

FEx Net 2022 Collated SAQs: Clinical Chemistry Questions

1. ABG
2. ABG
3. ABG
4. ABG
5. ABG
6. Collapse
7. Collapse
8. Confusion
9. Confusion
10. Confusion
11. LFTs
12. Seizure
13. VBG
14. VBG
15. VBG
16. VBG
17. Vomiting
18. Vomiting
19. Vomiting
20. Vomiting

I am fully editable
and hyperlinked.
Open in desktop for
all features!

Question 1 (17 Marks)

A 41 year old itinerant alcoholic has been brought to the ED with severe epigastric abdominal pain and vomiting.

His arterial blood gas, taken on room air, is provided.

	Result	Units	Reference Range
pH	7.17		(7.35 – 7.45)
pCO ₂	30	mmHg	(35 – 45)
pO ₂	98	mmHg	(80 – 100)
HCO ₃	11	mmol/L	(18 – 26)
Na	117	mmol/L	(135 – 145)
K	3.5	mmol/L	(3.2 – 4.5)
Cl	64	mmol/L	(100 – 110)
Ca (ionised)	0.74	mmol/L	(1.15 – 1.32)
Lactate	8.1	mmol/L	(0.5 – 2.2)
Glucose	34.2	mmol/L	(3.0 – 7.8)

A 41 year old itinerant alcoholic has been brought to the ED with severe epigastric abdominal pain and vomiting.

His arterial blood gas, taken on room air, is provided above

1. Comment on the following values on the arterial blood gas. Give likely causes for each abnormality. (8 marks)

Electrolyte	Comment	Likely Cause
Sodium		
Potassium		
Chloride		
Calcium		

2. List other **major abnormalities** present, and for each list 2 differential diagnoses.

(9 Marks)

Abnormality	Differential Diagnoses

Question 2 (10 marks)

A 17 year old female presents to the Emergency Department via ambulance after being found by her friends to be in a state of agitation and drowsiness.

An arterial blood gas is taken:

FIO ₂	0.21	
pH	6.90	(7.35-7.45)
pCO ₂	70 mmHg	(35-45)
pO ₂	60 mmHg	(80-110)
HCO ₃ ⁻	8 mmol/L	(23-32)
Base Excess	- 20.5	(-2 - +2)
Sodium	136 mmol/L	(135-145)
Potassium	4.0 mmol/L	(3.5-5.5)
Chloride	90 mmol/L	(90-115)
Urea	18 mmol/L	(3.5-8.0)
Creatinine	0.12 mmol/L	(0.06-0.12)

Questions:

- 1- List 4 metabolic abnormalities including any calculations required.

(4 marks)

2- What is the A-a gradient? (1 mark)

3- List 5 potential causes for her presentation: (5 marks)

Question 3 (19 marks)

A 30 year old man presents to your ED with a 24 hour history of increasing weakness.

An ABG and electrolytes are performed.

ABG

FiO₂ 21%

pH 7.26 mmHg (7.35- 7.45)

pCO₂ 29 mmHg (35-48)

pO₂ 101 mmHg (83-108)

HCO₃ 13 mmol/L (21-28)

BE - 13 mmol/L (-1.5-3.0)

ELECTROLYTES

Na 137 mmol/L (136-146)

K 1.8 mmol/L (3.9-5.2)

C 116 mmol/L (95-110)

Urea 7.8 mmol/L (3.1- 8.1)

Creat 86 mmol/L (60-110)

Glc 4.0 mmol/L (3.9-5.8)

CK 1975 U/L (29-168)

Trop T 20 ng/L (<30)

- i. Describe and interpret his blood results (8 marks)

- ii. List your 3 immediate management priorities (3 marks)

- iii. An internal jugular central venous catheter is placed to facilitate potassium replacement. List 4 early and 4 late complications of internal jugular central venous catheter placement (8 marks)

Question 4 (12 marks)

A 78-year-old woman presents to your tertiary hospital with nausea, vomiting, loose bowel motions and malaise. She has a background of atrial fibrillation, hypertension and type II diabetes. Her current medications include: Candesartan 16mg daily, apixaban 2.5mg bd, dapagliflozin 10mg od, lercanidipine 10mg daily, bisoprolol 10mg daily, simvastatin 40mg daily and linagliptin-metformin 2.5mg-1g bd. She has not taken any over the counter medications.

