"List" = 1-3 words
"State"= short statement/ phrase/ clause

UNIVERSITY HOSPITAL, GEELONG
FELLOWSHIP WRITTEN EXAMINATION
WEEK 7– TRIAL SHORT ANSWER QUESTIONS Suggested answers

PLEASE LET TOM KNOW OF ANY ERRORS/ OTHER OPTIONS FOR ANSWERS
Please do not simply change this document - it is not the master copy !

Question 1 (16 marks) 9 minutes

A 27 year old previously well woman presents with a headache for the last two days.
The patient is noted to have a temperature of 39°C. Following your clinical assessment, you decide that a lumbar puncture is indicated.

a. List five (5) contraindications to performing a lumbar before performing a CT Brain. (5 marks)
   - **Altered conscious state**
   - **Focal neurological signs**
   - **Signs of raised intracranial pressure**
   - **Underlying immunocompromise**
   - **Seizure within 1 week**

A lumbar puncture is performed.

No. of tubes	4		
Appearance	Clear		
Supernatant	Colourless		
Volume	3.5	mL	
In tube 3:			
WBC			
Neutrophils	20	$x10^6$/L	(<5)
Lymphocytes	111	$x10^6$/L	(<5)
RBC	8	$x10^6$/L	(<5)
Glucose	3.0	mmol/L	(2.8–4.0)
Protein	750	mg/L	(150–500)
Gram stain	No organisms seen.		

b. State two (2) interpretations for the Red blood cell count. (2 marks)
   - **< 1000 suggests traumatic tap**
   - **Not consistent with SAH Usually > 10,000**

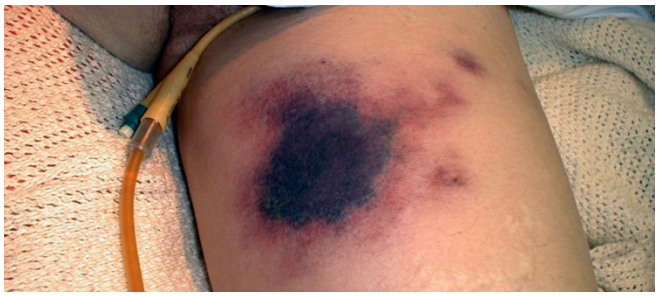
c. List five (5) likely differential diagnoses for these results. (5 marks)
   - **Partially Rx bacterial meningitis**
   - **Viral meningitis**
   - **Fungal meningitis (eg cryptococcal)** (lymphocytosis highly suggestive tb or fungal)
   - **Tb meningitis**
   - **Viral encephalitis**
   - **Aseptic meningitis e.g. Kawasakis disease**

d. List two (2) medications that you would commence for the specific treatment of this patient. Provide one justification for each choice. (4 marks)

Medication (2 marks)	Justification (2 marks)
Antibiotics eg. ceftriaxone 50mg/kg IV BD or 2g IV	**Possibility of partially treated bacterial meningitis associated with high morbidity and mortality**
Antivirals eg Acyclovir 10mg/kg	**Possibility of meningo/ encephalitis- high morbidity/ mortality if untreated**
Steroids eg Dexa 10mg	**Needs to be given prior to or with first dose of abs Evidence shows in children reduced incidence audiologic and neurologic cx and in adults reduced mortality**

Question 2 (13 marks) 6 minutes

A 60 year old male is brought to the Emergency Department with confusion, fever and a painful left leg.



a. State the most likely diagnosis. (1 mark)
   - **Necrotising fasciitis**

b. List three (3) investigations that you would perform in this case. Provide one justification for each choice. (6 marks)

Investigation	Justification
FBE	**WCC > 20 or < 5 highly suspicious bacterial infection esp if associated with left shift, thrombocytopenia may be indicative complicating DIC**
CK	**High probability muscle rhabdo/ myonecrosis**
CT leg	**Looking for extent of soft tissue infection for surgical planning, presence gas, and exclusion ostoemyelitis**
U+E	**Check for renal impairment in setting possible septic shock, and/or rhabdo**
Blood cultures	**Identify causative organism and guide targeted antibiotic treatment**
Coags	**Possibility of DIC**
VBG/ ABG	**Acidosis as marker of severity of illness**

Analgesia and fluids are provided.

