

TRIAL FELLOWSHIP EXAMINATION

WRITTEN EXAMINATION

Short Answer Questions

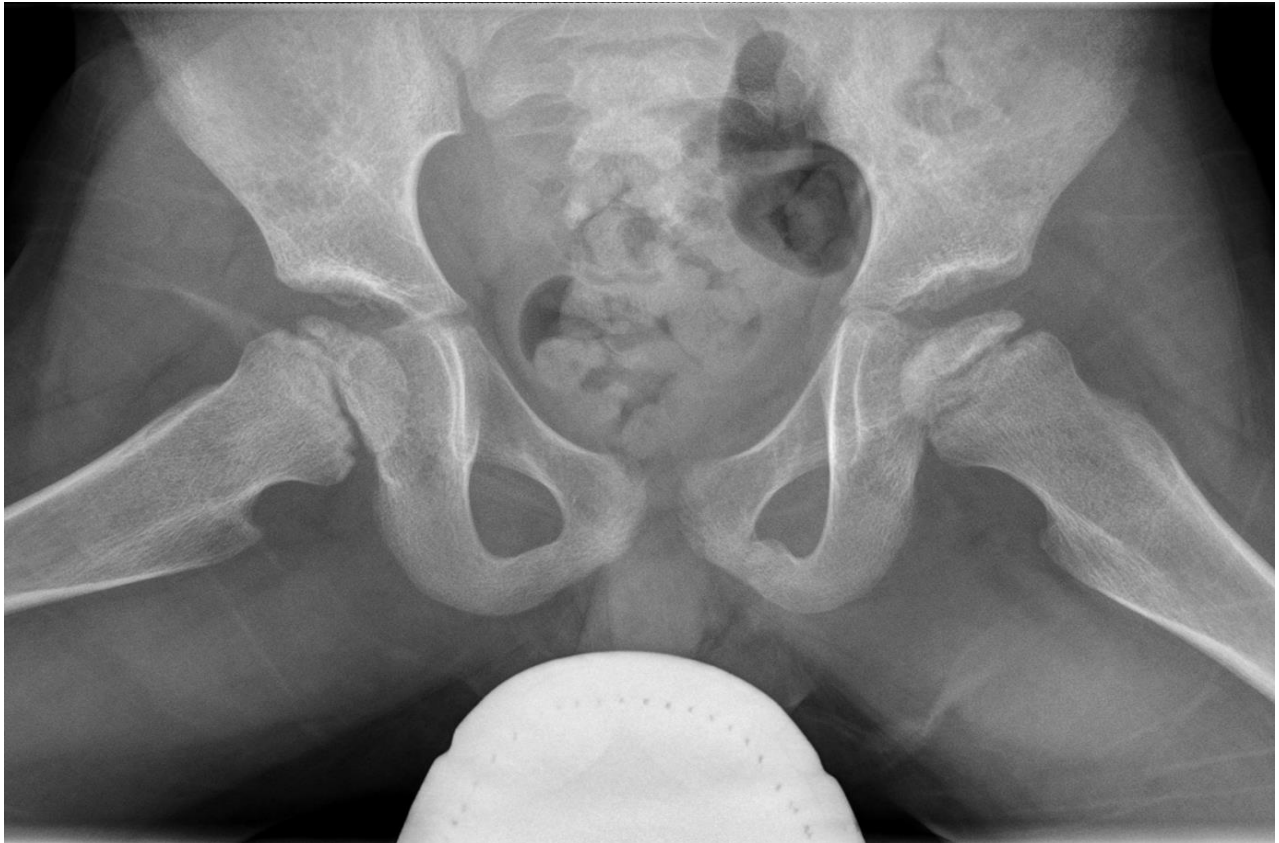
Paper 7

- *30 Questions*
- *180 minutes (No reading time)*
- *Answer all questions*
- *Write your answers on this question paper.*

Question 1

A 3½ year old boy accompanied by mum presents to ED with painful left leg and ongoing limp left leg for last four days. According to mum there is no history of fall or trauma. On examination, he is holding left leg in slight flexion and is unable to weight bear. You decide to do a pelvic X-ray. His observations are:

Pulse 95bpm BP 90/60mmHg RR 22/min Sats 97% air Temp 37.1C



Right

Left

1. Describe the abnormality on the XR (1 mark)

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

3. List 8 important causes of atraumatic limp in a child this age (4 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

4. List 4 assessment parameters (Kocher criteria 1999) are the most useful for suspected septic arthritis in a child with a painful hip (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 2

An 84 year-old female attended your ED after allegedly taking 38 tablets of Paracetamol 16 hours ago (total 19 grams). Observations are stable and her GCS is 15.