Her observations on arrival are: BP 141/72, HR 90, RR 28, saturations 93% on RA, temperature 35.2 degrees Celsius. She is alert and oriented with a clear chest and soft-non-tender abdomen.

Arterial blood gas and renal function are performed; the results are shown below:

FiO2	0.21	
pH	6.75	(7.35-7.45)
pCO2	24mmHg	86 (32-48)
pO2	mmHg	(83-108)
Bicarbonate	3 mmol/L	(22-32)
Sodium	132 mmol/L	(135-145)
Potassium	6.4 mmol/L	(3.5-5.2)
Chloride	102 mmol/L	(95-110)
Glucose	15.7 mmol/L	(3.0 -7.8)
Lactate	15.0 mmol/L	(0.5-2.2)
Urea	14.6 mmol/L	(3.0-8.0)
Creatinine	237 µmol/L	(40-90)

a). Analyse the above results, listing the major abnormalities and their clinical implication. Include calculations where relevant. (7 marks)

Abnormality	Interpretation

b). Give the most likely underlying aetiologies of the major acid-base abnormality. (1 mark)

--

c). List your management priorities. Give drug doses and end points where relevant. (4 marks)

Question 5 (15 marks)

Your registrar has called you to resus to help with a patient. An 18 year old male (body weight 80kg) presented in diabetic ketoacidosis, complicated by a prolonged generalised seizure. He has been intubated for airway protection and is currently being sedated and mechanically ventilated, awaiting ICU review.

An arterial blood gas, taken with FiO₂ 1.0, is provided.

	Result		Reference
pH	7.02		7.35-7.45
PCO ₂	60	mmHg	30-40
PO ₂	200	mmHg	60-100
HCO ₃	11	mmol/L	22-31
BE	15		-3 – +3
Hb	155	mmol/L	120-165
Na	125	mmol/L	135-145
K	6.5	mmol/L	3.5-5.0
Cl	86	mmol/L	98-110
Gluc	35	mmol/L	3.5- 5.5
Lactate	2.5	mmol/L	<2

Question 5

Your registrar has called you to resus to help with a patient. An 18 year old male presented in diabetic ketoacidosis, complicated by a prolonged generalised seizure. He has been intubated for airway protection and is currently being sedated and mechanically ventilated, awaiting ICU review. His weight is 80kg.

A blood gas is provided above

1. Complete the following table for calculations that can be made from the above blood gas. (10 marks)

Variable	Formula Used	Result	Clinical Implication in this case
Expected CO ₂			
A-a gradient			
Anion Gap			
Delta Ratio			
Corrected Sodium			

Your registrar asks for guidance to address his respiratory status.

