

Candidate name \_\_\_\_\_

# BOOK 1

QUESTION 11 (13 marks)

A 23 year old lady presents to your ED following an episode of 'feeling faint' with subsequent collapse and brief loss of conscious with spontaneous recovery. Her observations at triage are normal, she is afebrile and alert. An ECG is performed

**A 12 LEAD ECG IS SHOWN IN THE PROPS BOOKLET, PAGE 3**

- i. What is your ECG diagnosis? (2 marks)

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- ii. Outline 5 questions on history that you would like to ask (5 marks)

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iii. List and justify initial bedside ED investigations (5marks)

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iv. What is your disposition plan for this lady? (1 mark)

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## QUESTION 12 (16 marks)

A 35 year old woman presents diplopia. She has binocular double vision on both horizontal and vertical gaze. You suspect she has a third cranial nerve palsy.

- i. Describe the typical examination findings of a third nerve palsy (3 marks)

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- ii. The location of the site of a third nerve lesion can be predicted by the presence of other symptoms and examination findings (6 marks)

Location of lesion	Associated symptoms/signs
Brainstem/midbrain (e.g. around oculomotor nuclei)	
Intra-cranial course (e.g. along lateral wall of cavernous sinus)	
Orbital (superior orbital fissure, orbital apex)	

- iii. In the setting of a 3<sup>rd</sup> nerve palsy, the presence or absence of ipsilateral pupil dilation helps to distinguish between a compressive aetiology (eg. expanding aneurysm) and a microvascular/ischaemic aetiology. Explain. (2 marks)

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- iv. List 5 causes of anisocoria (other than 3<sup>rd</sup> nerve palsy) (5 marks)

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QUESTION 13 (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 <sup>9</sup> /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)

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

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

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- 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 14 (14 marks)

The time to transfer of care (TOC) from ambulance stretcher to your ED (“off-stretcher” time) deteriorated recently.

- i. What are the adverse effects of prolonged TOC times? (4 marks)

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To address this problem an increasing number of patients have been sent directly from the ambulance bay to the Emergency Medicine Unit (EMU). Unfortunately, there have been a number of incidents in your EMU where patients have unexpectedly deteriorated during their stay.

- ii. What is the role of an EMU or ED Short Stay Unit? (2 Marks)

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- iii. How would you develop a solution to the increased number of patients deteriorating in EMU? (4 Marks)

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- iv. You have been asked to develop a set of exclusion criteria for your Short Stay Unit. Please list your exclusion criteria ? (4 Marks)

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QUESTION 15 (17 marks)

A 23 year-old female is brought to your ED following a high speed motor vehicle accident. She has normal vital signs but has tenderness in her right upper abdomen with no peritoneal signs. Secondary survey reveals no other injuries.

- i. Outline the role of the abdominal FAST scan in haemodynamically *stable* blunt trauma patients (3 marks)

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An abdominal FAST scan is performed in this patient

**AN IMAGE FROM THE FAST SCAN IS SHOWN IN THE PROPS BOOKLET, PAGE 4**

- ii. Describe the findings in the right upper quadrant on this FAST scan image (2 marks)

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iii. What are the pitfalls and limitations of FAST ultrasound scanning in trauma (4 marks)

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iv. Discuss the advantages and disadvantages of whole body CT scanning (“pan scan”) versus selective imaging in trauma (4 marks)

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v. Complete the following table relating to ionising radiation arising from CT imaging (4 marks)

	Dose (mSv)	Equivalent number of chest X-rays	Equivalent period of natural background radiation (years)
Head CT	2		
CT abdomen/pelvis	15		

## QUESTION 16 (16 marks)

A 25 year old man presents 6 hours after a SCUBA dive with a possible decompression sickness (DCS)

- i. List 6 questions specific to diving that you should ask in your history (6 marks)

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- ii. Complete the table listing 3 symptoms or signs of DCS in each category (6 marks)

Category	Symptom/Sign
Neurological	
Other	

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iii. Complete the table contrasting DCS and Arterial Gas Embolism (AGE) (4 marks)

	DCS	AGE
Pathophysiology		
Time of onset		

QUESTION 17 (14 marks)

A five-year old boy has been kicked in the face by a horse and has been brought to your rural base hospital by ambulance. He is unconscious, has extensive facial injuries and partial airway obstruction.

Vital signs:

HR 140

SBP 80

GCS 3

Sats 85%

At laryngoscopy the view is obscured by anatomical derangement, massive tongue swelling, blood and debris and he cannot be oro-tracheally intubated.

- i. Explain why partial/complete upper airway obstruction is a relative contraindication to percutaneous transtracheal ventilation (3 marks)

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- ii. Describe a method for connecting a bag-valve device to a 16-gauge catheter that has been inserted successfully through the cricothyroid membrane (3 marks)

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- iii. Outline the ventilation parameters you would use if a commercially available jet ventilation device with variable-flow oxygen is available (3 marks)

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- iv. List 5 complications of percutaneous transtracheal ventilation (5 marks)

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QUESTION 18 (15 marks)

A 52 year old man presents with back pain.

- i. List six (6) clinical features associated with serious underlying causes (“Red Flags”) (6 marks)

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- ii. Recovery from non-specific mechanical back pain is influenced by various psychosocial factors (“Yellow Flags”). List 5 of these (5 marks)

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- iii. The infection causing spinal epidural abscess can arise from many sources. List 4. (4 marks)

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QUESTION 19 (16 marks)

A 53 year old man injured his posterior lower leg on sharp steel at a worksite and presents with a 5cm laceration 6 hours later.

- i. Wound irrigation is an effective way to remove debris and contaminants and to decrease bacterial counts in traumatic wounds. Describe the usual method of conducting wound irrigation (3 marks)

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- ii. Which wounds are typically considered candidates for Delayed Primary Closure? (2 marks)

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- iii. Describe the technique for Delayed Primary Closure (2 marks)

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- iv. In what circumstances is antibiotic prophylaxis appropriate in traumatic wounds? (5 marks)

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- v. What are the key points in the wound care instructions that you will give this patient? (4 marks)

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## QUESTION 20 (15 marks)

A 40 year old developmentally delayed patient is brought to your ED with vomiting. She had PEG inserted 4 weeks ago for feeding. On arrival her GCS is 13 (E4 V3 M6) which is normal for her according to the carers. Sats 95%, RR 13, P 90 BP 140/70, she weighs approximately 40kg. She is on no regular medications.

**A 12 LEAD ECG IS SHOWN IN THE PROPS BOOKLET, PAGE 5**

- i. Please describe the ECG and provide 3 possible diagnoses (5 marks)

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Her clinical exam is unremarkable other than dry mucus membranes. Bloods including a VBG are taken. The ambulance crew have NOT placed an IVC

pH 7.44	(7.35 – 7.45)
pCO <sub>2</sub> 47 mmHg	(35 – 45)
HCO <sub>3</sub> 42 mmol/L	(22 – 28)
BE xxxx	(-3 - + 3)
K 2.0 mmol/L	(3.4 – 5)
Na 155 mmol/L	(134 – 146)
Cl 129 mmol/L	(98 – 106)
Glu 7.4 mmol/L	3.5 – 5.5)

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ii. Describe and interpret the VBG and provide a likely differential (5 marks)

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iii. Outline your immediate management of this case (5 marks)

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