

FEX Net 2022 Collated SAQs

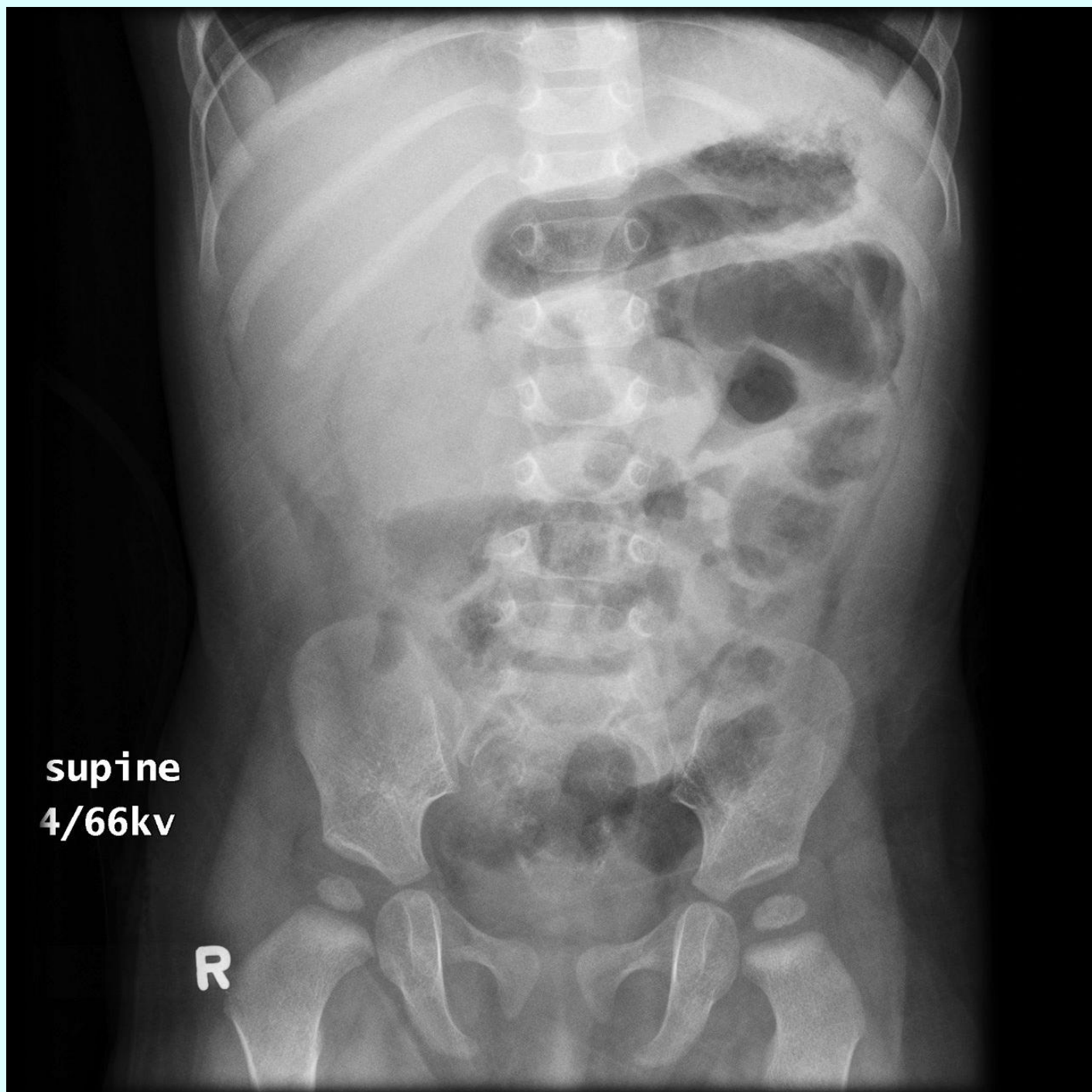
Paediatrics: Questions

1. Abdominal Pain
2. Anaphylaxis
3. Arm Pain
4. Asthma
5. Bronchiolitis
6. BRUE
7. Crying
8. D+V
9. FBC
10. Febrile Rash
11. Fever
12. Floppy infant
13. Hypoxia
14. Jaundic
15. Labour
16. NAI
17. Neonatal jaundice
18. Non-Weight Bearing
19. Poor Feeding
20. Rash
21. Seizure
22. Sick Baby
23. Sick Neonate
24. Syncope
25. Vomiting
26. Wheeze

Question 1 (13 Marks)

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

His abdominal Xray is shown.