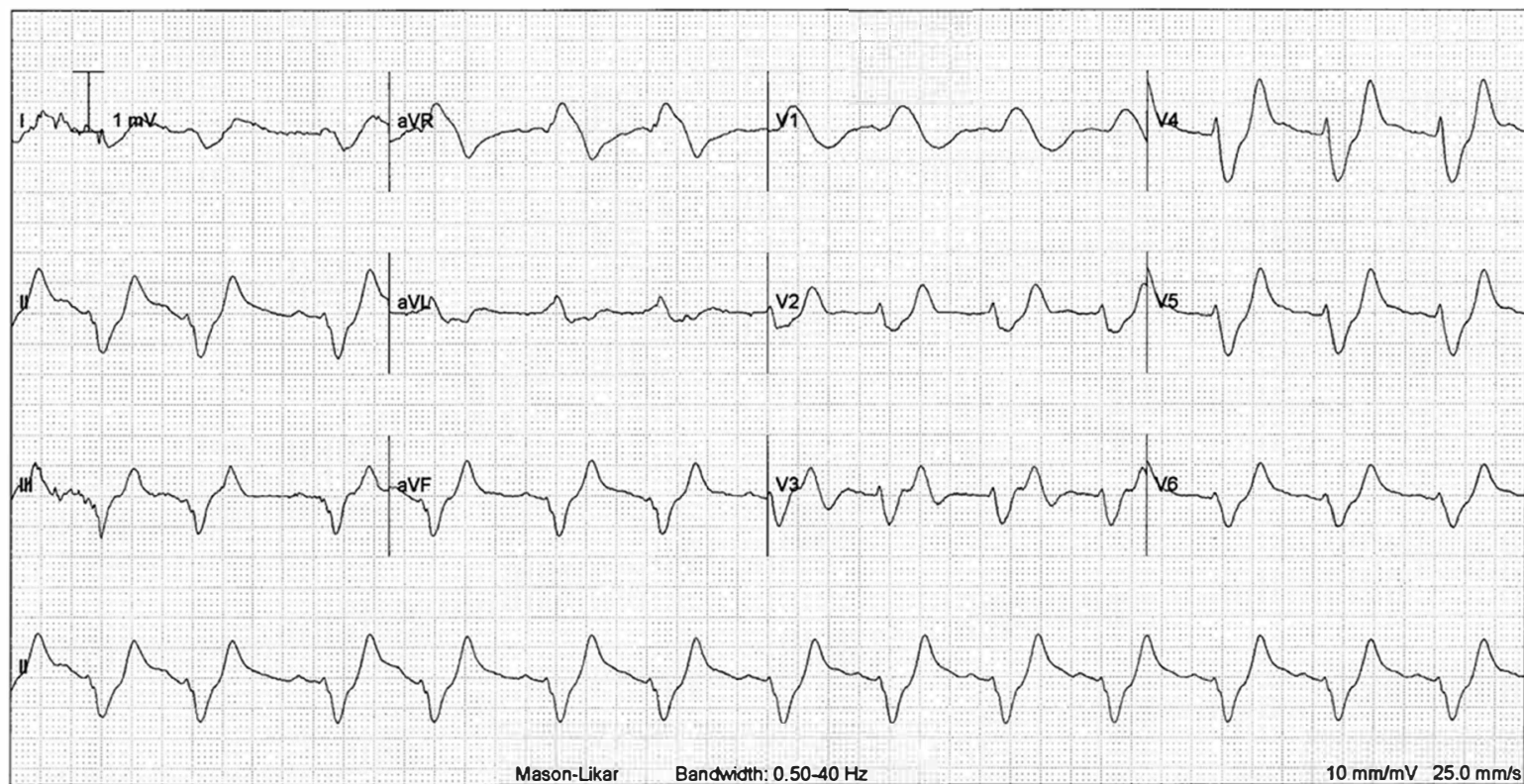
Currently the ventilator is set as follows:

Mode	SIMV-VC	
FiO ₂	1.0	
TV	400	mls
Resp Rate	12	breaths/min
PEEP	5	cm H ₂ O cm
PSupp	5	H ₂ O

You notice the patient is making some spontaneous respiratory efforts which are triggering the high pressure alarms.

2. Give your strategy **for improving this patient's ventilation**, stating your desired end-points.

(5 marks)



Question 6 (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		

- 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)	
-------------------------------	--

- 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		

Question 7 (14 marks)

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)

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)

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)

Question 8 (12 marks)

A 13 year old girl presents to the emergency department with confusion and abdominal pain. She has a background of type 1 diabetes requiring insulin treatment.

She has had 3 days of vomiting and 2 days of diarrhoea prior to this presentation.

