advice prior to formal splinting and orthopaedic referral. Outline four steps you will take to protect this child (4 marks)

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QUESTION 14 (13 marks)

A 51 year old man is brought in by ambulance having fallen onto his back from 10 metres. He has no significant past medical history, and is on no medications.

His observations on arrival are:

GCS 15, P 110, SBP 70, RR 20, SaO<sub>2</sub> 99% 6L Hudson mask

- i. List the 3 most important findings on the portable pelvic Xray (3 marks)

**AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 7**

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- ii. What is the Young classification of injury (1 mark)

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- iii. List 5 treatment priorities in this patient (5marks)

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iv. Describe 4 essential elements of a massive transfusion protocol (4 marks)

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## QUESTION 15 (24 marks)

There has been a 3-day heat wave involving the south-eastern region (parts of NSW, Victoria and South Australia) with daytime temperatures 38-40 degrees Celsius and overnight minimum temperatures of 28-30 degrees Celsius.

- i. List 4 groups who are particularly at risk of developing non-exertional heat-related illness and include your reasoning (8 marks)

At-risk group	Explanation

- ii. What is the classic definition of heatstroke? (1 mark)

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- iii. Provide 3 differential diagnoses of heatstroke in each of the 2 listed categories (6 marks)

Drug intoxication:

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Infections:

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- iv. Complete the table listing 3 cooling methods and 2 advantages and 2 disadvantages of each (9 marks)

Cooling method	Advantages	Disadvantages

## QUESTION 16 (11 marks)

A 10 year old boy collapses on the beach in Queensland after playing in a small rock pool. He had been handling a small sea creature. He is brought to your rural ED by paramedics who identified the creature as a blue ring octopus.

- i. Identify the type of toxin and its mechanism of action (2 marks)

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- ii. Describe the clinical features you would expect this child to exhibit in early and late stages of the toxidrome (4 marks)

Stage of toxidrome	Clinical signs
Early signs – list 2	
Late signs – list 2	



- iii. Identify the definitive management step for the toxidrome from the blue ring octopus (1 mark)

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- iv. List 2 other marine creatures which may cause collapse on an Australian beach and identify the mechanism of the collapse (4 marks)

Marine Creature	Mechanism of collapse

QUESTION 17 (17 marks)

A 10 year old girl is brought to the ED by her parents who noticed a rash on her chest. She is normally well and fully vaccinated although she has an intercurrent upper respiratory tract infection and cough. Her vital signs are normal except for a fever of 38.5<sup>0</sup>C

**A CLINICAL IMAGE IS SHOWN IN THE PROPS BOOKLET, PAGE 8**

- i. Describe the rash (1 mark)

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- ii. List 5 possible causes of this presentation (5 marks)

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- iii. Briefly describe 5 clinical developments or investigation findings that would raise your level of suspicion for a serious bacterial infection in this patient (5 marks)

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The patient's Full Blood Count results are displayed.

Component	Result	Normal Range
White Cell Count	16.1	4-11
Haemoglobin	110	115-175
Platelet Count	97	150-450
Haematocrit	0.30	0.36-0.56
MCV	79	79-96
MCH	28	27-32
MCHC	32	30-36
Neutrophil	2.1	2.9-7.9
Lymphocyte	9.8	1.8-4.0

- iv. Given these blood results, list 2 possible differential diagnoses for the presentation. For each differential diagnosis outline clinical or investigation findings that would either support that diagnosis or make it less likely (6 marks)

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- ii. Other than the communication listed above, list 6 other processes to prepare your staff and the ED for the anticipated mass casualty event (6 marks)

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- iii. Eight hours after the arrival of the first patients in your ED, the medical superintendent makes a decision to stand down the disaster response. List five processes you would undertake in achieving this outcome (5 marks)

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