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

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 end-points where appropriate. (5 marks)

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

Management option	When it would be used

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

Question 2 (12 marks)

A 7 year old boy is brought by ambulance to your emergency department from a local primary school; they are accompanied by a teacher.

He has a widespread erythematous rash and difficulty breathing shortly after eating a sandwich from his friend's lunch box that contained peanut butter.

He has no known allergies.

His vital signs are:

HR	140 bpm
SaO2	90% on room air, with wheeze, no stridor
RR	42 bpm
BP	75/45 mmHg
GCS	15/15

a) What is the estimated weight for this patient? (Please include your formula) **(2 marks)**

The resuscitation team have moved him to a resuscitation bay and they have applied high-flow oxygen.

- b) What three (3) most important treatments would you prescribe for this patient? Complete the table below with treatments and details. **(6 marks)**

	Treatment	Details (dose, concentration, route)
1		
2		
3		

One of the child's parents has arrived and after a period of observation you decide they require referral to an inpatient team.

- c) List four (4) indications for referral for inpatient team admission. **(4 marks)**

1.

2.

3.

4.

Question 3 (10 Marks)

A 10 month old boy has been brought to the ED by his mother. She is concerned that he has been crying and not using his left arm. An x-ray has been performed due to apparent arm tenderness on examination.

The x-ray is provided below

- 1. Describe the abnormalities on the x-ray. Include your clinical impression. (3 marks)**

- 2. State 3 components of your examination of this child. (3 marks)**

A 10 month old boy has been brought to the ED by his mother. She is concerned that he has been crying and not using his left arm. An x-ray has been performed due to apparent arm tenderness on examination.

The x-ray is provided below.



3. State 4 components of your management of this child. (4 marks)

Question 4 (13 Marks)

A 5 year old boy presents with an exacerbation of his known asthma.

1. What four (4) signs on physical examination would suggest a severe (but **NOT** life threatening) exacerbation?

2. List four (4) drugs with their doses, routes and indications for the use in the treatment of childhood asthma in the emergency department.

Drug	Dose	Route	Indication

3. List five (5) criteria for discharge.

Question 5 (12 marks)

A 5 month old boy brought in by his parents appears breathless and is “off his feeds.” Your provisional impression is bronchiolitis.

- i. Name three common organisms which cause this illness (3 marks)

- ii. List 4 clinical features which would indicate a severe episode warranting admission (4 marks)

- iii. Complete the following table describing the rationale for each investigation in a child with bronchiolitis (3 marks)

Investigation	Indication/Rationale
Chest Xray	
Nasopharyngeal aspirate	
Blood gas	

- iv. This illness is contagious. List 2 ways to reduce transmission in hospital (2 marks)

Question 6 (15 marks)

An 8 week old girl was brought to the emergency department at 3am for an episode of cyanosis, floppiness and apnoea, 10 minutes after an early morning breastfeed. Mum stated that the whole episode lasted about 15-20 seconds. She was born at 36 weeks via forceps delivery with no complications, and discharged on day 3 of life.

List the criteria to say a child had a Brief Resolved Unexplained Event (BRUE) (5 marks)

List 5 differential diagnosis of BRUE in broad categories with 1 specific example each (5 marks)

Describe the features of a Lower Risk BRUE (5 marks)

Question 7 (24 marks)

A four week old neonate has been brought to the ED by her mother. The mother states that the baby “won’t stop crying”.

1. In the table below, list 5 differential diagnoses for possible pathology in the child. For each, list one cardinal finding on assessment (history and examination) that would be supportive. (10 marks)

Differential diagnosis	Assessment finding

On assessment, the baby appears well, with no signs of pathology. You are worried about possible post-natal depression in the child's mother.

2. List 8 factors that would put this mother at risk of post-natal depression. (8 marks)

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____
- (6) _____
- (7) _____
- (8) _____

Your assessment is of significant post-natal depression.

3. List 4 indications for admission to hospital. (4 marks)

- (1) _____
- (2) _____
- (3) _____
- (4) _____

After you inform her that she needs admission for further treatment, she tells you she wants to leave.

- 4. List 4 components of your verbal de-escalation strategy that you could employ to engage her to stay for further management. (4 marks)**

(1) _____

(2) _____

(3) _____

(4) _____

Your attempts at verbal de-escalation have been unsuccessful. The mother is now very agitated and attempting to leave.