Her vital signs are:

Temp	37	°C
HR	124	bpm
BP	120/70	mmHg
Central capillary refill time 4 seconds		

Her initial venous blood gas results on room air are:

pH	6.93	Na	124 mmol/L
pCO ₂	9 mmHg	K	6.2 mmol/L
pO ₂	44.9 mmHg	Cl	79 mmol/L
HCO ₃	2 mmol/L	Glc	43.5 mmol/L
BE	-25.5 mmol/L	Hb	162 g/L

- a. Quote four (4) appropriate formulae that assist the analysis the above blood results. You are NOT required to insert the appropriate values or calculate results. (4 marks)

- b. State four (4) important principles regarding your fluid and electrolyte treatment of this patient while in the emergency department AND give a justifying statement (which may include doses) for why it is an important principle (8 marks)

Principle 1	
Statement 1	
Principle 2	
Statement 2	
Principle 3	
Statement 3	
Principle 4	
Statement 4	

Question 9 (22 Marks)

A 36 year old man with a history of heavy alcohol use is brought in to your department by ambulance with general malaise.

On examination he is drowsy but rousable to voice, with slurred speech and disorientation.

Temp 37.6

HR 95

BP 100/60

SpO2 97% RA

1. Give 8 possible causes for his confusion. (8 marks)

Some bloods are taken as part of his diagnostic work---up:

Specimen type	Blood	Protein	83	g/L	(60 - 83)
Sample Appearance	Clear	Albumin	51 H	g/L	(35 - 50)
Sodium	133 L	Globulin	32	g/L	(25 - 45)
Potassium	3.5	Bilirubin	43 H	umol/L	(< 20)
Chloride	87 L	Bili(Conj)	9 H	umol/L	(< 4)
Bicarb.	10 C	ALP	92	U/L	(53 - 128)
Anion Gap	36 H	Gamma GT	384 H	U/L	(< 55)
Glucose	8.0 H	ALT	120 H	U/L	(< 45)
Fasting RR	-->	AST	202 H	U/L	(< 35)
Urea	6.0	CK	3490 H	U/L	(46 - 171)
Creatinine	177 H	Lipase	32	U/L	(< 60)
Urea/Creat.	34 L	OSM(Meas)	298 H	mmol/kg	(275 - 295)
eGFR	42 L				
	1.73m ²				
Comment:	Age: 36 years	I	H	L	KC

Question 10 (12 min)

A 65 year old man has been referred by his GP with a two week history of increasing confusion.

Bloods done by the GP reveal a serum sodium of 110 mmol/L (reference range 135 – 145 mmol/L).

1. List 4 historical features you would seek in determining the **UNDERLYING CAUSE** of this patient's hyponatremia. Include the clinical relevance. (4 marks)

Historical feature	Clinical relevance

2. List 4 examination findings you would seek in determining the UNDERLYING CAUSE of this patient's hyponatremia. Include the clinical relevance. (4 marks)

Examination finding	Clinical relevance

3. List 4 investigations you would perform to help determine the UNDERLYING CAUSE of this patient's hyponatremia. Justify your choices. (4 marks)

Investigation	Justification

While waiting for admission to an inpatient medical ward, the patient has been found lying next to his bed. He is complaining of severe right hip pain.

An x-ray of his pelvis is provided **below**.

4. Describe the abnormalities on the x-ray. (3 marks)

5. Complete the table by listing the maximum safe doses for the local anaesthetic agents given. (2 marks)

Agent	Maximum Dose
Lignocaine	
Bupivacaine	



The patient's daughter has arrived at the ED. She is very upset with her father's condition and treatment.

6. State 6 important features of your discussion with the patient's daughter. (6 marks)

Question 11 (15 Marks)

A 26 year old woman has been brought to the ED after being found unconscious in her bed at home. She has not been seen for 2 days.

Her blood chemistry is provided below.

Blood chemistry profile

Na	135	mmol/L	(135 – 145)
K	4.5	mmol/L	(3.5 – 4.2)
Cl	100	mmol/L	(95 – 110)
HCO ₃	2	mmol/L	(22 – 32)

Urea	5.8	mmol/L	(2.1 – 7.1)
Creatinine	160	umol/L	(60 – 110)

Total protein	50	g/L	(60 – 80)
Albumin	30	g/L	(35 – 50)
Globulin	20	g/L	(25 – 45)

Liver function tests

Bilirubin	77	umol/L	(<20)
ALP	143	U/L	(30 – 110)
Gamma GT	328	U/L	(<55)
ALT	8050	U/L	(<45)
AST	7560	U/L	(<35)

A 26 year old woman has been brought to the ED after being found unconscious in her bed at home. She has not been seen for 2 days.