1. List 8 investigations you would perform and why (2 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

2. State 3 elements required to demonstrate competence (3 marks)

1 _____

2 _____

3 _____

3. She refuses treatment and wants to discharge herself. Upon assessment, you find that she lacks capacity. List your important actions and explain each (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

Question 3

A diabetic patient arrives to the ED and requires fluid resuscitation. He has bilateral below knee amputations. Several attempts to establish IV access failed. You decide to go with the IO route.

1. List 3 alternative anatomical sites that are available for intraosseous access? (3 marks)

1 _____

2 _____

3 _____

2. What is the clinical indication for intraosseous access? (1 mark)

3. List 4 contraindications for IO insertion (2 marks)

1 _____

2 _____

3 _____

4 _____

4. List the 4 main complications associated with intraosseous use? (2 marks)

1 _____

2 _____

3 _____

4 _____

5. List 4 diagnostic studies that can be obtained via intraosseous access that accurately equates to iv collection (2 marks)

1 _____

2 _____

3 _____

4 _____

Question 4

A 25 year old male was assaulted with a baseball bat. He had a witnessed LOC for 5 minutes and GCS was 10 when paramedics attended. On arrival to the ED, he had a generalised seizure following which he became agitated and combative with a GCS of 8. His left pupil is dilated and he has already vomited at scene and the ED.



1. Describe the 4 abnormalities on this CT. Give as much details as possible (2 marks)

1 _____

2 _____

3 _____

4 _____

2. List 9 important initial steps in this patient's initial primary survey, including end points where appropriate (6 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

3. Describe 4 methods of reducing intracranial pressure in this patient and the rationale of each method (2 marks)

1 _____

2 _____

3 _____

4 _____

Question 5

A 45 year old female has long standing low back pain was discharged the preceding day by a JMO in your ED with a diagnosis of malingering. She now presents to the ED with a sudden and severe lower back pain radiating down the legs. In the department she was unable to control herself and was incontinent of urine.

1. What 6 features would suggest cauda equina syndrome? (3 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

2. List the essential test to aid the assessment of a patient with suspected cauda equina syndrome (1 mark)

3. You investigate and find that the JMO did not examine the patient, wrote no notes and was heard by the ED RN to tell the patient that there is nothing wrong with them and they should not have come to the ED, again. You are the JMO's supervisor. Outline the steps to how you would approach to this situation with details.

(4 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

4. Outline the 4 most important immediate steps in the treatment and disposition of this patient (2 marks)

1 _____

2 _____

3 _____

4 _____

Question 6

An 18 month-old boy is brought by his worried mother to the ED with a rash and spots in his buccal cavity. He is also pyrexial (T 38.9°C).



1. What changes are shown and what is the diagnosis? (2 marks)

1 _____

2 _____

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

1 _____

2 _____

3. What laboratory findings would be expected with this diagnosis (3 marks)

1 _____

2 _____

3 _____

4. In the ED, the child starts fitting. They are placed on their side with oxygen given by mask. An iv is placed. Outline your immediate management including drug doses (3 marks)

1 _____

2 _____

3 _____

Question 7

A 29 year old female presents to the ED with lower abdominal pain. Observations are stable, blood tests are within normal range and her pregnancy test is negative.

