

SAQ 23

12 Marks

A 77yr old man presents 7 days after being discharged following a total colectomy for a newly diagnosed obstructing bowel cancer. He describes non-specific symptoms of malaise, lethargy and nausea.

His blood results are;

Na	127	(135-145 mmol/L)
K	6.1	(3.5 – 5.2 mmol/L)
Ur	37.1	(2.9 – 8.2 mmol/L)
Cr	700	(64 – 108 mmol/L)
eGFR	6	(>60 mL/min)
HCO ₃	12	(22-32 mmol/L)
Cl	95	(95-110 mmol/L)

1. State THREE abnormalities, including any equations used, on these blood results (3 marks)

2. List FOUR potential causes for this gentleman's presentation and blood results (4 marks)

3. List FIVE investigations you might perform. Include a clinical indication for each investigation. (5 marks)

Investigation	Justification

SAQ 1 (18 marks)

A 67 year old male patient was brought into the ED by his family after he collapsed at home. His past medical history includes dialysis-dependent chronic renal failure (secondary to diabetic nephropathy), hypertension, ischaemic heart disease and congestive cardiac failure.

His initial vital signs in ED are as follows:

GCS	15	
BP	80/50	mmHg
P	80	bpm
RR	30	/min
SpO ₂	90%	on room air

- a. List four (4) specific point of care / bedside test which are indicated in this patient AND state your justifications (8 marks)

	Bedside tests (4 marks)	Justification (4 marks)
1		
2		
3		
4		

Candidate number _____

- b. An ECG is performed (**see prop booklet**). List three (3) diagnostic abnormalities in his ECG and state your unifying diagnosis (4 marks)

	ECG abnormalities (3 marks)
1	
2	
3	

Diagnosis (1 mark)	
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- c. In view of the ECG findings, list three (3) ways you would correct the abnormality suggested by this ECG AND the treatment principle/goal for each (6 marks)

	Correct by: (drug and dose OR method) (3 marks)	Treatment principle/goal (3 marks)
1		
2		
3		

SAQ 20 (11 marks)

You are working in a rural ED. A 6-year-old boy has been sent in by the GP. He has been generally unwell with a recent febrile illness and discoloured urine.

Parents deny any previous episodes of discoloured urine. The child has no relevant previous medical history.

The observations are as follows:

HR 100 bpm

T 37.2 °C

BP 135/85 mmHg

Sats 98% room air

On examination the child looks tired but otherwise well.

His chest is clear, heart sounds normal and ENT examination is unremarkable. The abdomen is soft and non-tender with no masses felt. There is no joint swelling and no rash.

He has some healing skin sores on his leg and he is a little puffy around the eyes.

- a) A urine sample shows dark reddish-brown blood in the urine, which on microscopy appears to be from the upper urinary tract. List three (3) disease entities/conditions which will produce this type of haematuria. (3 marks)

1.

2.

3.

- b) List four (4) specific features from your **history** in this child which would help you narrow down your diagnosis? (4 marks)

1.

2.

3.

4.

- c) What is the most likely diagnosis in this child given the description above? (1 mark)

1.

- d) List three (3) further investigations you would request to help confirm the diagnosis and explain how they might help. (3 marks)

1.

2.

3.

Candidate initials: _____

Q19 (12 min)

A 60 year old Indigenous man has presented with lethargy.

He has end-stage renal failure due to type 2 diabetes mellitus.

He has missed his last three sessions of haemodialysis.

1. List 4 indications for emergent haemodialysis in this man. (4 marks)

You note that the patient attended ED twice in the last week but discharged against medical advice on both occasions.

2. List 4 strategies recommended by ACEM in the *Statement on Culturally Competent Care and Cultural Safety* that could be employed to ensure culturally safe patient-centred care for this man. (4 marks)

1) _____

2) _____

3) _____

4) _____

Candidate initials: _____

An ECG was taken and is provided in the **PROPS BOOKLET**.