Her blood chemistry is provided above

1. State the main abnormality related to the Na, K, Cl and HCO₃ results. Include your justification and the most likely cause of the abnormality. (3 marks)

Main abnormality

Justification

Most likely cause

2. State the main abnormality related to the urea and creatinine results. Include your justification and the most likely cause of the abnormality. (3 marks)

Main abnormality

Justification

Most likely cause

- 3. State the main abnormality related to the total protein, albumin and globulin results. Include your justification and the most likely cause of the abnormality. (3 marks)**

Main abnormality

Justification

Most likely cause

4. State the main abnormality related to the liver function test results. Include your justification and the most likely cause of the abnormality. (3 marks)

Main abnormality

Justification

Most likely cause

5. List 3 further tests you would perform to determine the cause of the overall clinical picture. For each, state how the test will be useful. (3 marks)

1)

2)

3)

—

Question 12 (16 marks)

A normally well 24 year old man is brought to your ED with increasing confusion and a seizure. A blood gas shows the following.

pH	7.31		
PCO ₂	51	mmHg	(35-45)
HCO ₃	22	mmol/L	(22-28)
Na	109	mmol/L	(135-145)
K	4.1	mmol/L	(3.5-4.2)
Cl	91	mmol/L	(95-110)
Glucose	10	mmol/L	(3.9-5.8)

- i. Detail the specific emergency treatment required and provide treatment aims/endpoints (3 marks)

- ii. List 3 risk factors for the development of Osmotic Demyelination Syndrome (ODS) and write brief explanatory notes (6 marks)

- iii. Hypertonic saline is also used in the management of raised intracranial pressure in traumatic brain injury (TBI). What dose/regime would you use and what target endpoints would guide your therapy (4 marks)

- iv. Briefly outline the advantages/disadvantages of hypertonic saline versus mannitol in TBI (3 marks)

Question 13 (13 Marks)

A 45 year old man with a history of alcohol abuse has presented to your department with intractable vomiting.

On examination, the patient is diaphoretic with epigastric tenderness.

A venous blood gas is provided below.

Venous blood gas

pH	7.61		(7.35 – 7.45)
pCO ₂	19	mmHg	(35 – 45)
HCO ₃	18	mmol/L	(22 – 32)
Na	137	mmol/L	(135 – 145)
K	3.7	mmol/L	(3.5 – 4.2)
Cl	98	mmol/L	(95 – 110)
Ionised Ca	1.03	mmol/L	(1.15 – 1.32)
Glucose	4.8	mmol/L	(3.0 – 7.8)
Lactate	8.5	mmol/L	(0.5 – 2.2)

A 45 year old man with a history of alcohol abuse has presented to your department with intractable vomiting.

On examination, the patient is diaphoretic with epigastric tenderness.

A venous blood gas is provided above

1. State your interpretation of the RESPIRATORY acid-base status and list 3 differential diagnoses. (4 marks)

Interpretation (1 mark)

Differential diagnoses (3 marks)

1) _____

2) _____

3) _____

—

2. State your interpretation of the METABOLIC acid-base status, show your supporting calculations and list 2 differential diagnoses. (5 marks)

Interpretation (1 mark)

Supporting calculations (2 marks)

Differential diagnoses (2 marks)

1) _____

2) _____

—

- 3. List 4 other investigations you will perform in this patient. Provide justification for each.**
(4 marks)

Investigation	Justification

Question 14 (12 MARKS)

A 32-year-old Aboriginal woman presents to the ED with lethargy. She is previously well, and has not been seen by medical services for the previous 10 years.