1. Which 4 risk factors suggest pelvic inflammatory disease? (2 marks)

1 _____

2 _____

3 _____

4 _____

2. When should treatment be initiated? (2 marks)

1 _____

2 _____

3. What are the 4 main indications for hospital admission? (2 marks)

1 _____

2 _____

3 _____

4 _____

4. What discharge topics should be discussed with the patient? (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 8

A 35 year-old female is brought to the ED by her husband. She has not been feeling well and is becoming irritable, agitated and is constantly sweaty. She is known to have hyperthyroidism and last week underwent surgery. Examination reveals a HR 144 bpm and T 38.4°C.

1. What three clinical features are most relevant to assess for thyroid storm? (3 marks)

1 _____

2 _____

3 _____

2. List 4 specific drugs that would be used to treat this patient and outline their mechanism of action. Provide doses where appropriate. (4 marks)

1 _____

2 _____

3 _____

4 _____

3. Apart from supportive measures such as ivi fluids, correcting fluid or electrolyte imbalance, external cooling, outline options for refractory thyroid storm (3 marks)

1 _____

2 _____

3 _____

Question 9

A patient presents to the emergency department after sustaining multiple lacerations to the sole of the foot from oyster shells after walking on the beach. You wish to perform a regional block to the plantar aspect of the foot.

1. Name the 3 nerves involved and their cutaneous distribution (3 marks)

1 _____

2 _____

3 _____

2. Where would you insert LA to anaesthetise these regions (3 marks)

1 _____

2 _____

3 _____

4. What 4 other issues must be addressed in the treatment of this injury prior at discharge including drug doses where appropriate (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 10

A 25 year-old male involved in a motorbike accident was brought to the ED at a tertiary level centre. A trauma series was performed with a normal CXR and C-spine Xray. The following radiological imaging was undertaken.

Vital signs are: RR 20 sat 99% on room air HR 115 BP 80/50 GCS 15



1. List the abnormalities on this Xray (2 marks)

1 _____

2 _____

2. What clinical signs are associated with this injury on examination (1 mark)

1 _____

2 _____

3 _____

3. Give the 4 most likely causes of hypotension in this patient (2 marks)

1 _____

2 _____

3 _____

4 _____

4. List the five most important treatment and disposition priorities, as the team leader, in treating this patient's hypotension. Give details (5 marks)

1 _____

2 _____

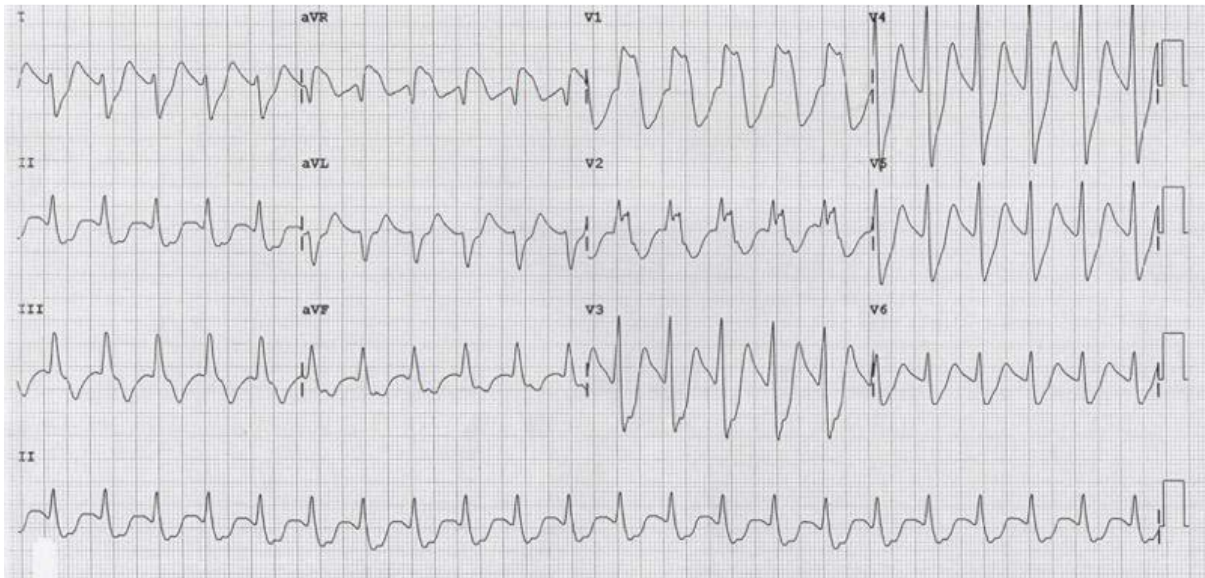
3 _____

4 _____

5 _____

Question 11

A 38 year-old female was brought to the ED by her husband. She was agitated but is now drowsy and her GCS is 13. An ECG was performed.