3. State the main pathology with 3 supportive features on the ECG. (4 marks)

Main pathology

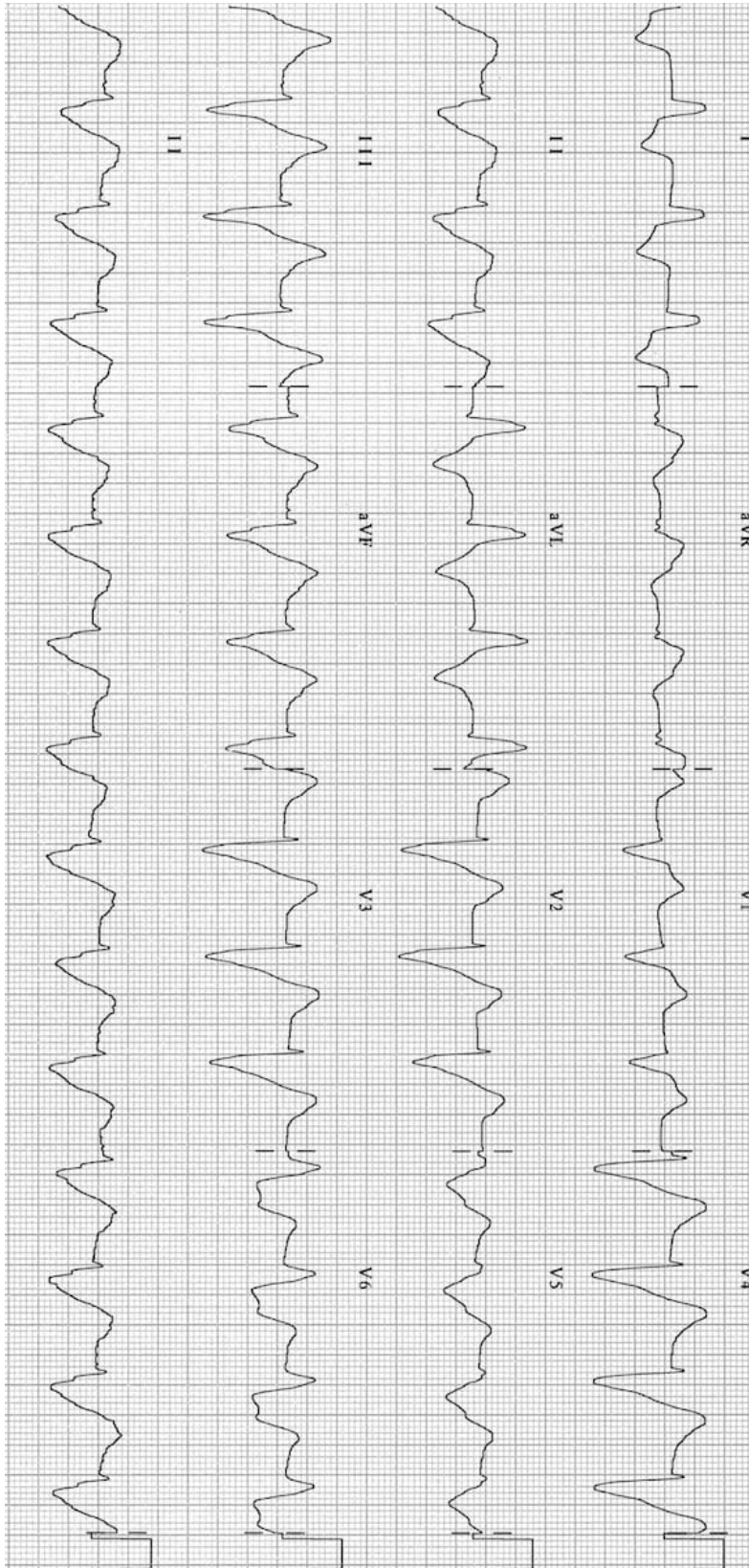
Supportive features

Candidate initials: _____

4. In the following table, list 4 medications you could use to manage the pathology identified on the ECG prior to haemodialysis. For each, state the mechanism of action and expected time to onset. (12 marks)

Medication	Mechanism of action	Time to onset of action

Q19





SAQ 11:

Candidate name:-----

A 59 year old wheel chair bound paraplegic presents with chest pain and SOB.
He has a history of clipped Circle of Willis aneurysm which was done 6 years ago.
He does not have a headache. A CTPA confirms he has a massive PE.