Her VBG is attached:

pH	7.25
pCO ₂	24.4
HCO ₃	11.7
Hb	81
Na	140
K	5.1
Ca ⁺⁺	0.81
Cl	98
Gluc	9.6
Lact	0.9

1. What is the most likely cause for the abnormalities on the VBG?
Describe and interpret the abnormalities. (5 marks)

Her creatinine is 1842 with a urea of 62.

2. List **4** possible causes for these findings in a 32-year-old Aboriginal woman, with the most common cause first. (3 marks)

(1) _____

(2) _____

(3) _____

(4) _____

She becomes agitated and appears to be getting ready to leave the ED.

3. What would be some strategies to stop her leaving? (4 marks)



Question 15 (18 Marks)

A 75yo man presents to your ED with a 2 day history of lower abdominal pain, fevers and malaise. You are unable to obtain more information.

Vital signs:

HR	110
RR	24
Temp	38.2
BP	95/55
GCS	E3V4M6 13

A Venous Blood Gas and basic bloods are performed:

pH	7.12
pCO ₂	34
HCO ₃	13
Hb	124
Na	138
K	6.2
Cl	110
Creat	443

FBC:

Hb	121
WCC	15
Plt	4

Chemistry:

Urea	20
Creat	465
ALP	174
GGT	86
ALT	97
AST	372
LDH	1180

His previous liver and renal function tests have all been normal

1. For the venous blood gas, calculate, showing your workings, the anion gap (2 marks)

2. List 3 likely causes of the metabolic derangement in this patient (3 marks)

3. What is the MOST likely unifying diagnosis in this patient, and what are the supporting features? (4 marks)

Diagnosis:

Supportive features:

4. A single slice of the patient's CT scan is shown. List 1 positive and 2 negative features, relevant to this patient's presentation (3 marks)



Positive feature:

Negative Features:

1---

2---

5. List your 3 main management priorities, with justification, for this patient (6 marks)

Management priorities	Justification

Question 16 (10 Marks)

An 89 year old lady presents with generalised weakness, nausea and diarrhoea. She had a fall 3 days earlier and had broken her humerus. She was discharged for orthopaedic follow up as an outpatient. She appears dehydrated, BP 140/80, pulse 80 regular, and is afebrile.

Her venous blood gas is below :

Venous Blood pH POCT	7.073
Venous Blood pO2 POCT	23.8 mmHg
Venous Blood pCO2 POCT	48.2 mmHg
Venous Blood O2 Saturation POCT	33.2 %
Venous Blood HCO3 POCT	13.4 mmol/L
Venous Blood Base Excess POCT	-14.8 mmol/L
Venous Blood Oxyhaemoglobin POCT	32.8 %
Venous Blood Inspired Oxygen POCT	21 %
Venous Blood Haemoglobin POCT	97 g/L
Venous Blood Reduced Haemoglobin POCT	66.0 %
Venous Blood Methaemoglobin POCT	0.4 %
Venous Blood Carboxyhaemoglobin POCT	0.8 %
Venous Blood Creatinine POCT	179 umol/L
Venous Blood Sodium POCT	126 mmol/L
Venous Blood Potassium POCT	3.2 mmol/L
Venous Blood Chloride POCT	100 mmol/L
Venous Blood Calcium Ionised POCT	1.25 mmol/L
Venous Blood Glucose POCT	5.6 mmol/L
Venous Blood Lactate POCT	1.1 mmol/L

1. Interpret the blood gas results - what are the likely causes of her acidosis? (5 marks).

2. List 5 further investigations you feel are indicated. Justify your responses (5 marks).

- i.

- ii.

- iii.

- iv.

- v.

