

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

Department of  
Emergency Medicine

Princess Alexandra Hospital

# FELLOWSHIP TRIAL EXAMINATION

2015.1

## WRITTEN EXAMINATION

### SHORT ANSWER QUESTIONS

EXAMINATION TIME: 3 HOURS

#### DIRECTIONS TO CANDIDATES

1. All questions must be attempted.
2. All questions are of equal value.
3. Answer each question in this examination book in the space provided.
4. Write your name on this page of the examination book.
5. Write your initials on all subsequent pages of this examination book.

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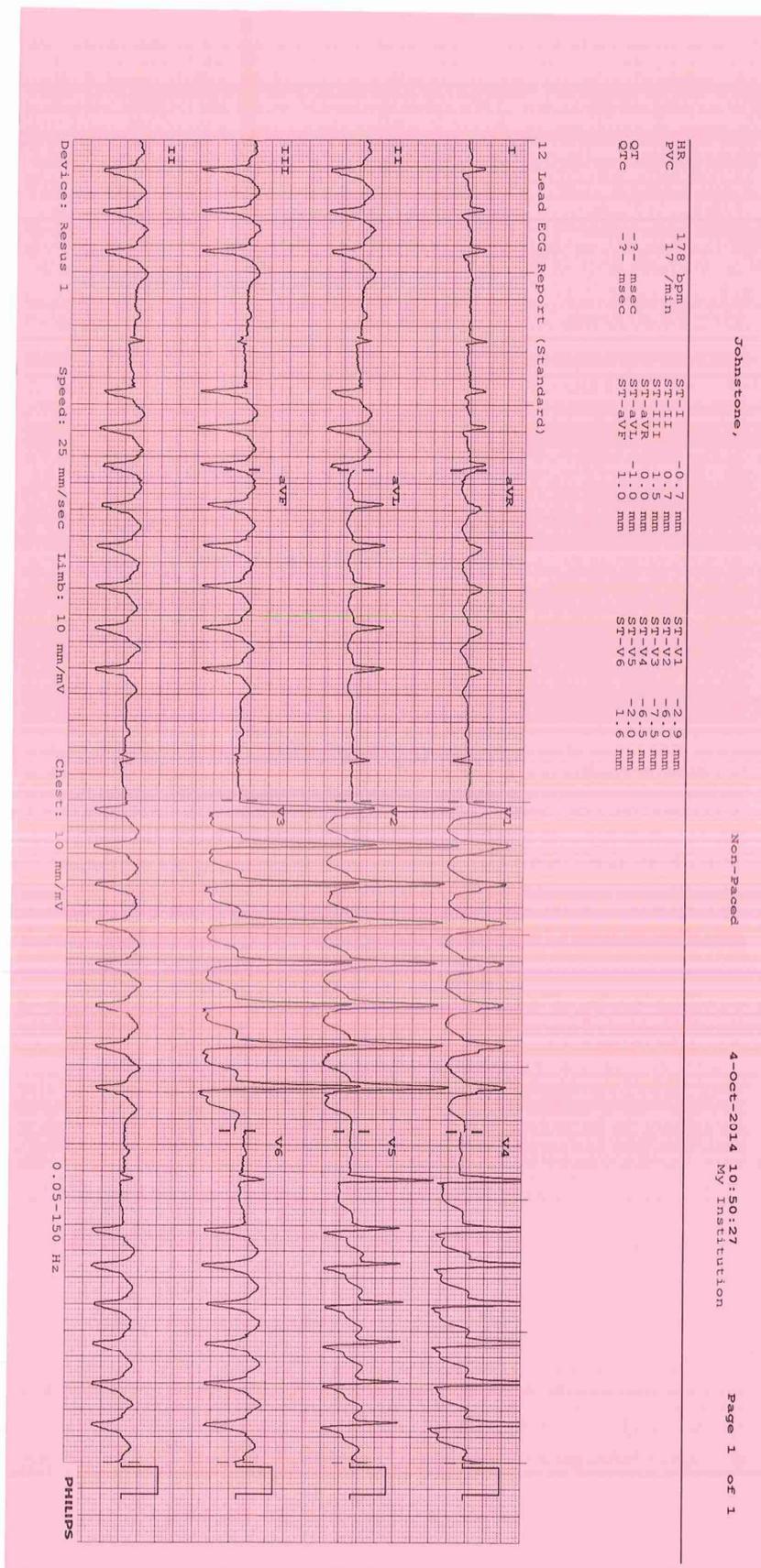
**SAQ Q 1**

A 48 year old man has been brought to the ED with chest pain and dizziness for the last 1 hour.

His vital signs are:

GCS	14	E4 V4 M6
BP	80/45	mmHg
O2 sats	99%	6L O2 via mask
Temp	36.5	degrees

His ECG is shown below.



Candidate initials: \_\_\_\_\_

1. What is your diagnosis of the rhythm displayed in the ECG? (1 mark)

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2. List 3 supportive features from the ECG. (3 marks)

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3. List 4 likely causes of this problem. (4 marks)

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**Candidate initials:** \_\_\_\_\_

4. List 3 management steps you will undertake in the ED. Provide doses where appropriate. (6 marks)

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**SAQ 2**

A 33 year old woman is being managed in your ED with severe community acquired pneumonia. She is morbidly obese, with an estimated weight of 180kg and height of 160cm.

Her vital signs are:

GCS	15	
Pulse	140	/min
BP	90/45	mmHg
RR	40	/min
O2 sats	90%	15L/min O2 via non-rebreather mask
Temp	38.5	degrees

The patient is becoming tired and you have assessed her as requiring intubation to maintain adequate oxygenation.