- 5. List 2 key criteria for the use of involuntary treatment for this patient under your local Mental Health laws. (2 marks)**

(1) _____

(2) _____

6. List 2 drugs you could use for parental sedation, including doses.

(2 marks)

(1) _____

(2) _____

Question 8 (12 marks)

A six (6) month old boy is brought to the emergency department by his mother with 48 hours of vomiting and diarrhoea. His weight is 8 kg.

He is alert on examination and his eyes are sunken, he has slightly dry mucous membranes and decreased skin turgor.

His vital signs are as follows:

Temp	36.5	°C
HR	140	bpm
RR	44	/min
SpO ₂	96%	on room air
BGL	4.5	mmol/L
Capillary refill time <2 seconds		

You diagnose him with gastroenteritis.

- a. What is his degree of dehydration? (1 mark)
-

b. Complete the table below for THIS child (8 marks)

	Nasogastric rehydration	IV rehydration
Indication (2 marks)		
Choice of rehydration fluid (2 marks)		
Rate of administration (ml/kg/hr) AND duration of therapy (4 marks)		

c. List three (3) clinical signs that should be monitored during rehydration (3 marks)

Question 9 (12 Marks)

A 5 year old girl has been brought to the ED with a 3 day history of vomiting, diarrhea and lethargy.

A full blood count is provided below.

Full blood count

Hb	85	g/L	(115 - 135)
WBC	8.3	$\times 10^9/\text{L}$	(4.5 – 14.0)
Platelets	20	$\times 10^9/\text{L}$	(140 – 400)

Q9

A 5 year old girl has been brought to the ED with a 3 day history of vomiting, diarrhea and lethargy. A full blood count is provided above

- 1. Interpret the results, including a likely diagnosis. (2 marks)**

2. List and justify 5 additional investigations you would perform. (10 marks)

Investigation	Justification

Question 10 (24 marks)

A 3 year old boy has been brought to the ED by ambulance. He has been unwell with fever and vomiting for 2 days. He has developed lethargy and a rash this morning.

The child is unvaccinated.

A clinical photograph has been provided below

1. List 3 descriptive features from the photo. (3 marks)

- 1) _____
- 2) _____
- 3) _____

Your initial assessment suggests bacterial infection as the most likely cause of the presentation.

2. List 4 of the most likely bacterial pathogens that could cause this presentation. (4 marks)

- 1) _____
- 2) _____
- 3) _____
- 4) _____

3. Other than bacterial infection, list 3 differential diagnoses for this presentation. (3 marks)

Question 10 (12 min)

A 3 year old boy has been brought to the ED by ambulance. He has been unwell with fever and vomiting for 2 days. He has developed lethargy and a rash this morning.

The child is unvaccinated.

A clinical photograph has been provided **BELOW**.



The patient's initial vital signs are:

AVPU	responds to voice	
Pulse	180	/min
BP	80/35	mmHg
Temperature	34.5	degrees
O2 sats	98%	room air

Your clinical assessment is consistent with septic shock.

- 4. Other than coagulation studies, list your 3 most important initial investigations, including justification. (3 marks)**

Investigation	Justification

Q10 (cont)

The patient stabilises after your initial management.

One of your laboratory tests is provided **BELOW**.

Coagulation profile

INR	3.2		(0.9 – 1.7)
aPTT	83	s	(24 – 39)
Fibrinogen	1.7	g/L	(1.7 – 4.5)
D-dimer	35	mg/L	(<0.5)
Platelet count	59	*10 ⁹ /L	(150 – 400)

5. State the details of your 2 most important initial treatment steps. (2 marks)

1) _____

2) _____

The patient stabilises after your initial management.

One of your laboratory tests is provided in the **PROPS BOOKLET**.

6. Interpret the results. (1 mark)

7. List 4 other potential complications of this patient's presentation. (4 marks)

1) _____

2) _____

3) _____

4) _____

Question 11(10 Marks)

A 2 month old boy has been brought to the ED with a fever of 24 hours duration.

1. List 4 examination features that would prompt you to perform a lumbar puncture.

(4 marks)

Question 12 (15 Marks)

A 2 week old boy has been brought to your ED by his mother.

He has been noted to be pale, floppy and less responsive than usual.

1. Complete the table by giving 5 differential diagnoses for his presentation, with 2 cardinal examination findings that would suggest each diagnosis. (15 marks)

Diagnosis	Cardinal Examination Finding

Question 13 (12 Marks)

A junior doctor approaches you for help regarding a patient. They have just seen an 11 month old girl who was brought in with increased work of breathing and cough. There is a 3 day history of coryzal features, but no other significant medical history. Examination demonstrated an alert interactive child with widespread fine crepitation's across both lung fields.