His vital signs are:

GCS 15/15
HR 114
BP 87/39
RR 24
SaO2 97% with O2 15 L/min via non re-breather mask

Questions:

1- List 8 sequential steps in the management of this patient? (8 marks)

2-Briefly describe 3 ethical and medico-legal issues in this situation (3 marks)

Question 24

A 43 year old man with a history of chronic cough and wheeze has presented with respiratory distress and hemoptysis.

Other than pulmonary hemorrhage and renal failure, list two other manifestations of Wegener's granulomatosis (Granulomatosis with Polyangiitis - GPA) (2 marks)

Contrast the rationale for intubation and treatment of pulmonary hemorrhage in GPA and solitary lung tumour. (4 marks)

	GPA	Tumour
Rationale for intubation (1 mark each)		
Treatment of haemorrhage (1 mark each)		

List one blood test you may order to confirm a diagnosis of GPA. (1 mark)

List two infectious diseases which may cause hemoptysis and renal failure. (2 marks)

Candidate Name: _____

List two other non-infective causes for a patient presenting with both hemoptysis and hematuria. (2 marks)

Candidate Name: _____

Candidate initials: _____

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)

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)

Candidate initials: _____

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

SAQ 21: (6 Minutes)
Total Marks 12

Candidate Name:

A 28 year old female patient presents to your regional ED with a fever and cough. She is 6 months post-op from a double lung transplant for cystic fibrosis.

Her vital signs are:

Temp	38.0
HR	105
BP	120/75
RR	24
O2 sats	91% on RA

Her CXR is shown below.



Questions:

1. Describe the key findings on her CXR. (2 marks)

2. List 5 differential diagnosis for her presentation.

(5 marks)

3. Outline 5 key steps in your management of this patient in the ED.

(5 marks)

SAQ 17 (12 marks)

Candidate name:

A 20 year old known asthmatic has presented to your tertiary ED with an acute exacerbation of asthma. She was initially seen by your registrar and has been appropriately treated with supplemental oxygen, salbutamol (5mg X 5) and ipratropium (500mcg X 3) nebulisation and IV hydrocortisone 200 mg.

She has failed to improve after 60 minutes of the above treatment. You have been asked to advise on a further course of action.

1. List (4) other treatment options for this patient.

(4 marks)

The patient continues to deteriorate and has become more obtunded with poor respiratory effort. You decide to proceed with intubation.

2. List (4) steps you will take to optimise the patient before proceeding with RSI.

(4 marks)

The patient's BP drops to 80/ 40 immediately post intubation.

3. List (4) immediate measures you will take to manage this. (4 marks)

SAQ 27 (12 marks)

A 1 year old boy has been unwell with cough for a week. Today he was eating spaghetti when he seemed to gag and have difficulty breathing over a period of 1 minute. His mum reports he is now clingy with a 'strange cough'.

The following vital signs are recorded:

HR	120	bpm
BP	90/50	mmHg
SpO2	90%	on room air
RR	24	/min
T	37.5	°C
Weight	10	kg

He is alert and responsive and comfortable in his mother's arms.

On physical examination he has multiple petechiae around his eyes, and an intermittent cough. He has mild indrawing of intercostal muscles and mild tracheal tug, but no stridor.

- a. Provide an explanation for the physical examination findings (not including the vital signs) (3 marks)

Chest X-rays are performed (**see props booklet**).