1. In the section below, list 4 difficulties that you may encounter during the peri-intubation period. For each difficulty, briefly describe how you will aim to minimise the problem. (8 marks)

Candidate initials: \_\_\_\_\_

Difficulty: \_\_\_\_\_

Solution: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Candidate initials: \_\_\_\_\_

2. Give the ventilator settings you would initially institute by completing the table.  
(5 marks)

	YOUR SETTING
FiO <sub>2</sub>	
Respiratory rate	
Tidal volume	
Positive end-expiratory pressure	
Peak pressure limit	

**SAQ Q 3**

A 75 year old man is brought to your ED with severe shortness of breath. You have assessed him to have an infective exacerbation of COPD. You are considering non-invasive ventilation (NIV) as part of his management.

1. List 4 contra-indications to NIV for COPD in the ED. (2 marks)

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After one hour of bi-level NIV, an arterial blood gas is performed:

FiO <sub>2</sub>	0.5		
pH	7.26	mmHg	(7.35 – 7.45)
pCO <sub>2</sub>	86	mmHg	(35 – 45)
pO <sub>2</sub>	52	mmHg	(60 – 100)
HCO <sub>3</sub>	38	mmol/L	(24 – 34)
BE	7.1	mmol/L	(-3 – 3)

You note that this result is very similar to the arterial blood gas performed on arrival.

**Candidate initials:** \_\_\_\_\_

2. List the pathological processes evident on the arterial blood gas, giving supportive evidence. (4 marks)

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3. List the changes you would make to his NIV parameters as a result of the above findings. (2 marks)

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Candidate initials: \_\_\_\_\_

**SAQ Q 4**

A 25 year old woman has been rushed in to your resuscitation room. She has just delivered a baby in the passenger seat of a car being driven by her husband. The baby was 38 weeks gestation and appears to be well. The placenta was delivered in the car.

The woman is experiencing heavy vaginal blood loss.

1. In the section below, list 6 possible causes of her vaginal bleeding.

For each cause give:

- one cardinal finding of examination that would support that cause
- one cardinal principle of management of that cause

(18 marks)

Candidate initials: \_\_\_\_\_

**Cause 1**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

\_\_\_\_\_

**Cause 2**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

\_\_\_\_\_

Candidate initials: \_\_\_\_\_

**Cause 3**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

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**Cause 4**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

\_\_\_\_\_

Candidate initials: \_\_\_\_\_

**Cause 5**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

\_\_\_\_\_

**Cause 6**

\_\_\_\_\_

**Examination Feature**

\_\_\_\_\_

\_\_\_\_\_

**Management Principle**

\_\_\_\_\_

\_\_\_\_\_

Candidate initials: \_\_\_\_\_

**SAQ Q 5**

A 19 year old man has presented to your rural ED after falling on to his out-stretched hand while playing basketball.

He is complaining of wrist pain. There are no wounds visible.

AP and lateral Xrays of his wrist are given.

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**SAQ Q 6**

A 56 year old man has been brought to your tertiary ED after a motorcycle accident.

His pelvic Xray is given.



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1. Classify his pelvic injury based on the Xray provided. (2 marks)

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2. List 4 possible methods of arresting the blood loss from his pelvic injury. (4 marks)

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CT scans have revealed active arterial haemorrhage related to his pelvic injury, but no other obvious injuries.

His vital signs are:

GCS	14	E4 V4 M6
Pulse	135	/min
BP	70/40	mmHg
O2 saturation	98%	6L O2 via mask
Temp	36.5	degrees



**SAQ Q 7**

A 4 year old girl has been brought to your ED with an exacerbation of asthma.

1. List 6 features of your examination that would lead to you concluding that this exacerbation is life-threatening in severity. (6 marks)

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You have assessed the girl to be experiencing a life-threatening exacerbation of asthma.

2. List 5 treatments you would use including doses. (5 marks)

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**Candidate initials:** \_\_\_\_\_

3. List the drugs you would use to facilitate intubation if necessary. Include doses.  
(2 marks)

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Candidate initials: \_\_\_\_\_

**SAQ Q 8**

A 2 year old girl has been brought to your ED with a rash. She has been unwell with fever for 5 days. She had been seen by her local doctor 2 days ago.

Her rash is shown in the clinical image below.



Candidate initials: \_\_\_\_\_

1. In point form, describe the image.

(4 marks)

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2. Give your diagnosis for the rash.

(2 marks)

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3. List the 2 most common aetiological groups responsible for this rash, and 4 specific agents in each group.

(6 marks)

Group	Specific agent

**SAQ Q 9**

The ambulance service has brought a 23 year old man to your ED. He was found wandering the streets naked. He became aggressive while being transported to hospital.

On arrival to the triage desk, he is swearing loudly and trying to leave.

He is known to have a history of schizophrenia and drug use.

1. Give the 2 legislative principles of care that might allow you to keep this man against his will. For each principle of care, list 2 main conditions that must be met. (6 marks)

Legislative Principle	Conditions that must be met

**Candidate initials:** \_\_\_\_\_

2. List 5 main steps in restraint of this man, in escalating order. Where appropriate, give initial doses of medications. (5 marks)

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During the management of this patient, one of your junior doctors has received a needle-stick injury from a hollow-bore needle used on the patient.

3. Complete the table about risk of transmissible disease in this scenario. (3 marks)

<b>SOURCE – known to have disease</b>	<b>Risk of transmission</b>
Hepatitis B	
Hepatitis C	
HIV	

**SAQ Q 10**

You are the director of your Emergency Department. The mother of a 4 year old boy has rung to complain about the treatment her son received in your ED.

The boy was seen in your ED the day prior with abdominal pain and sent home. Due to ongoing pain, he was taken to another hospital where the diagnosis of testicular torsion was made. At surgical exploration, the testis was found to be non-viable.