c. List three (3) specific treatments that you would consider for this patient. Provide one (1) justification for each choice. (6 marks)

Treatment	Justification
Urgent broad spectrum Abs: meropenem 1g IV q8h + clindamycin 600mg IV q8h +/- van 1.5g IV	**Early antibiotics within 1/24 presentation improves mortality rates, Limit spread infection**
Hyperbaric oxygen	**Key to minimise spread**
Surgical debridement	**Key to prevent ongoing widespread tissue loss**

Question 3 (12 marks) 6 minutes

A 45 year old female presents with a sudden onset of isolated L facial droop.

a. List six (6) differential diagnosis for this presentation. (6 marks)

Trauma • Basal skull fractures • Facial injuries • Penetrating injury middle ear • Altitude paralysis (barotrauma) • Scuba diving (baro **Infection** • External otitis • Otitis media • Mastoiditis • Chickenpox • Herpes zoster encephalitis (Ramsay Hunt syndrome) • Encephalitis • Mumps • Mononucleosis • Influenza • Coxsackievirus • Malaria • Syphilis • Scleroma • Tuberculosis • Botulism • Lyme disease • Cat scratch • AIDS	**Metabolic** • Diabetes mellitus • Hyperthyroiditis Neoplastic • Leukaemia • Meningioma • Hemangioblastoma • Sarcoma • Carcinoma (invading or metastatic) • Anomalous sigmoid sinus • Carotid artery aneurysm • Hemangioma of tympanum • Hydradenoma (external canal) • Facial nerve tumour (cylindroma) • Schwannoma • Teratoma • Neurofibromatosis • Benign lesions of parotid • Cholesteatoma • VII n tumour	**Iatrogenic** • Postimmunization • Parotid surgery • Mastoid surgery • Post-tonsillectomy/ adenoidectomy • Iontophoresis (local anaesthesia) • Embolization • Dental Environmental • Snake bite Neurologic • Cortical lesion • MS • M Gravis • Mononeuritis multiplex

You assess the patient to have a lower motor neurone isolated CN VII palsy.

b. List three (3) medications that you may prescribe for this condition. Provide a justification for each choice. (6 marks)

Medication	Justification
Antivirals **e.g. famciclovir 250mg PO OD 7d**	**Majority CN VII palsies thought to be due to HSV 1** **may be of some benefit in severe disease if started early (early antivirals do not decrease post herpetic neuralgia)**
Steroids **e.g. prednisolone 50mg OD 5days**	**Some evidence to suggest this it improves likelihood of complete recovery by 10% if started within 72hrs onset symptoms** **Does reduce incidence post herpetic neuralgia**
Natural tears	**Ectopion is very common- complicated by corneal ulcer/ keratitis**

Question 4 (12 marks) 6 minutes

A 4 month old boy presents with a suspected non accidental injury.

NB: answers must reflect a 4 month old patient.

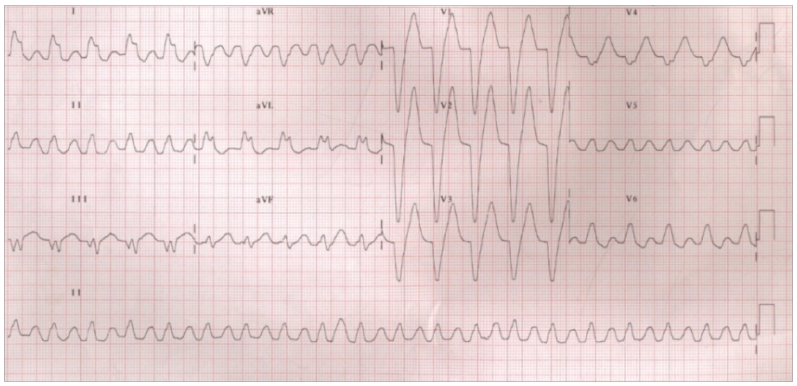
a. List four (4) historical findings that would support your suspicion **in this patient.** (4 marks)
   - **Stated MOI inconsistent with injury sustained**
   - **Changing history of events/inconsistent btw care givers**
   - **Delayed presentation**
   - **Past presentation suspicious NAI**
   - **Injury not consistent with developmental age**
   - **Previous inv. with DHS with other children/siblings**
   - **Domestic violence, drug and alcohol, low SES**
   - **Irritable baby, prematurity, congenital condition**