Observation:

HR 155bpm
RR 45r/min
SpO2 89% RA
Febrile 37.1

The junior doctor is concerned by the patient's observations and has organised for them to be moved to a resuscitation bay. They have written up orders for an adrenaline neb (5mg), and a salbutamol burst (6 puffs x3) as initial therapy.

1. State the likely diagnosis. (2 mark)

2. State the immediate management of this patient. (5 marks)

The child's parents are endocrinologists employed at the hospital and are curious as to what criteria will be used to determine when the child is suitable for discharge.

3. List the criteria for discharge. (5marks)

Question 14 (12 Marks)

A 7 day old boy has been brought to your ED with jaundice.

1. List **six causes of neonatal jaundice**. For each one, list a cardinal assessment (history, examination or investigation) finding. (12 marks)

Cause	Cardinal finding

Question 15 (16 marks)

You are notified that a 24 year old female has presented to your urban ED in precipitous labour. She has not received any antenatal care. The gestational age is unknown.

(i) List three (3) important immediate actions you would take (3 marks)

i)

ii)

iii)

Your assessment is that she is rapidly progressing towards delivery in the ED.

(ii) List three (3) factors that predispose to a breech delivery (3 marks)

i)

ii)

iii)

The newborn is successfully delivered but is flaccid and apnoeic (APGAR of 0)

(iii) List two (2) immediate treatment priorities (2 marks)

i)

ii)

(iv) List two (2) pieces of essential equipment from each of the four (4) categories outlined below that you would require to manage this precipitous delivery (8 marks)

Equipment Category	Choice of Equipment
Manage the delivery	
Neonatal resuscitation - General	
Neonatal resuscitation - Airway	
Drugs and/or Fluids (with doses)	

Question 16 (13 marks)

A 6-month old infant is brought to an urban ED by his mother. He has a swollen and bruised left thigh. You are concerned about '*non-accidental injury*'.

(i) List five (5) specific features of the history that are MOST likely to be consistent with non-accidental injury (5 marks)

(ii) Excluding fractures, list three (3) OTHER injuries MOST likely to be associated with non-accidental injury (3 marks)

The x-ray confirms a femur fracture. His mother requests discharge.

(iii) State five (5) priorities in the ED management of this case (5 marks)

i)

ii)

iii)

iv)

v)

Question 17 (18 Marks)

A 24 day old exclusively breast fed male infant is brought to the emergency department by his concerned mother. Previously presented with jaundice at day 3 not requiring treatment, failed to attend follow up.

Vital signs

HR 122
BP: 68/42
RR 26
Weight 3250g

1. In the table below, outline two (2) maternal risk factors and two (2) neonatal risk factors for clinically significant hyperbilirubinaemia in any neonate (4 marks)

	<i>Risk Factors</i>
Maternal	
Neonatal	

2. With regards the case, list 4 features on each of history and examination that will inform your diagnosis and management with justification for each (8 marks)

History	Justification
Exam	

3. Specify 4 initial investigations that should be undertaken – complete the following table (4 marks)

Investigation	Justification

4. The results of examination and investigations were reassuring for a benign cause. Identify the key elements in discharging this baby safely. (2 mark)

Question 18 (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)

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

AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 6



- 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)

- 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)

Question 19 (10 Marks)

A 3 week old boy has been brought to the ED by his mother. The child is not feeding well and has failed to gain weight since birth.

- 1. List 5 features of your examination, including the relevance of each feature. (5 marks)**

2. List and justify 5 investigations you might perform. (5 marks)

- 1) _____

- 2) _____

- 3) _____

- 4) _____

- 5) _____

Question 20 (12 Marks)

A 2 year old girl has been brought to the ED with a rash over her torso.

A clinical image is provided in the **PROPS BOOKLET**.

1. List 4 features of this rash. (4 marks)

- 1) _____
- 2) _____
- 3) _____
- 4) _____

2. What is the most likely diagnosis? (1 mark)

3. List 2 common infectious causes for this condition. (2 marks)

- 1) _____
- 2) _____

A 2 year old girl has been brought to the ED with a rash over her torso.

A clinical image is provided **BELOW**.



4. List 4 non-infectious causes for this condition. (4 marks)

- 1) _____
- 2) _____
- 3) _____
- 4) _____

5. State your management of this condition. (1 mark)

Question 21 (11 Marks)

An 12 month old girl has been brought to the ED with a seizure. The child has been experiencing fevers and has been lethargic for one day.

1. List 4 criteria for a simple febrile convulsion.

(4 marks)

- (1) _____
- (2) _____
- (3) _____
- (4) _____

The seizure was self-limiting.