1. List 4 points that you would convey to the mother during your conversation (4 marks)

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2. List 5 important aspects in your management of this situation (5 marks)

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Candidate initials: \_\_\_\_\_

3. List 6 possible causes for this situation

(6 marks)

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**SAQ Q 11**

A 5 year old boy has been brought to your ED with a 2 day history of fever, cough and lethargy.

He has the following vital signs:

Temp	38.8	degrees
Pulse	145	/min
BP	90/40	mmHg
RR	40	/min
O2 sats	91%	room air

Examination of his chest reveals decreased breath sounds and crackles in the right lung base.

He has had a venous blood gas taken:

pH	7.18		(7.35 – 7.45)
pCO <sub>2</sub>	21	mmHg	(35 – 45)
pO <sub>2</sub>	25	mmHg	(80 – 100)
HCO <sub>3</sub> <sup>-</sup>	8	mmol/L	(22 - 32)
BE	-18.5	mmol/L	(-3 - +3)
Na	140	mmol/L	(135 – 145)
K	5.7	mmol/L	(3.5 – 5.0)
Cl	98	mmol/L	(100 – 110)
Glucose	38	mmol/L	(3.0 – 7.8)



**SAQ Q 12**

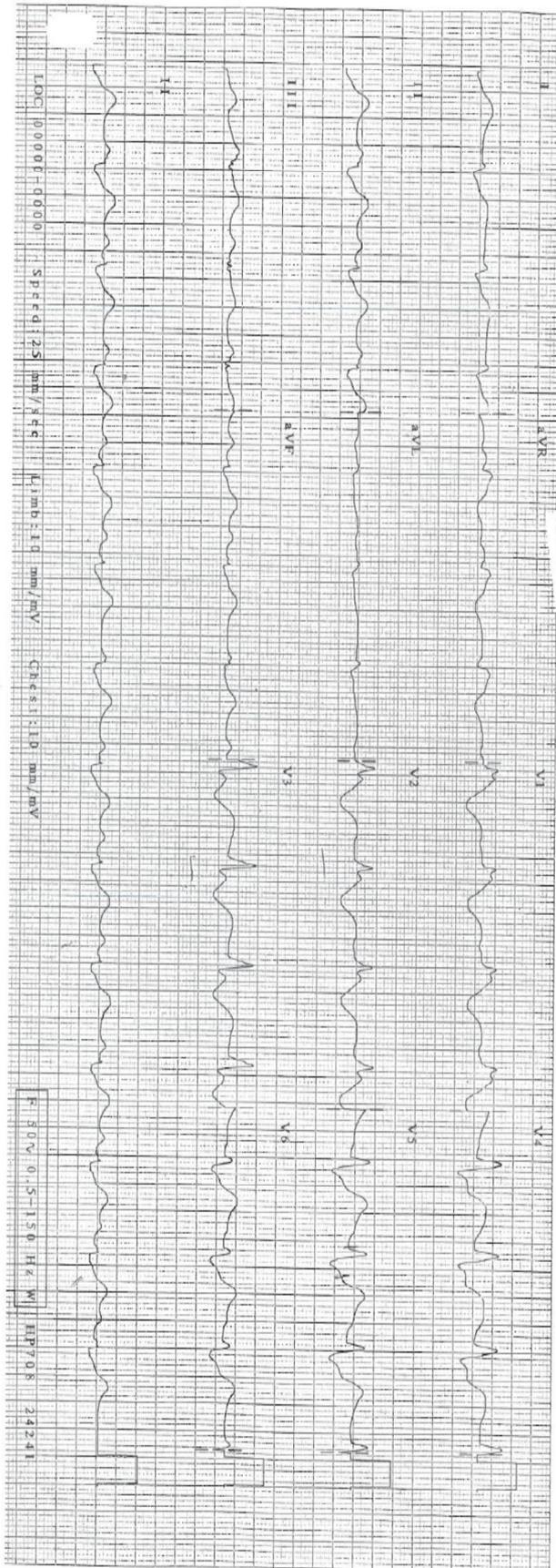
A 35 year old woman has been brought to your hospital by ambulance. Her husband arrived home to find her unconscious on her bed. She had written a suicide note. An overdose is suspected, although no empty medication packets could be found.

Her vital signs are:

GCS	8	(E1 V2 M5)
BP	75/45	mmHg
O2 sats	99%	15L O2 via non-rebreather
Temp	36.0	degrees

An ECG is performed.

Candidate initials: \_\_\_\_\_



Rx:   
 Dx:   
 Rate 83   
 PR 186   
 QRS SD 76   
 QT 409   
 QTc 481   
 --AXIS--   
 P 88   
 QRS 231   
 T 76

Candidate initials: \_\_\_\_\_

1. List the main abnormalities on the ECG (3 marks)

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2. What group of drugs most commonly give this clinical picture? (1 mark)

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After a brief period, the patient begins to have a generalised seizure.

3. List your initial management steps, including drugs, doses and end-points where appropriate. (10 marks)

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Candidate initials: \_\_\_\_\_

