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**2019.2**

**South Australia  
&  
Northern Territory  
Trial SAQ Exam**

**Booklet 1**

**SAQs 1 – 9**

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**SAQ 1 (13 marks)**

You are the ED consultant on an evening shift and your resident presents the following patient to you:

“Mrs. Smith is an 86-year-old female who fell at home today. She tripped over a rug in her lounge room and landed on her left side. She is complaining of pain in her left hip and groin.”

- a) Apart from pelvic and proximal femur fractures, list three (3) other frailty fractures you need to consider (3 marks)

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- b) List two (2) physical examination findings for each of the following fractures which may help differentiate it from other injuries. (6 marks)

Injury	Two (2) Physical examination findings
Intertrochanteric neck of femur fracture	1  2
Greater trochanter fracture	1  2
Pubic rami fracture	1  2

c) Describe the findings on the pelvic x-ray (**see image in props booklet**) (1 mark)

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d) Describe the treatment of this injury (2 marks)

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e) What is the likely disposition of this patient (1 mark)

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**SAQ 2 (15 marks)**

A 30y old male, presents to your ED with a productive cough, fever, shortness of breath and haemoptysis. He has a history of IV drug use but no other significant past medical history.

His observations are temperature 38.6, respiratory rate 30, saturating 91% on room air, pulse 140bpm (sinus rhythm) and BP 90/55

- a) Please list three (3) of the most important abnormalities on his chest X. **(see image in props booklet)** (3 marks)

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- b) Please list the three (3) most common infectious organisms and two (2) non-infectious causes that could produce a similar appearance on chest X-ray (5 marks)

Infectious organisms:

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Non-infectious causes:

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5.

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- c) List and justify the four (4) most important investigations that may assist in establishing a diagnosis (4 marks)

Investigation	Justification
1	
2	
3	
4	

- d) Briefly outline three (3) of the most important initial treatments you would institute in this patient (3 marks).

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**SAQ 3 (12 marks)**

You are undertaking a locum shift in a regional emergency department. A 63-year-old male has presented reporting recurrent chest pains for the past week. The pain was initially intermittent, but became constant after eating dinner last night, roughly 12 hours ago. He has a history of gout, takes allopurinol and has no allergies. He has been placed in the resus bay and been connected to cardiac monitoring. His ECG is shown **in the props booklet**.

a) Please describe and interpret the ECG (**see image in props booklet**) (4 Marks)

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b) List four (4) additional investigations that might clarify the extent of the patient's problem and explain how they may help to do so. (4 marks)

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c) List four (4) medications (with routes of administration and doses) you will prioritise in your management of this patient. (4 Marks)

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**SAQ 4 (24 marks)**

You are attending a vehicle accident on a busy highway. A 4-wheel-drive has collided with a truck carrying hazardous material. There are fire, state emergency service and ambulance crews in attendance. There are a number of casualties.

- a) With regards to management of mass casualty situations, what are the seven (7) key elements of the on-scene management of a major incident response? (7 marks)

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The fire officer in charge of the scene is waiting to give you a METHANE report to update you on the current situation.

b) Outline the meaning of the disaster communication acronym METHANE (7 marks)

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**E**

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**T**

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- c) What are the two (2) types of on-scene major incident triage that occur in a mass casualty situation, and what does the result of each triage determine? (4 Marks)

<b>Triage Type</b>	<b>Determines what?</b>

- d) Your initial survey of the scene reveals that all but one of the 5 patients are walking wounded. The last patient is trapped in the 4WD by his legs. He is screaming in pain with an obvious open humeral shaft fracture. BP 60/30, P160, Sats 80%, RR 46 with reduced AE right chest, GCS 15 and a patent airway. It is estimated that it will take 20 minutes to free him safely. You have access to both arms and his torso and airway. List 6 (six) immediate management steps you will take. (6 Marks)

1.

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4.

5.

6.

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**SAQ 5 (12 marks)**

An 18 year old man presents with a 2-week history of general malaise, myalgia and fever. He reports that he was given a course of antibiotics by his GP two weeks ago for a cough, but has continued to feel unwell despite completing the course. He presents today worried about a painful rash involving his skin and mouth that has rapidly developed over the past 24 hours.