1. You note a wide complex tachycardia. Describe the two other important findings on the ECG (2 marks)

1 _____

2 _____

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

3. Her GSC decreases to 10 and you decide to proceed with intubation.

HR 120
BP 95/70
Sats 98% on NRM
RR 30
Temp 36.8 degrees

NS 500mls bolus is started.

What medications would you give during the next 5-20 minutes prior and during the intubation? Include doses where appropriate (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

4. After intubation she has a generalised seizure. What medications would you give at this point (2 marks)?

1 _____

2 _____

Question 12

You are working at a rural ED located near an Australian ski field. You receive a 27 year old man who has fallen into a frozen lake while hiking. He has arrived to your resuscitation room 30 minutes after submersion. His core temperature is 27.4 °C

1. Define hypothermia and hypothermia severity? (2 marks)

1 _____

2 _____

3 _____

4 _____

2. What four features of hypothermia are demonstrated on an ECG other than VF? (2 marks)

1 _____

2 _____

3 _____

4 _____

3. His rhythm on the monitor changes to VF. ACLS algorithm is started with breaths and compression, but no cessation of VF after 3 rounds of defibrillation and 1mg of adrenaline iv. How will you now differ your resuscitation compared to the usual ACLS algorithm? (4 marks)

1 _____

2 _____

3 _____

4 _____

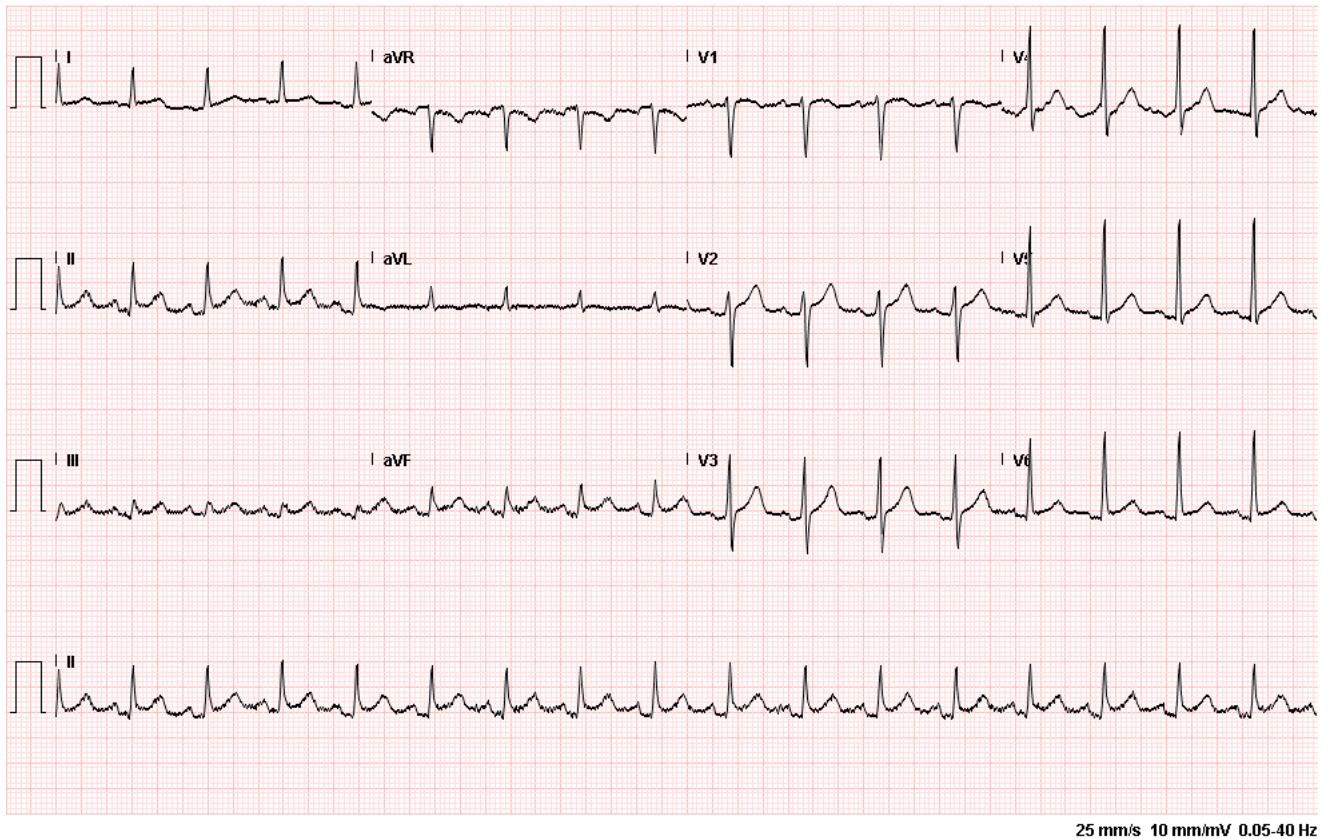
4. What are the 2 main types of warming and give 2 examples of how each can be achieved? (2 marks)