2. Complete the following table, with justification for the use of the following investigations.
(7 marks)

Investigation	Justification
No investigation	
Urine bag specimen	
Urine supra-pubic aspiration or catheter specimen	
Blood culture	
Chest x-ray	
Lumbar puncture	
Full blood count	

Question 22 (20 marks)

A 12 month old Asian boy is brought to the ED by his parents. Over the last 48 hours his mother noticed him becoming increasingly pale and lethargic and noted his urine was dark. He was seen by his GP 4 days ago with fever, vomiting and cloudy urine which settled with a course of trimethoprim. He is haemodynamically stable and afebrile.

- i. List 4 possible causes of this presentation (4 marks)

He has the following blood results:

WCC	11.8 x10 ⁹ /L	(3.6-11)
Neutrophils	7.3 x 10 ⁹ /L	(1.8-7.5)
Hb	60g/L	(115-165)
Hct	0.29L/L	(0.37-0.44)
Plt	500 x 10 ⁹ /L	(140-400)
RCC	3.5 x 10 ¹² /L	(3.8-5.8)
MCV	90 fL	(80-96)
MCHC	320g/L	(285-300)
Reticulocyte count	240x10 ⁹ /L	(30-140)

DAT / Coombs test – negative

EUC – normal

- ii. Describe and interpret the above results (2 marks)

- iii. List 4 other investigations to help confirm the likely diagnosis and provide your reasoning (8 marks)

- iv. You suspect he has G6PD. List 4 causes of this condition (4 marks)

- v. What would be your treatment for this patient (2 marks)

Question 23 (12 Marks)

You are a consultant working in a rural emergency department. The local ambulance service alerts you to a critically unwell child being brought to your department. She is a 4 week old girl found by her mother to be grey and floppy. Ambulance states that she is centrally cyanotic, with a capillary refill of 5 seconds.

- 1. List 4 immediate steps you would take to prepare for arrival. (2 marks)**

- 2. On arrival the infant has unrecordable saturations, is mottled, making weak respiratory efforts, and has a capillary return of 5 seconds. The mother reports that the child has congenital heart disease, and is due for surgical repair in the coming weeks.**

Complete the following table on duct dependant congenital heart disease.

(3 marks)

Duct dependant systemic circulation	
Duct dependent pulmonary circulation	
Duct dependant systemic and pulmonary circulation	

- 3. List three non-duct dependant forms of congenital heart disease.**

(3 marks)

4. List two other cardiac conditions that may present in the neonatal period.

(2 marks)

5. List 2 other causes of neonatal collapse related to endocrine system:

(2 Marks)

Question 24 (15 marks)

A 12 year old girl was brought to ED via ambulance following a syncopal episode.

- i. What is the definition of syncope (3 marks)

- ii. What is the most common cause of syncope in children (1 mark)

- iii. Name a form of syncope unique to the preschool population (1 mark)

- iv. List 5 red flags in this girl's history that would prompt further investigation (5 marks)

- v. List 5 conditions you would look for in this girl's ECG (5 marks)

Question 25 (13 marks)

A 10-day old baby boy is brought into the ED flat and not feeding for 24 hours. He has been vomiting for 12 hours. On examination he has dry mucous membranes, and is only whimpering when bloods are taken. Estimated weight is **4kg**.

A venous blood gas is shown below:

pH:	7.28	
pCO ₂ :	28	mmHg
pO ₂ :	76	mmHg
Na :	128	mmol/L
K:	7.1	mmol/L
Chloride:	88	mmol/L
Bicarb :	13	mmol/L
Base Excess:	-6	
Glucose :	2.2	mmol/L

- a) List the three (3) most important blood gas abnormalities (3 marks)

b) Other than congenital adrenal hyperplasia, list five (5) differential diagnoses in this child (5 marks)

1.

2.

3.

4.

5.

c) You suspect congenital adrenal hyperplasia. List two (2) **SPECIFIC** pathology tests you would request to confirm this diagnosis. (2 marks)

1.

2.

d) List three (3) treatments you would initiate in this baby **INCLUDING** doses (3 marks)

Question 26 (11 Marks)

A 3-year-old boy presents to the ED with wheezing and SOB for 2/7. His mother feels that his symptoms are getting progressively worse. His observations are: RR 40, BP 90/50, HR 150 and Sats 92% RA.

See image below

1. List **6** causes of wheezing in a child and 2 historical features that may support that diagnosis.
(6 marks)

Cause of Wheezing	2 Features on History