- a) List the three (3) MOST IMPORTANT differential diagnoses for this rash. **(see image in props booklet)** (3 marks)

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- b) What are the four (4) of the most common causes of this disease? ( 4 marks )

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c) Name two (2) risk factors for this disease ( 2 marks )

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2.

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d) List three (3) important treatments for this patient, irrespective of the cause of the rash ( 3 marks )

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**SAQ 6 (12 marks)**

You are the ED Consultant leading the Trauma team in a Major Trauma Centre.

A 32 year old, previously healthy male has been brought in following a high-speed motor-bike crash which occurred approximately 90 minutes ago. His scene GCS was initially 13, E3 V4 M6, then declined to 7, E1 V2 M4, and he was subsequently intubated. The patient has had bilateral finger thoracostomies and given 2 units of PRBC by the pre-hospital retrieval service.

The initial primary survey in the resus room reveals

A – ETT at 22cm at the teeth.

B – Sats 96% on FiO2 100%, PEEP 5, ETCO2 47, TV 500, Rate 12, PIP 20

C – BP 110 / 60 mmHg, MAP 77, PR 117

D – E1 VT M1, Pupils 4mm, equal and reactive

E – Temp 35.7, right sided scalp and facial lacerations. Bruising to right flank. Pelvic binder in-situ. Patient weight approximately 80kg. Sedated on propofol 1% infusion at 10mls per hour with intermittent fentanyl, last being 40mcg 10 minutes before arrival in resus.

There has been a CXR, PXR, eFAST performed. **(see images in props booklet)**

- a) List three (3) different life-threatening injuries present in this patient and the basis for your diagnoses (6 marks)

Injury	Basis for diagnosis

VBG results are

pH	7.18	
HCO <sub>3</sub>	20	mmol/L
pCO <sub>2</sub>	57	mmHg
pO <sub>2</sub>	83	mmHg
Lactate	3.2	mmol/L (n < 2)
Ion Ca.	0.87	mmol/L (n 1.1 – 1.3)
Na	138	mmol/L (n 135-145)

b) On the basis of his VBG, what medication and dose should you administer immediately? (1 mark)

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c) What would be your ventilation strategy and aim? (2 marks)

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d) What blood pressure goals will you have for this patient and state your reasoning? (2 marks)

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His current observations haven't changed in the first 20 minutes in the resus bay but his right pupil is now 7mm and un-reactive.

e) State one (1) treatment and dose you would give (1 mark)



**SAQ 7 (14 marks)**

A 16-year-old boy is brought into the ED by his parents with a complaint of fever and fatigue for six days. Further questioning reveals that he has had some weight loss and has noticed a firm non-painful lump in the left lateral side of his neck. He denies any cough, difficulty breathing, gastrointestinal, or urinary symptoms.

Vital signs are: Pulse 110, BP 108/62 mmHg, RR 18, sats 98% on room air, T 39.2 Celsius

a) List your three (3) top differential diagnoses (3 marks)

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b) List the three (3) most important additional historical features you would seek to help establish a diagnosis and explain how each may be of use. (3 marks)

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c) List the three (3) most important physical examination findings you would look for to help establish a diagnosis and explain how each may be of use (3 marks)

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2.  
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d) Describe five (5) investigations that might be most helpful in diagnosing this boy's illness, and explain how each may be of use (5 marks)

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**SAQ 8 (14 marks)**

An 18-month-old boy presents with fever for 48 hours on a background of being non-specifically unwell for several weeks. His parents are concerned that he has been coughing for 'several months' and is 'never healthy'.

His parents report he was a term baby 3.5kg with no complications and appeared well until breast feeding was ceased at around 5 months of age when his mother returned to work, since then he has had several 'chest infections'. He is fully immunised. His GP has prescribed a course of antibiotics on 3 separate occasions. He was admitted overnight to hospital 4 months ago with a right sided pneumonia.

His observations are below:

Temp	38.2 C
HR	120 bpm
RR	42 /min
BP	88/50 mmHg
SpO2	95% on room air

On examination: right sided crackles, chesty wet cough, eating and drinking well and not dehydrated. Playful and running around.