Question 17 (15 marks)

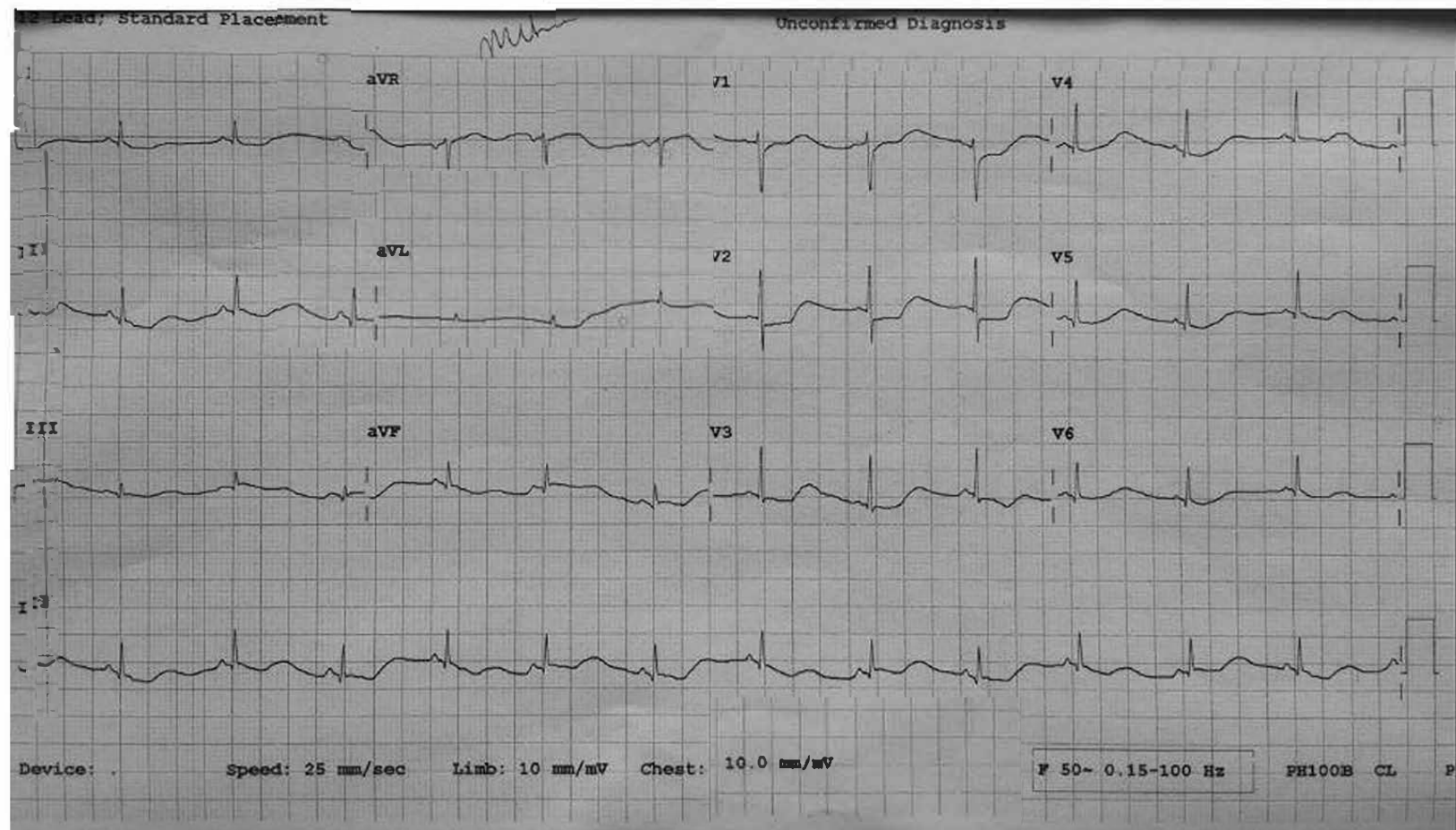
A 40 year old developmentally delayed patient is brought to your ED with vomiting. She had PEG inserted 4 weeks ago for feeding. On arrival her GCS is 13 (E4 V3 M6) which is normal for her according to the carers. Sats 95%, RR 13, P 90 BP 140/70, she weighs approximately 40kg. She is on no regular medications.