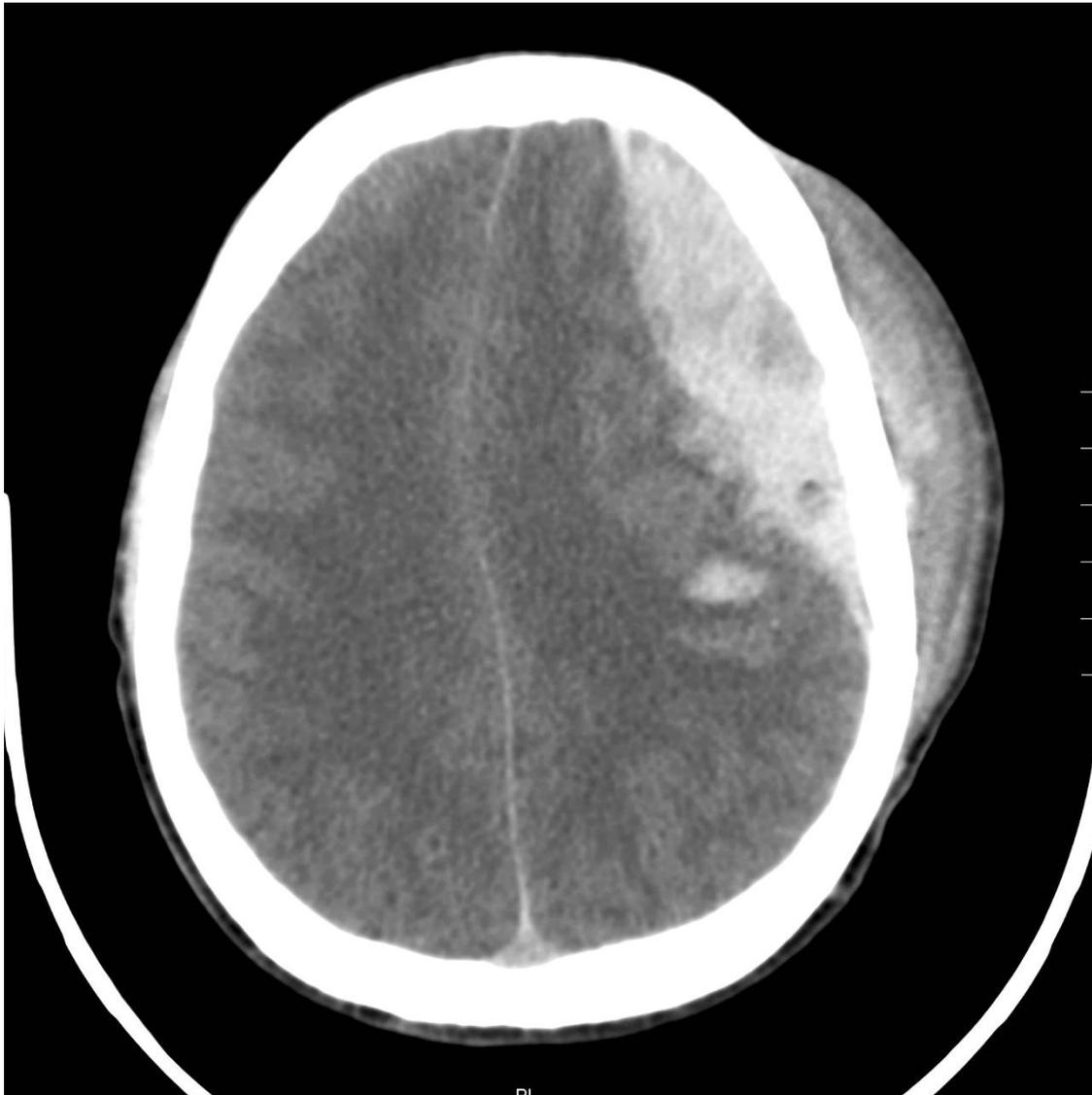
**SAQ Q 13**

A 29 year old man has been brought to your hospital after being hit to the head by a baseball bat. He has no prior medical history.

His vital signs on arrival to the ED are:

GCS	11	E2 V2 M5
Pulse	110	/min
BP	110/65	mmHg
O2 sats	99%	6L O2 via mask

A CT scan of his head has been performed.



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Candidate initials: \_\_\_\_\_

1. List 5 abnormalities on the CT slice.

(5 marks)

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2. List your treatment priorities in the ED. Where appropriate, give end-points. (9 marks)

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Candidate initials: \_\_\_\_\_