- a) His CXR is shown (**see image in props booklet**). Provide your interpretation (1 mark)
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- b) Outline appropriate antibiotic choice, dose and frequency for an 18-month-old child with mild pneumonia. Include antibiotic choice for penicillin allergic (severe anaphylaxis) and non-allergic child. Use the table below (4 marks)

	<b>Antibiotic</b>	<b>Dose and frequency</b>
<b>No allergies</b>		
<b>Severe penicillin allergy</b>		

- c) What is the recommended duration of oral antibiotic therapy in mild paediatric pneumonia (1 mark)

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- d) Give four (4) possible explanations for this child's recurrent illnesses (4 marks)

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- e) Outline your preferred disposition of this patient and justify? (1 mark)

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f) List three (3) follow up investigations that would be appropriate to help determine the cause for his recurrent infections (3 marks)

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**SAQ 9 (14 marks)**

A 5-year-old child is brought to ED after an unwitnessed fall in a playground at school, complaining to her parents about a 'sore' and swollen elbow when they picked her up. Her reception classmates say that she may have fallen from monkey bars. She has a pain score of 7/10 and points to her left elbow as the site of pain. The elbow is swollen, with localised bruising anteriorly and no open wounds. She is reluctant to fully flex the elbow and is neurovascularly intact distally.

X-rays of her elbow as ordered by the triage nurse are seen below **(and in the props booklet)**.

a) Please describe five (5) of the most important findings on X-ray **(see images in the props booklet)**. These may be positive or negative findings. (5 marks)

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b) Outline the specific management of this injury (3 marks)

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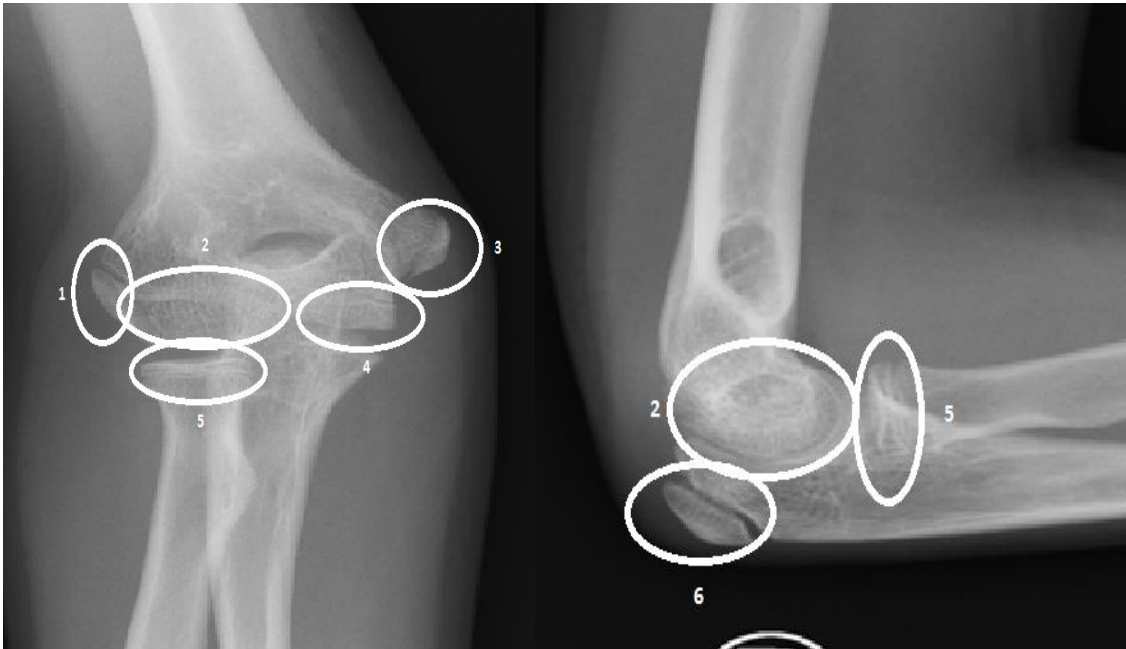
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c) Using the numbers for each of the ossification centres around the elbow in the images below **(also available in the props book)**, list (in chronological order from first to last), each ossification centre in the table that follows. Also name the ossification centre associated with each number and the age each ossification centre is normally visible on radiography (6 marks)



Number of ossification centre (in order of appearance from first to last)	Name of ossification centre	Age first visible