1 _____

2 _____

Question 13

It is 1600 on Saturday afternoon. A 75 year old woman with a background of CRF on peritoneal dialysis and diet controlled diabetes presents with retrosternal chest pain radiating to neck and both arms which started 60 minutes previously. She is well functioning in the community and her only medications are irbesartan, calcium and vitamin D. She has no allergies. She is vitally stable and the following ECG is performed:



1. What are the diagnostic features on the ECG? (1 mark)

2. If you were working at an urban major referral hospital with 24 hour on-call PCI capabilities, would you activate the PCI team – they have no access to the ECG and will act on your recommendation and outline your reasoning? (2 marks)

3. If you were working at a rural emergency department would you give thombolysis considering that at this time the availability of transfer to PCI is 3 hours (2 marks)

4. List 10 features (4 history, 3 ECG and 3 other investigations) that would increase the diagnostic possibility of STEMI over pericarditis (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

7 _____

6 _____

7 _____

8 _____

9 _____

10 _____

Question 14

Your registrar asks you for advice. A 50 year old female has presented following a collapse and is now increasingly confused. Her only injury is a minor abrasion to her forehead.

You have the following blood/urine results thus far:

| | |
|----------------------|---------------------|
| Glucose 16.4 | Hb 13.1 |
| Na 111 | WCC 12.2 |
| K 4.2 | Plts 175 |
| Urea 7.2 | |
| Creatinine 102 | Patient weight 65kg |
| Urine Osmolality 125 | Urine Na 42 |

1. What is her calculated Na? (1 mark)

2. What is her calculated osmolality (1 mark)

3. What are 12 criteria for SIADH on history, examination and investigations? (6 marks)

1

2

3

4

5

6

7

8

9

10

11

12

4. She remains confused and then has a seizure. What is your specific treatment and what is your endpoint. (2 marks)

1

2

Question 15



1. What is this device? (1 mark)

2. Describe 2 clinical situations when you might consider using this device in ED? (1 mark)

1

2

3. How can you confirm the placement of this device? (3 marks)

1

2

3

4. Describe clinical situations when this device would be inappropriate/ contraindicated. (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

Question 16

A 22 year old female medical student is brought in by ambulance following a short seizure at home. She has recently returned from her elective in Malawi. Her student friends are unsure if she took any of her medications because they gave her nightmares. She is now drowsy and not orientated. You call public health and they do not suspect Ebola.