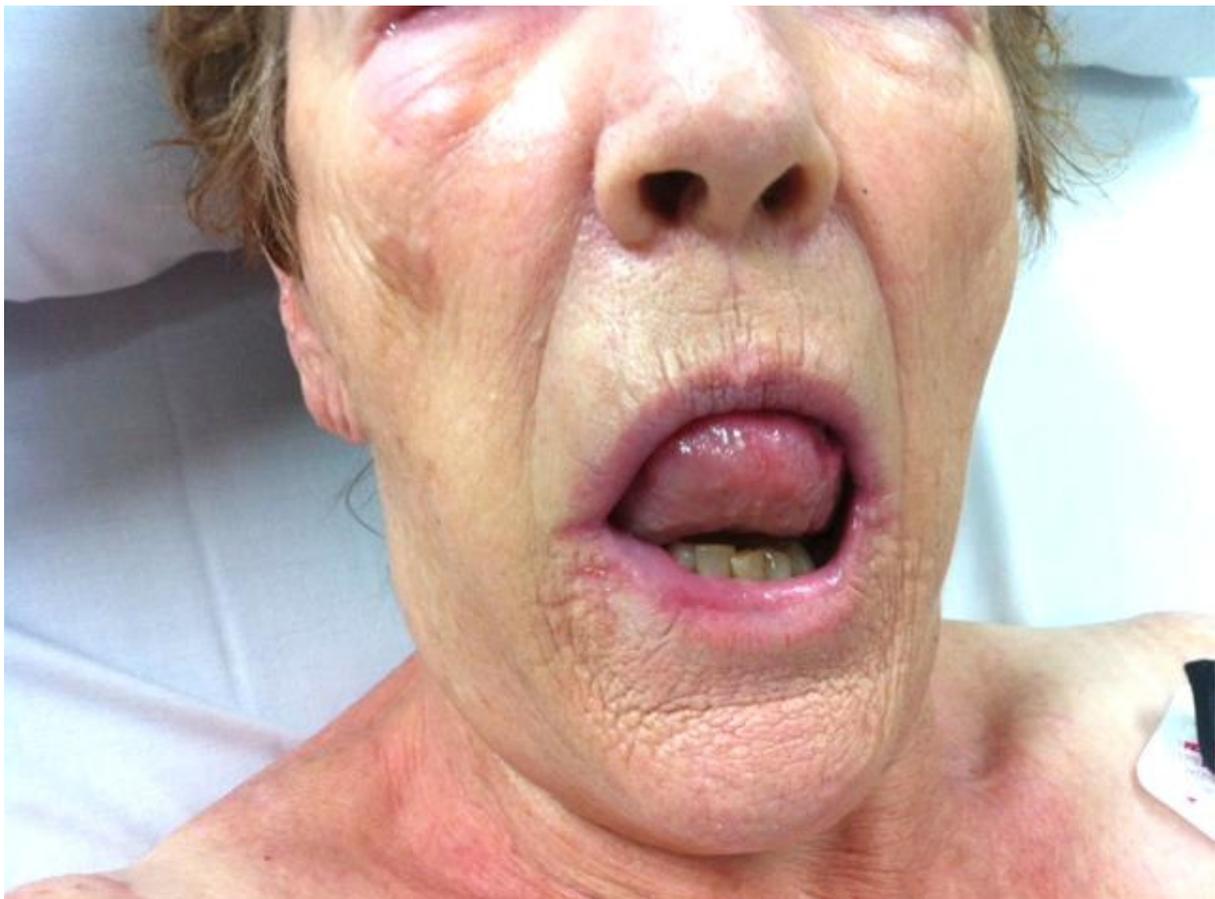
**SAQ Q 14**

A 62 year old lady presents with difficulty breathing after eating dinner. She has a history of ischaemic heart disease.

On arrival, her vital signs are:

GCS	15	
Pulse	130	/min
BP	85/45	mmHg
O2 sats	98%	room air

Her photo is reproduced:



Candidate initials: \_\_\_\_\_

1. Briefly describe 2 abnormalities in the photo. (2 marks)

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2. What is your clinical interpretation of the information given? (2 marks)

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3. List 3 signs of impending airway obstruction in this patient. (3 marks)

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You have assessed the patient as not requiring immediate airway management.

4. List your 2 main treatment steps. Give doses and endpoints. (4 marks)

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**SAQ Q 15**

A young mother has just delivered a baby in your resuscitation cubicle. She was estimated to be 36 weeks gestation. There was no meconium staining of the amniotic fluid.

You are tasked with managing the child.

1. What are the 3 initial assessment features in neonatal resuscitation? (3 marks)

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The child is not breathing.

2. What is your initial action? (1 mark)

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Candidate initials: \_\_\_\_\_

3. List 4 additional actions you may perform during the resuscitation of this child. For each, give the indication. (8 marks)

Action	Indication

Candidate initials: \_\_\_\_\_

**SAQ Q 16**

A 75 year old man has been brought to the ED with abdominal pain. He has come from a nursing home. His background history includes dementia and ischaemic heart disease.

An Xray has been performed:



Candidate initials: \_\_\_\_\_

1. Give your diagnosis/diagnoses with supportive Xray findings. (4 marks)

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2. List 3 specific treatment options for this patient's problem. (3 marks)

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3. List 2 features of your supportive treatment. Include doses and end-points. (4 marks)

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4. List 3 important considerations in determining your ceiling of care. (3 marks)

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Candidate initials: \_\_\_\_\_