A 12 LEAD ECG IS SHOWN below

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

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 ₂ 47 mmHg	(35 – 45)
HCO ₃ 42 mmol/L	(22 – 28)
L 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)



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

Question 18 (10 marks)

A 62-year-old male with a history of chronic pancreatitis presents to the Emergency Department with several days of nausea and vomiting.

His biochemistry profile is attached:

Parameter	Patient Value	Normal Adult Range
Arterial Blood Gas		
FiO ₂	0.4	
pH	7.62*	7.35 – 7.45
PCO ₂	62 mmHg* (8.2 kPa)*	36 – 45 (4.6 – 6.0)
PO ₂	133 mmHg (17.5 kPa)	
Bicarbonate	65 mmol/L*	21 – 28
Base Excess	> 30 mmol/L*	-3 – +3
Sodium	149 mmol/L*	135 – 145
Potassium	3.3 mmol/L*	3.5 – 5.2
Chloride	53 mmol/L*	95 – 110
Calcium ionised	0.74 mmol/L*	1.12 – 1.32
Lactate	2.7 mmol/L*	< 1.3
Venous biochemistry		
Urea	34.9 mmol/L*	3.0 – 8.0
Creatinine	431 micromol/L*	60 – 110

1. Interpret the abnormalities in the results. (3 marks)
2. Give likely underlying causes for the main metabolic acid-base disturbances. (3 marks)
3. Describe the clinical features of severe hypocalcaemia. (2 marks)
4. Outline your management of symptomatic hypocalcaemia. (2 marks)

Question 19 (12 marks)

A 60-year-old man with a past history of type 2 diabetes presents after being found on the floor by his elderly mother. He has recently been unwell with vomiting for the last 3 weeks.

His vital signs are:

BP 65/30

GCS 13

Pulse 120 regular

Oxygen saturations 100% on 15 L NRM.

*See arterial blood gas below

1. Interpret the abnormalities in the above results. (4 marks)

2. How would you initially manage these abnormalities? (3 marks)

The patient's GCS deteriorates to 5 and he begins vomiting.

Arterial Blood pH POCT	L 6.865
Arterial Blood pO ₂ POCT	H 417.0 mmHg
Arterial Blood pCO ₂ POCT	L 18.7 mmHg
Arterial Blood O ₂ Saturation POCT	99.2 %
Arterial Blood HCO ₃ POCT	L 3.2 mmol/L
Arterial Blood Base Excess POCT	L -27.2 mmol/L
Arterial Blood Oxyhaemoglobin POCT	97.2 %
Arterial Blood Inspired Oxygen POCT	100 %
Arterial Blood Haemoglobin POCT	L 124 g/L
Arterial Blood Reduced Haemoglobin POCT	0.8 %
Arterial Blood Methaemoglobin POCT	H 0.9 %
Arterial Blood Carboxyhaemoglobin POCT	1.1 %
Arterial Blood Creatinine POCT	H 246 umol/L
Arterial Blood Sodium POCT	142 mmol/L
Arterial Blood Potassium POCT	4.6 mmol/L
Arterial Blood Chloride POCT	107 mmol/L
Arterial Blood Calcium Ionised POCT	1.30 mmol/L
Arterial Blood Glucose POCT	H 31.0 mmol/L
Arterial Blood Lactate POCT	L 1.7 mmol/L

3. What is your plan with regards to intubating this patient, and what ventilation strategy would you employ? (5 marks)

Question 20 (11 Marks)

A 62 year old man is brought to the ED by ambulance with a decreased level of consciousness. He has vomited several times per day for the last 3 days and has become weak and lethargic. He has a background of Type 2 Diabetes Mellitus and recurrent pancreatitis. He is on Metformin and injectable insulin but has not taken either in the last week.

An ABG is performed

pH	6.91
pCO ₂	13
Na	106
K	6.3
Cl	73
HCO ₃	4
Lact	3.1
Glu	82

Questions:

1. Describe the 4 key abnormalities shown in this blood gas. Include any calculations performed in your answer. (4 marks)

2. What is the likely diagnosis? (2 Marks)

3. List 5 immediate management priorities for this patient:

(5 Marks)