1. Name the most likely causative organism (1 mark)

2. A BSL is normal. What other four initial blood tests will you arrange immediately and what would you expect for each? (4 marks)

1 _____

2 _____

3 _____

4 _____

3. Public health calls back as there has been a new report of 5 cases of Ebola confirmed in Malawi in the clinic the medical student was at. Outline the important issues. (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

Question 17

A 70 kg 26 year old man is involved in a house fire in an enclosed room. He has burns to the whole of his head, the ventral aspects of both arms and 3% on his chest.

1. What are the signs that would alert you to an airway problem in this patient? (4 marks)

1 _____

2 _____

3 _____

4 _____

2. Calculate the % burn (1 mark)

3. What fluid would you chart (type and amount) each hour for the first 8 hours – show your calculation? (3 marks)

1 _____

2 _____

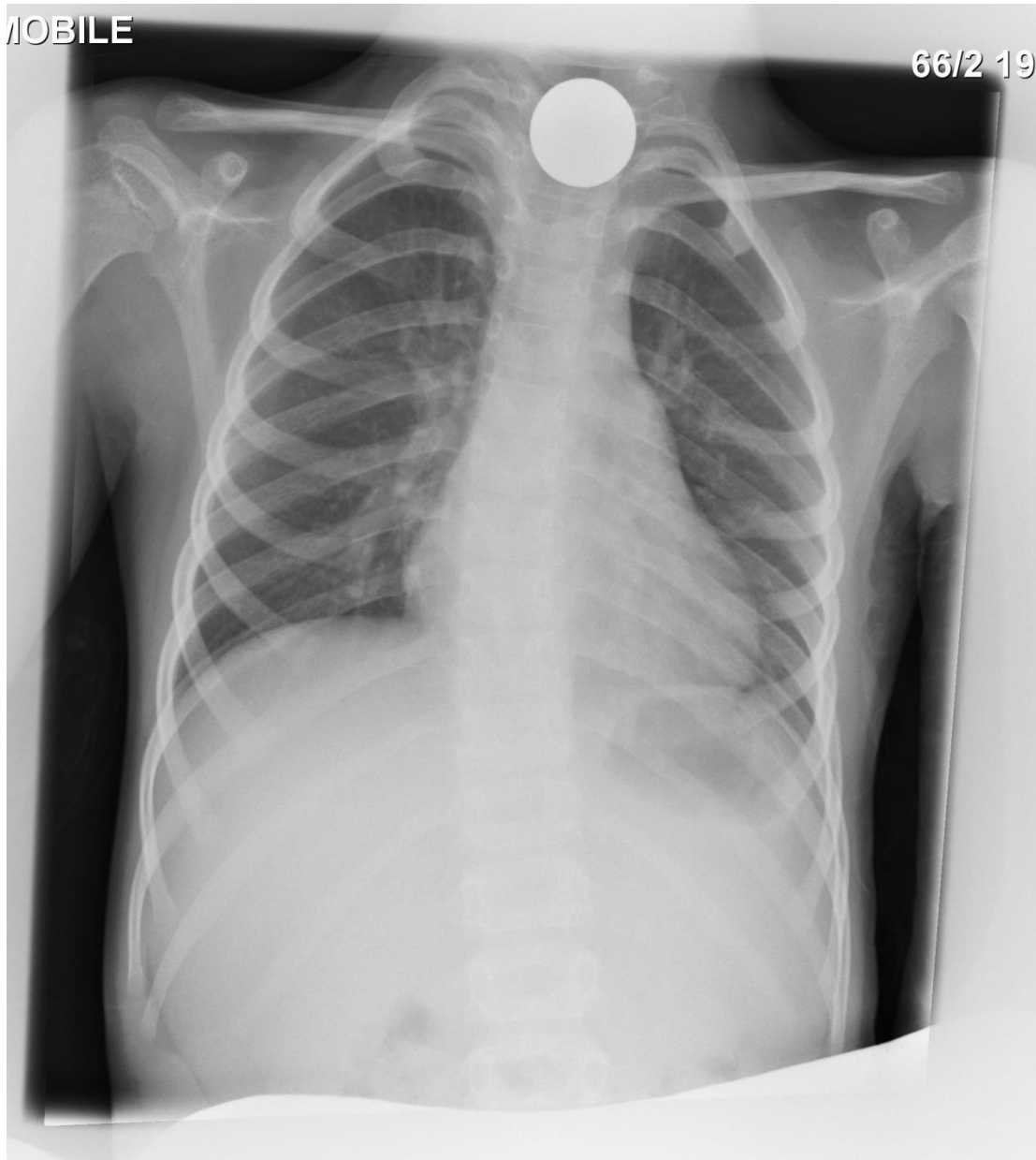
3 _____

4. What analgesia would you give and by what route? (1 mark)

5. What would you aim his urine output to be? (1 mark)

Question 18

A 2 year old boy is brought into the ED by his mother after swallowing his older sister's earring.



1. What in the history would alert you to the presence of a foreign body? (3 marks)

1 _____

2 _____

3 _____

2. You review the Xray. Do you think the FB is in the trachea or oesophagus and why? (1 mark)

3. Where in the oesophagus might a foreign body become lodged? (3 marks)

1 _____

2 _____

3 _____

4. Describe 3 instances where this FB would need to be removed urgently (3 marks)

1 _____

2 _____

3 _____

Question 19



A 19 year old girl is brought in by her friend after an episode of collapse. They had been taking ecstasy and dancing all night. She has a temperature of 39 degrees, HR 140bpm, BP 190/110. She appears dehydrated, agitated and has a resting tremor. She is catheterised with the above urine.

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

2. What is the most important electrolyte result you would want to know before starting treatment and why? (2 marks)

3. The laboratory ring you with an urgent Na result of 112mmol/l. Name four further steps in the ED management including drug doses and route where appropriate. (4 marks)

1 _____

2 _____

3 _____

4 _____

4. Name 3 clinical signs in this patient that would best correlate with serotonin toxicity (3 marks)

1 _____

2 _____

3 _____

Question 20

A 42 year old man fell off his bicycle when travelling at 20km/h. He complained of left forearm pain. He had the following X-rays taken.



1. What are the abnormalities on the X-ray? (2 marks)

1 _____

2 _____

3 _____