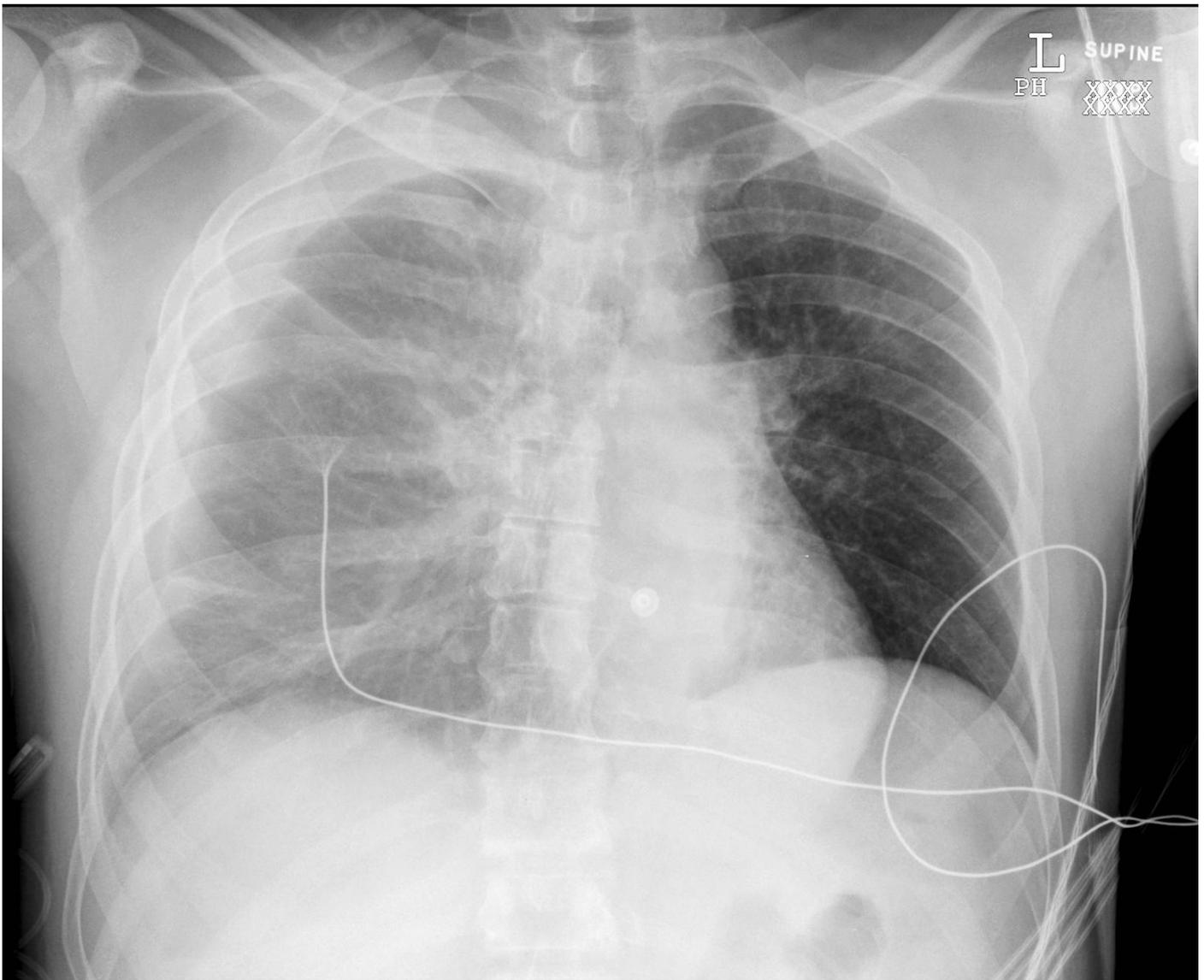
**SAQ Q 17**

A 45 year old man has been brought to your ED by ambulance after being stabbed once in the right side of the chest.

On arrival, his vital signs are:

GCS	15	E4 V4 M6
Pulse	120	/min
BP	85/40	mmHg
O2 sats	94%	15L O2 via non-rebreather mask

A chest Xray has been performed.



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Candidate initials: \_\_\_\_\_

**SAQ Q 18**

A 50 year old man presents to your ED with palpitations.

On examination, you have found him to be in atrial fibrillation with a rapid ventricular rate.

1. List your criteria for consideration of this man for cardioversion in the ED. (4 marks)

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2. List 2 drugs you could use for chemical cardioversion. For each drug, give the dose and 2 contra-indications. (8 marks)

Drug	Dose	Contra-indications

**Candidate initials:** \_\_\_\_\_

3. List 3 drugs you could use intravenously for rate control. For each drug, give the dose. (6 marks)

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4. How would you assess this man's risk of thrombo-embolism? (1 mark)

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**SAQ Q 19**

A 23 year old man has been brought to your ED after having a seizure at a dance party. He has no known medical history.

On arrival, his vital signs are:

GCS	8	E 2 V 2 M 4
Pulse	120	/min
BP	110/70	mmHg
Temp	41.0	degrees
O2 sats	100%	6L O2 via mask

1. List 3 possible non-toxicological causes of this presentation. (3 marks)

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Candidate initials: \_\_\_\_\_

2. List 3 possible toxicological causes of this presentation. For each, give 3 cardinal examination features that would suggest the diagnosis. (12 marks)

Cause	Cardinal examination findings

3. List 4 methods of cooling appropriate for this patient. (4 marks)

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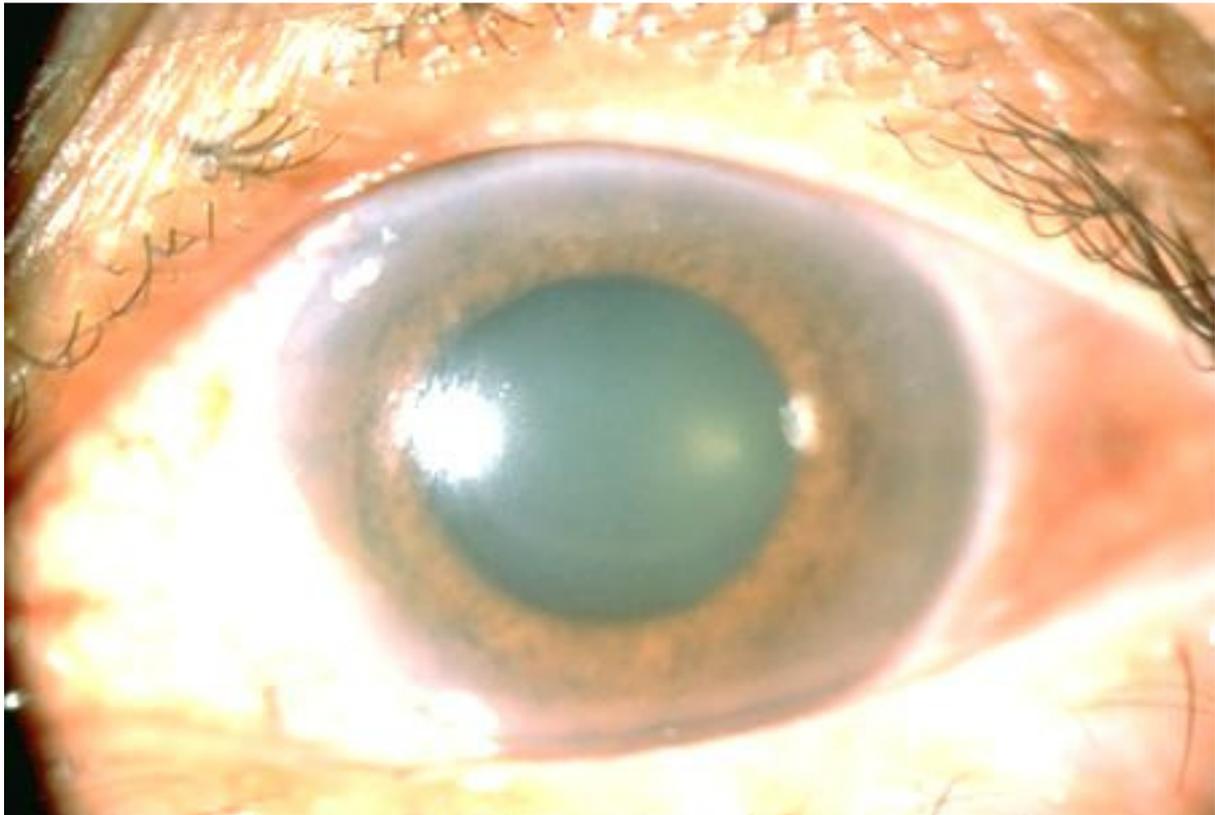
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**SAQ Q 20**

A 65 year old man has presented to the ED with a painful left eye. The pain developed over 30 minutes while he was at the movie theatre.