b. List four (4) examination findings that would support your suspicion **in this patient.** (4 marks)
   - **Oral injuries e.g. torn frenulum, palatal petechiae**
   - **Eyes: retinal haemorrhages**
   - **Burns: cigarette, immersion, splash, branding**
   - **HI: altered conscious state**
   - **Abdo: tenderness**
   - **Skin: bruising multiple ages and multiple sites, e.g. torso, ears, face, neck e.g. pinching, slap mark, restraint, grab marks**
   - **FTT, growth and developmental delay**
   - **General: malnutrition, poor hygiene**
   - **Genital injury**

c. List four (4) radiological findings that would support your suspicion **in this patient.** (4 marks)
   - **Practically any fracture in this age group**
   - **Healing #s different ages**
   - **Metaphysical chip # long bones**
   - **Spiral # long bones e.g. humerus**
   - **CTB: subdural hematoma, acceleration-deceleration injury, diffuse axonal injury**
   - **Posterior rib #**
   - **Avulsion # thoracic/lumbar spine**
   - **Torsional injury, bucket handle injury**

Question 5 (12 marks) 6 minutes

A 35 year old presents following a stated overdose.



a. State five (5) abnormalities shown in this ECG. (5 marks)
   - **Absent P waves**
   - **QRS 160- 180**
   - **Rate ~110- 120 – regular BCT**
   - **Poor R wave progression**
   - **ST segment blurring in V1-4, V6**
   - **Peaked T waves V1-V3**
   - **Prolonged QT**

b. List three (3) possible causative drugs (each must be from a different drug type). (3 marks)
   - **TCA- Amitriptyline**
   - **Carbamazepine or phenytoin**
   - **Sedating Antihistamines**
   - **Digoxin**
   - **Quinidine**
   - **KCl**

The patient experiences a ventricular fibrillation arrest prior to the initiation of any care.

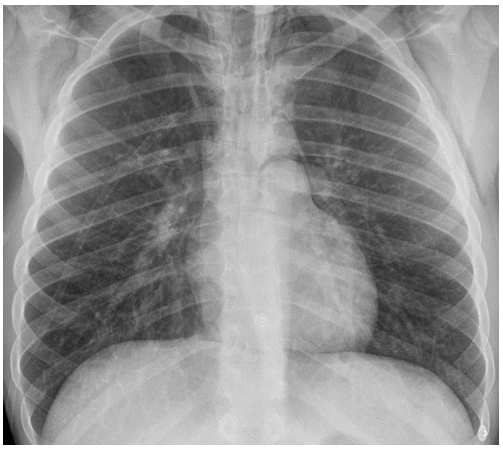
c. State two (2) modifications for this patient to your standard management of a ventricular fibrillation arrest. State one (1) justification for each modification. (4 marks)

NB: Amiodarone CI as prolonged QT
DCR doesn't work

Modification	Justification
NaHCO3 8.4% 100ml IV every 2-4 minutes until ROSC	**Indicated in Rx of suspected Na Channel blockade- source of concentrated Na** **Ionises the drug in urine, preventing resorption**
Prolonged efforts	**Numerous reports of intact neurological outcome in toxic OD cardiac arrest patients**
Digibind	**Key to Mx if Dig toxic**
Calcium gluconate **Hyperventilate** **ECMO**	*Options above are better*

Question 6 (12 marks) 6 minutes

An 18 year old male presents with chest pain.



a. State two (2) abnormal findings shown in this xray. (2 marks)
   - **Pneumomediastinum**
   - **L axilliary subcutaneous emphysema/ Neck subcutaneous emphysema**

b. State four (4) likely precipitating causes. For each cause, state the definitive management of the condition. (8 marks)

NB: *Oxygen Rx - not supported by evidence (in contrast to PTX)*
No limitation of intake- provided condition is improving
Abs are to minimise complications, not to provide definitive care

	Precipitating cause (4 marks)	**Definitive management options (4 marks)**
1.	**Valsalva eg bong smoking, coughing, sneezing, inhalation of illegal drugs that need forceful breath holding eg ecstasy**	**Conservative- analgesia and rest**
2.	**Asthma exacerbation**	**Rx underlying asthma, careful observation**
3.	**Vomiting (Boerhaaves syndrome)**	**Theatre**
4.	**Diving related**	**Conservative- analgesia and rest (NOT- recompression)**