2. List the 2 most likely nerve injuries (2 marks)

1 _____

2 _____

3. Your registrar decides to perform procedural sedation. Outline your checklist with details of each of the major area. (6 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

Question 21

A 57 years old male presented to ED with a sudden onset red painful right eye. You suspect a diagnosis of acute glaucoma

1. What are the features of acute Glaucoma on examination? (4 marks)

1 _____

2 _____

3 _____

4 _____

2. How does glaucoma cause blindness? (1 mark)

3. List the 5 most relevant topical medications used in primary open angle glaucoma and explain why they are used: (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

Question 22

A 32 year-old alcoholic diabetic male presents with a painful facial swelling from a tooth abscess which has been getting worse over 2 days. He is of no fixed address and has been unable to get to a dentist. His vital signs show a HR: 110bpm, BP 120/75; RR 24 with saturation of 94% and aural temp of 38.5 degrees C. His neck and throat are tender to palpation and are swollen. He has difficulty opening his mouth and is unable to protrude his tongue. His tongue appears displaced superiorly and anteriorly.

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

2. What are the 2 serious complications of this diagnosis? (2 marks)

1 _____

2 _____

3. List your top 3 treatment priorities (3 marks)

1 _____

2 _____

3 _____

4. List the antibiotic choices that may be useful and state the rational for your choice. (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 23

A 32 year old lady who is 36 weeks pregnant presented with headache, drowsiness and her observations and results are as follows:

| | |
|----------------|-------------------------------|
| Pulse 110 bpm | Hb 9gm/dl |
| BP 180/110mmhg | WCC $8 \times 10^9/L$ |
| RR 24/min | PLT $34 \times 10^9/L$ |
| Sats 96% air | LFT: AST 120 u/L, ALT 135 u/L |
| | LDH 750 u/L |

1. What is the diagnosis? (2 marks)

2. What 2 anti-hypertensive drugs would you consider to treat her blood pressure, state doses? (2 marks)

1 _____

2 _____

3. You have paged the PICU doctor and obstetrician to your resuscitation room. Your patient starts to have a seizure. What are the first four things you would do? (4 marks)

1 _____

2 _____

3 _____

4 _____

4. What are the 4 signs of maternal toxicity with magnesium sulphate which would predict either respiratory or cardiac arrest? (2 marks)

1 _____

2 _____

3 _____

4 _____

Question 24

A 4 year old male is brought to your emergency department by his parents because he is having difficulty breathing. You notice there is an audible wheeze, RR 36 and he is able to speak in sentences.