A clinical photo of his right eye is given.



1. List 3 abnormalities in the clinical photo.

(3 marks)

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Candidate initials: \_\_\_\_\_

2. Give your clinical impression of the photo. (2 marks)

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3. List 3 specific treatment steps for this patient. (3 marks)

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4. List 2 supportive treatment steps for this patient. (2 marks)

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Candidate initials: \_\_\_\_\_

**SAQ Q 21**

A 45 year old man has presented to the ED with cough of 2 weeks duration.

His chest Xray is given below.



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**Candidate initials:** \_\_\_\_\_

1. Describe the main abnormality on the chest Xray. (2 marks)

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2. List 3 relevant negatives on review of the chest Xray. (3 marks)

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3. List 3 groups of pathological causes for this abnormality. For each, give 2 aetiological agents. (6 marks)

Pathological cause	Aetiological agent

**SAQ Q 22**

A 55 year old woman has been referred to the ED by her GP with a 2 day history of bilateral leg weakness. Her GP suspects Guillain-Barre syndrome.

1. List 6 differential diagnoses for this patient's weakness. (Do not include GBS) (6 marks)

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2. List 3 cardinal features on examination you would expect to find that would be consistent with classical Guillain-Barre syndrome. (3 marks)

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**Candidate initials:** \_\_\_\_\_

3. List 3 investigations that will be useful in supporting the diagnosis of GBS. Include the expected findings. (6 marks)

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4. List 2 life-threatening complications of GBS. For each complication, mention how you will detect its presence or severity. (4 marks)

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SAQ Q 23

A 25 year old man presents with foot pain after falling off a ladder on to his left foot.

His Xray is shown.



Candidate initials: \_\_\_\_\_

1. Describe the abnormalities on the Xray.

(5 marks)

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2. List 2 important early complications of this injury.

(2 marks)

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3. List 5 management steps.

(5 marks)

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**SAQ Q 24**

You are the consultant on duty in a tertiary ED during a Saturday evening shift.

You have received notification of a mass casualty incident. A grandstand at a local football ground has collapsed. There might be as many as 400 injured people on the scene.

1. List 8 important steps you would take to prepare for managing this situation. (8 marks)

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2. List 6 problems that you may encounter during the first 24 hours. (6 marks)

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Candidate initials: \_\_\_\_\_

**SAQ Q 25**

A 68 year old woman has been brought to your tertiary ED by ambulance. She has had chest pain for the last 3 hours.

On arrival, her vital signs are:

GCS                      15

BP                        80/40                      mmHg

O2 sats                    100%                      6L O2 via Hudson mask

Her ECG is given below.

Candidate initials: \_\_\_\_\_



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Candidate initials: \_\_\_\_\_

1. Give the rate, rhythm and axis of the ECG. (3 marks)

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2. Give the main pathology identified on the ECG, with evidence. (3 marks)

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3. List your treatment steps, including drugs and doses where appropriate. (6 marks)

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**SAQ Q 26**

A 67 year old man has been brought to your ED after being found on the floor of his bedroom with an altered level of consciousness.

After initial assessment, you conclude that his altered level of consciousness is due to hyponatremia, with a serum sodium level of 112.

1. List 5 features of collateral history you would like to obtain to help you elucidate the cause of his hyponatremia. Include a reason for each crucial piece of history. (5 marks)

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2. List 5 investigations you would use to help you elucidate the cause of his hyponatremia. Include the result for which you will be looking. (5 marks)

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Candidate initials: \_\_\_\_\_

After a short period of time, the patient begins to have a seizure.

His vital signs are:

Temperature	36.0	
Pulse	110	/min
BP	120/85	mmHg
O2 sats	98%	room air

3. List your 2 initial pharmacological treatment steps. Include doses and end-points. (4 marks)

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**SAQ Q 27**

A 47 year old woman presents to your ED with fever and myalgias. She has a history of lymphoma.

1. List 5 factors will influence your choice of antibiotics. State how each factor will affect your choice. (5 marks)

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Her vital signs are:

GCS	15	
Pulse	135	/min
BP	75/45	mmHg
RR	22	/min
O2 sats	98%	on room air
Temp	39.5	degrees

Your assessment does not reveal any localising signs for her illness.



**SAQ Q 28**

A 69 year old man has been brought to the ED after an overdose of an unknown quantity of quetiapine and diazepam. He was found on the floor of his apartment by his landlord. Due to a reduced level of consciousness, he has been intubated.