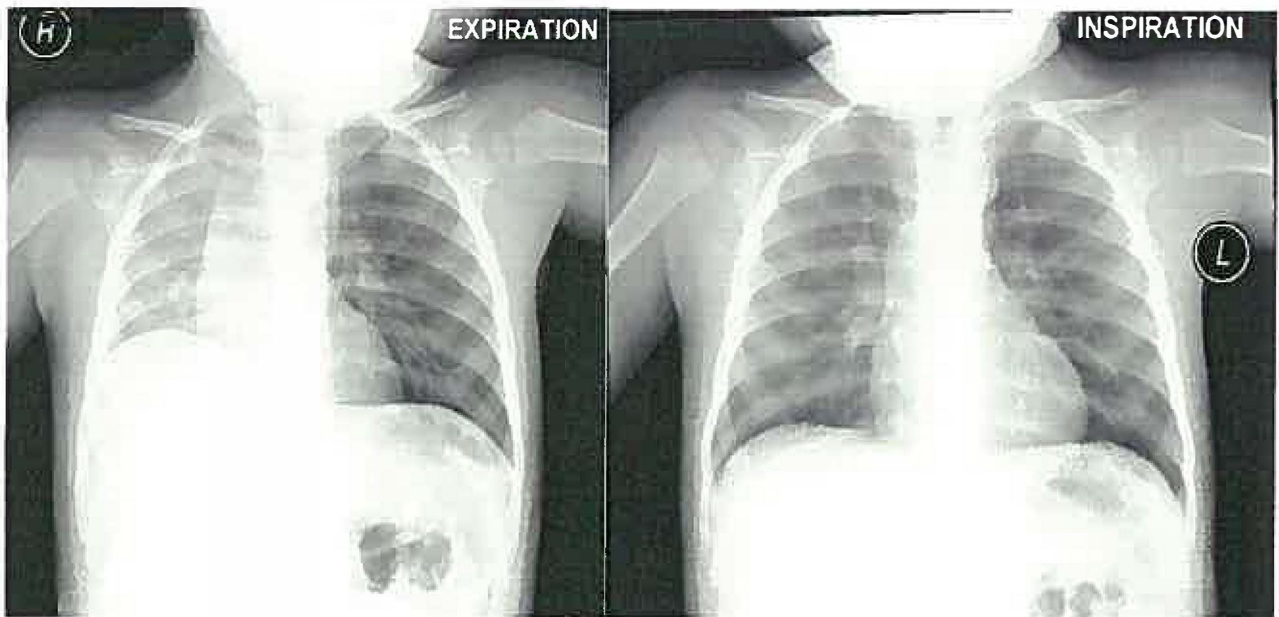
- b. List three (3) significant findings on the CXR (3 marks)

c. What is your diagnosis? (1 mark)

After a short coughing spell the infant becomes cyanosed and unresponsive. No chest movement is obtained despite good self-inflating bag-and-mask ventilation. The child remains cyanosed and no oxygen saturations can be obtained. Chest thrusts have been given without effect.

d. Outline your management of the infant's airway (5 marks)

Prop for SAQ 27





SAQ 7:

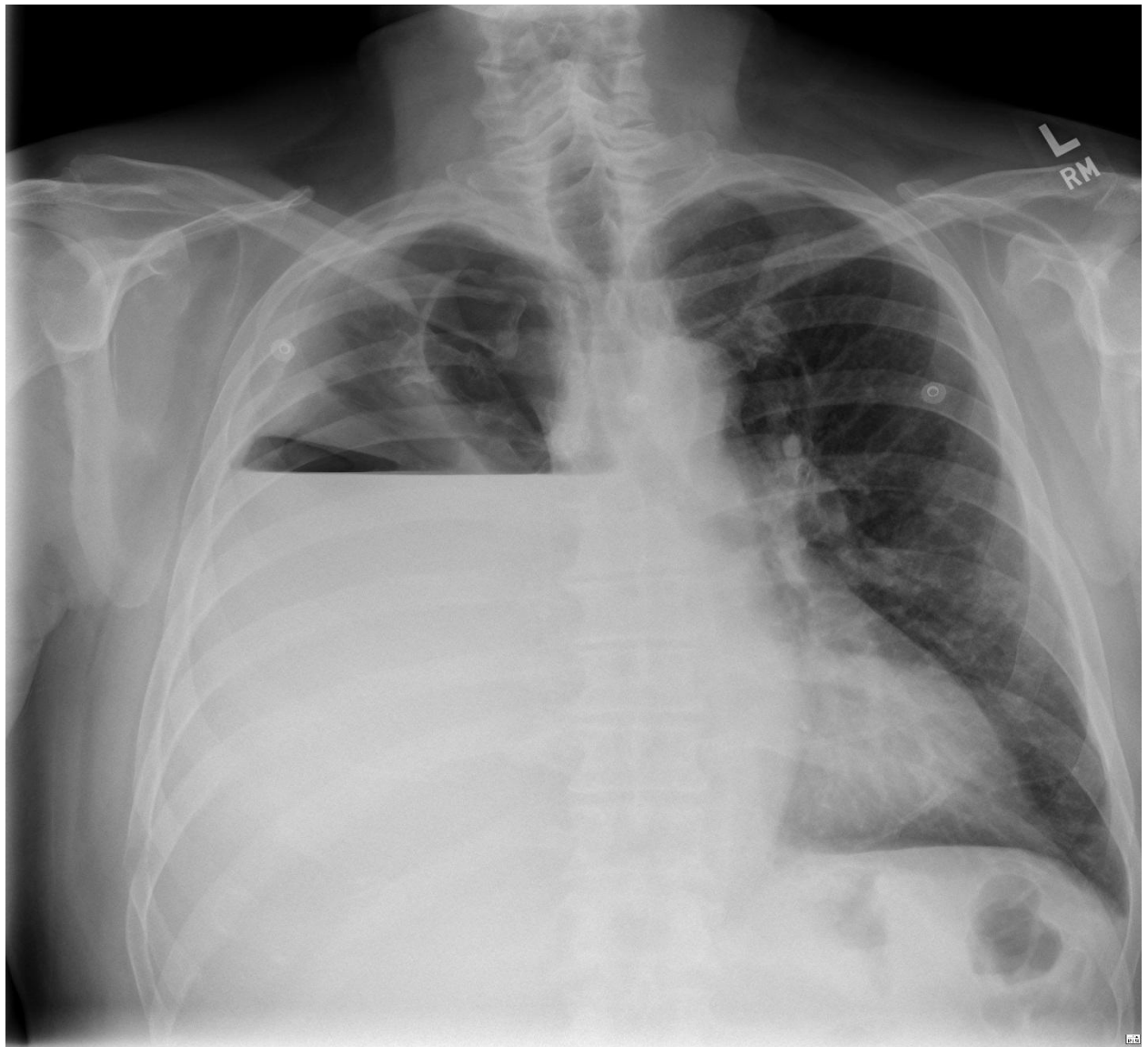
Candidate name:-----

A 75 year old male with a history of lung cancer is brought to your Emergency Department by ambulance complaining of worsening dyspnea for 2 days.

His vital signs are:

HR 120, SR
BP 95/55
SaO2 88% on 4L Nasal prong oxygen
Temp 37.5
GCS 13/15 (E4M5V4)

A mobile chest X-ray is performed:





Questions:

1. List 3 relevant positive and 2 relevant negative findings on this CXR.
(5 Marks)

POSITIVES:

Negatives:

-
2. In point form, describe the immediate management priorities in this case
(3 Marks)

3. List the parameters needed to help distinguish between a transudate and an exudate pleural effusion in general?
(4 marks)

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)

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

FiO ₂	0.5		
pH	7.26	mmHg	(7.35 – 7.45)
pCO ₂	86	mmHg	(35 – 45)
pO ₂	52	mmHg	(60 – 100)
HCO ₃	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)

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

Candidate initials: _____

Q6

A 44 year old woman has presented with large volume haemoptysis.

1. List 6 investigations you might perform. Provide justification for each. (6 marks)

Investigation	Justification

Candidate initials: _____

The patient required intubation as part of her management.

The patient's vital signs are:

Pulse	115	/min
BP	110/70	mmHg
O2 sats	95%	FiO2 0.7

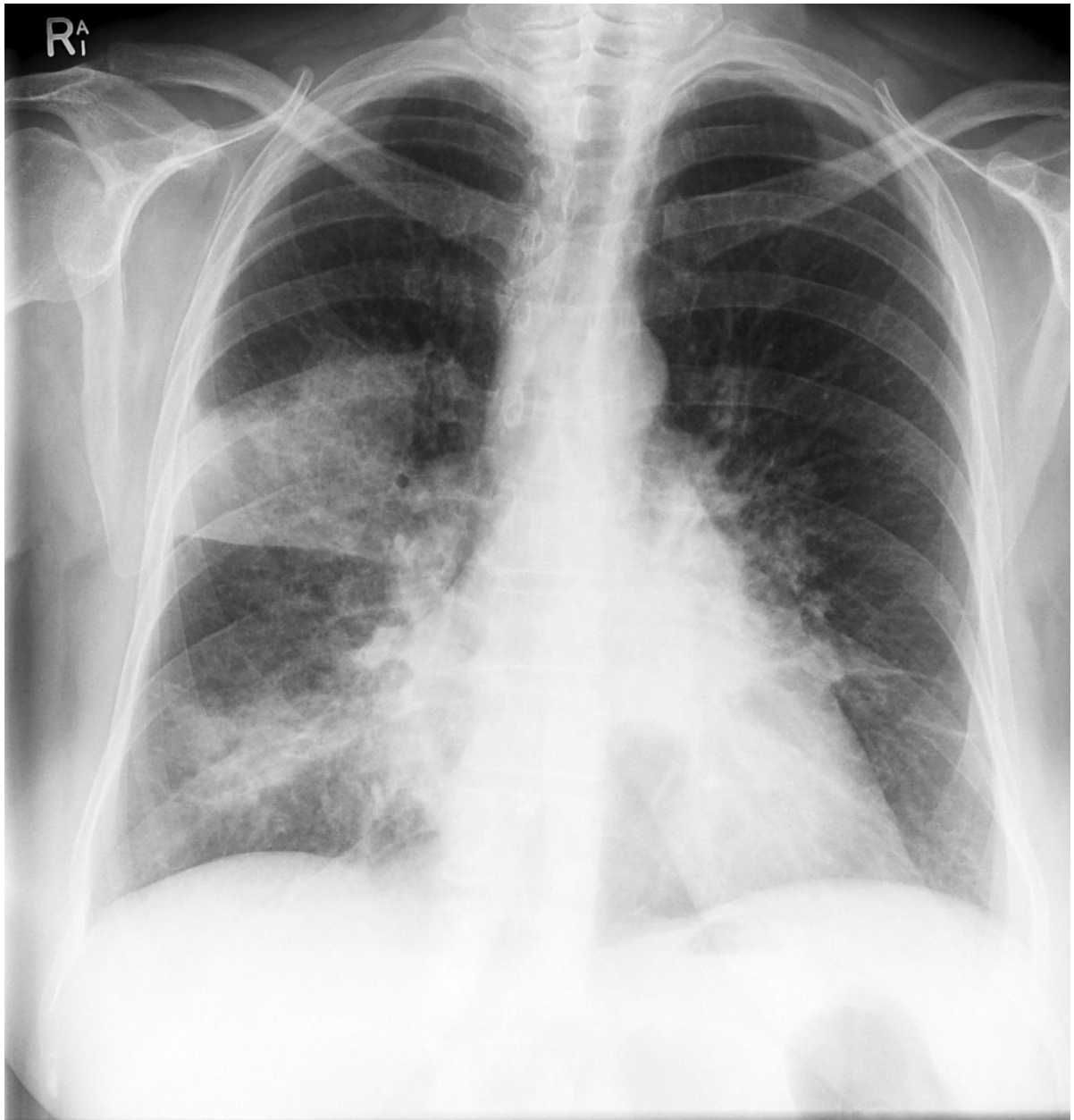
2. List 3 options for definitive management of this patient's haemoptysis. For each, give the clinical circumstances in which it would be appropriate. (6 marks)

Management option	Clinical circumstance

SAQ 5

A 60 year old woman has presented to the ED with a 2 day history of shortness of breath and cough.

Her chest x-ray is given below.



Candidate initials: _____

1. List the abnormalities on the chest x-ray, including the radiographic supporting evidence. (5 marks)

2. Give your interpretation of the Xray findings. (2 marks)

Candidate initials: _____

Her vital signs are:

GCS	15	
Pulse	120	/min
BP	100/60	mmHg
RR	38	/min
O2 sats	88%	room air
Temperature	38.5	degrees

3. List your treatment steps. Give details of your doses and end-points where appropriate. (5 marks)

Question 9 (12 marks)

A patient presents to the ED with vomiting and chest pain. He was discharged from the ED short stay unit 48 hours ago with a diagnosis of 'cannabis hyperemesis syndrome'.

You are asked to review his chest x-ray (CXR) which is reported as '*pneumomediastinum, otherwise normal*'. He re-presents at your request.

(i) List the MOST likely causes of pneumomediastinum in this patient (3 marks)

	Causes of pneumomediastinum
MOST likely cause	
Other cause 1	
Other cause 2	

(ii) On arrival at triage he is febrile, tachycardic and hypotensive. List four (4) initial management priorities in this case (4 marks)

i)

ii)

iii)

iv)

After a preliminary investigation you discover several incidences of missed CXR findings.

(iii) List five (5) measures that could be implemented in your department to reduce the risk of missed CXR findings (5 marks)

i)

ii)

iii)

iv)

v)