1. List 6 features of acute severe asthma (2 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

2. List the medications you would use initially including doses in this child if you identified the features of moderate severity asthma prior to being able to place an iv (4 marks)

1 _____

2 _____

3 _____

4 _____

3. What are the signs of salbutamol toxicity? (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 25

A 22 year old male with known cerebral palsy presented to ED with a seizure. He complains of worsening headache and is known to have VP shunt. His observations are stable and GCS 15.

1. List the 2 most likely causes of worsening headache in this man? (2 marks)

1 _____

2 _____

2. How do you interpret shunt function after locating and pressing the chamber? (2 marks)

1 _____

2 _____

3. What 2 radiological investigations will you arrange for a suspected blocked VP shunt. Explain your rational for each (2 marks)

1 _____

2 _____

4. The neurosurgical registrar asks you to perform a shunt tap. Outline the steps (2 marks)

4. What are the possible outcomes of the shunt tap and what is their significance? (2 marks)

1

2

Question 26

The concerned parents of a 2 day old infant present for review at your emergency department. They have noted that there is marked yellowing of the skin. You note that the yellow discoloration extends from the head to the trunk but not to the arms or legs.

1. List 6 differentials you would consider for this neonate. (3 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

2. List the most relevant investigations which you would consider in the ED. (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

3. The conjugated bilirubin level is greater than 15% of the total (measured level at 15microM/L). What would be the next appropriate investigation and why? (2 marks)

Question 27

A 25 year old male presented to your ED after taking an overdose of 100 tablets of aspirin 300mg.

1. List three specific clinical features of aspirin toxicity that you might expect him to develop? (3 marks)

1 _____

2 _____

3 _____

3. A VBG is performed. What would you expect? (3 marks)

1 _____

2 _____

3 _____

4. What reasons would you consider haemodialysis? (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 28

A 52 year-old female is presenting to the ED with a 3 day history of feeling generally unwell with nausea and abdominal pain. She is afebrile (T 36.7°C), HR 78 and BP 85/50mmHg

Blood results are as follows:

Na 126mmol/L

K 5.7mmol/L

Glucose 2.3mmol/L

Calcium 2.6mmol/L

1. What is your provisional diagnosis for this woman? (2 marks)

2. List the 2 main pathophysiological causes for this presentation? (2 marks)

1 _____

2 _____

3. What other blood investigations will be helpful in confirming your diagnosis? (2 marks)

1 _____

2 _____

4. List four management steps and rationale behind each (4 marks)

1 _____

2 _____

3 _____

4 _____

Question 29

A 5 year old boy has been brought to your emergency department after a road traffic accident. He has had a blood transfusion commenced by the retrieval service for haemorrhagic shock. The second unit has already been commenced.

1. What is the definition of massive transfusion in this child? (2 marks)

2. List eight potential complications of massive transfusion for this child (4 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

3. If he was to have a cardiac arrest. What are the 4 likely causes (4 marks)

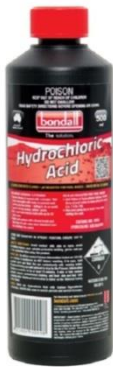
1 _____

2 _____

3 _____

4 _____

Question 30



A 2 year old boy weighing about 20 kg was brought to your regional ED by his mother having accidentally swallowed hydrochloric acid kept near a BBQ. The ingestion took place 20 minutes prior to arrival.

1. What are 5 features that would alert you to impending airway compromise? (5 marks)

1 _____

2 _____

3 _____

4 _____

5 _____

2. How would you decontaminate this ingestion? (1 mark)

3. What are the indications for endoscopy within the first 24 hours? (4 marks)

1 _____

2 _____

3 _____

4 _____