His blood results are shown:

Na	136	mmol/L	(135 – 145)
K	8.3	mmol/L	(3.5 – 5.1)
Cl	101	mmol/L	(100 – 110)
HCO <sub>3</sub>	16	mmol/L	(22 – 32)
Urea	15	mmol/L	(2.9 – 8.2)
Creatinine	285	umol/L	(64 – 108)
Glucose	7.3	mmol/L	(3.0 – 7.8)

1. List the abnormalities on the blood results, giving likely possible causes of each abnormality.  
(6 marks)

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**Candidate initials:** \_\_\_\_\_

2. What is the most likely clinical scenario responsible for the above blood picture? (2 marks)

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3. List your management steps for his hyperkalaemia. Give doses. (4 marks)

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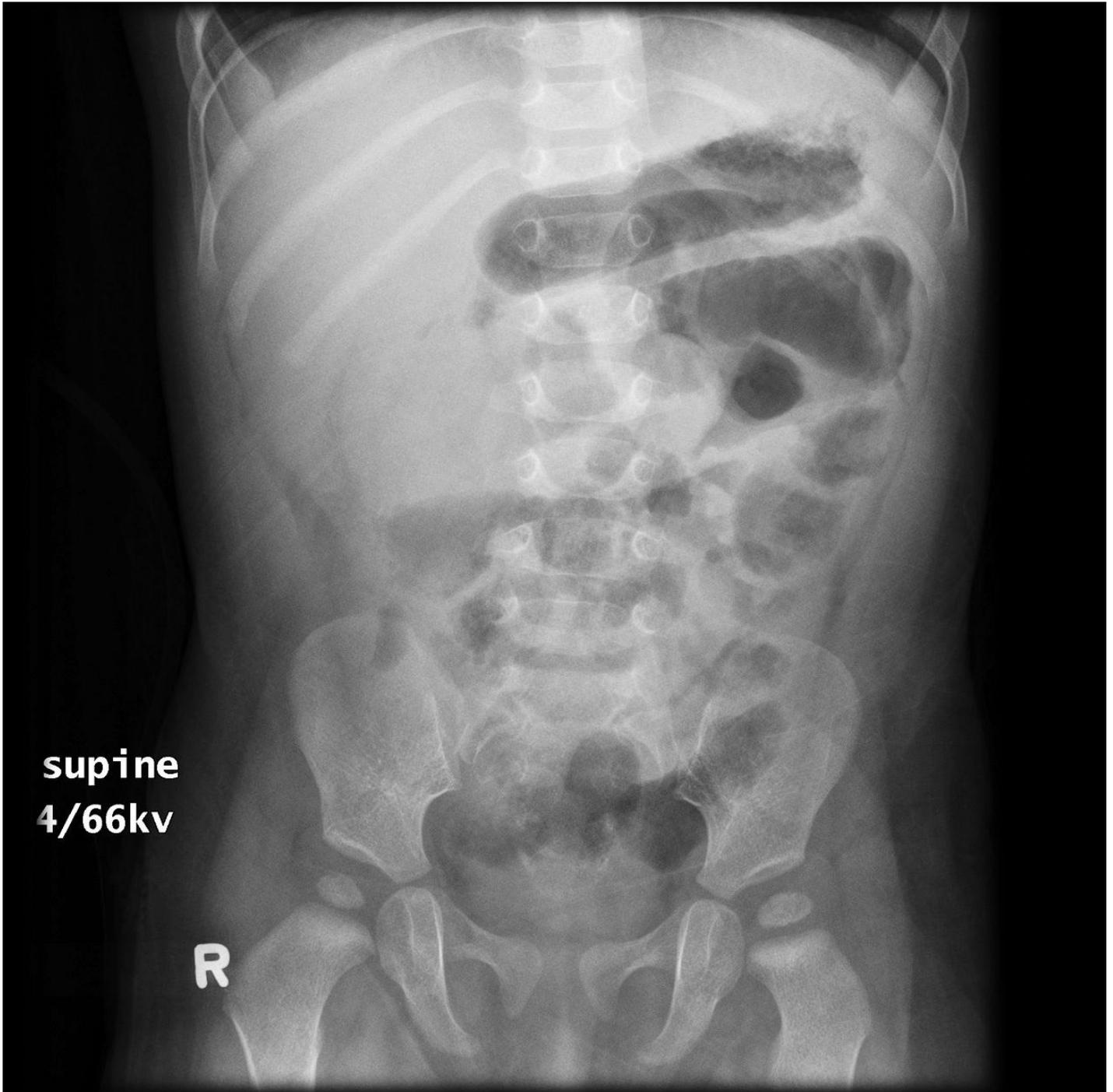
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Candidate initials: \_\_\_\_\_

SAQ Q 29

A 3 year old boy has been brought to your urban district ED with abdominal pain.

His abdominal Xray is shown.



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1. Describe the abnormalities on the Xray and give your diagnosis. (2 marks)

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The patient appears quite distressed and is crying inconsolably. He looks pale.

His vital signs are:

AVPU	Alert	
Pulse	140	/min
BP	85/45	mmHg
RR	26	/min
O2 saturations	99%	room air

2. List the important details of your management, including disposition. Give doses and endpoints where appropriate. (5 marks)

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**Candidate initials:** \_\_\_\_\_

3. List 2 management options for this condition. For each option, outline when it would be used. (4 marks)

<b>Management option</b>	<b>When it would be used</b>

4. List 2 complications of this condition. (2 marks)

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**SAQ Q 30**

A 12 year old boy has been brought to your ED after falling off a swing and injuring his wrist. The child weighs 40kg. Your assessment has revealed a dorsally angulated fracture of the distal radius. The fracture needs manipulation and placement in a plaster cast. You have decided to perform this procedure in the ED.

1. Give three different methods of procedural sedation for this patient. For each method, give two advantages and two disadvantages. Give doses where appropriate. (15 marks)

**Method 1** \_\_\_\_\_

Advantages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Disadvantages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Candidate initials: \_\_\_\_\_

**Method 2** \_\_\_\_\_

Advantages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Disadvantages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Method 3** \_\_\_\_\_

Advantages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Disadvantages \_\_\_\_\_  
\_\_\_\_\_  
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