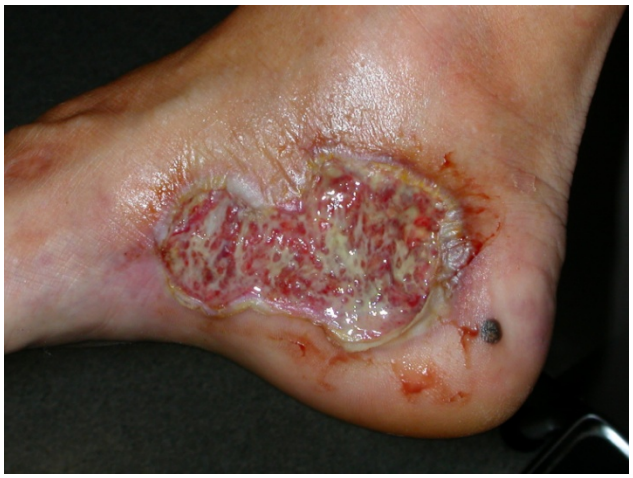
Soon after this xray is taken, the patient becomes distressed and is noted to have a BP of 75/40 with HR 170 /min.

c. State two (2) immediate steps in the treatment of this patient. (2 marks)

Evidence of tension:
- **incise sternal notch**
- **insert finger into pretracheal space to decompress**

Question 7 (11 marks) 6 minutes

A 64 year old female presents to ED two days after minor trauma to her right foot.



a. What diagnosis is suggested by this presentation and clinical photograph? (1 mark)
   - **Pyoderma gangrenosum**

b. List five (5) underlying diseases that may be associated with this process. (5 marks)
   - **IBD**
   - **RA**
   - **Lymphoma**
   - **Leukaemia**
   - **Myeloma**

c. List five (5) steps in the management of this condition. (5 marks)
   - **Dressings**
   - **Elevation**
   - **Steroids- topical/ intralesional**
   - **Steroids- systematic**
   - **Sulfasalazine**
   - **HBO_2**

Question 8 (12 marks) 6 minutes

It is 930 am on a Sunday morning. You receive a verbal complaint from an ED nurse who reports that an ED registrar was behaving erratically and was been abusive to nursing staff on last nights' night shift. He had previously performed without concern over a 2 year period in this department. The doctor has already departed the department.

a. List six (6) possible causes for this complaint. (6 marks)
   - **interpersonal clash**
   - **stress with workplace**
   - **significant personal stress**
   - **lack of sleep**
   - **medical problem**
   - **psychiatric problem**
   - **drug use**

b. Under what two (2) circumstances is mandatory reporting of practitioner impairment 'notable conduct' required by the Medical Board? (2 marks)
   - **Practiced their profession while intoxicated by alcohol or drugs**
   - **Placed the public at risk of substantial harm because of an impairment**

c. After undertaking a preliminary assessment of a notification, what further options does the Medical Board have if it decides that a Medical practitioner is impaired? List four (4) options. (4 marks)
   - **Immediate suspension**
   - **Impose conditions**
   - **Accept undertakings**
   - **Accept the surrender of registration**
   - **Require the practitioner to undergo a health assessment**
   - **Refer the matter to a health panel**

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Information on the management of impaired practitioners and students

20 January 2012

The Medical Board of Australia (the Board), via the Australian Health Practitioner Regulation Agency (AHPRA) receives notifications about medical practitioners and medical students. Under the *Health Practitioner Regulation National Law Act (National Law)*, as in force in each state and territory, impairment is one of the grounds for both voluntary and mandatory notifications, in specific circumstances. This document describes how the Board deals with impaired practitioners under the National Law.

What is impairment?

Impairment is defined in the National Law as follows:

> ***impairment***, *in relation to a person, means the person has a physical or mental impairment, disability, condition or disorder (including substance abuse or dependence) that detrimentally affects or is likely to detrimentally affect—*
>
> *(a) for a registered health practitioner or an applicant for registration in a health profession, the person's capacity to practise the profession; or*
>
> *(b) for a student, the student's capacity to undertake clinical training—*
>
> *(i) as part of the approved program of study in which the student is enrolled; or*
>
> *(ii) arranged by an education provider.*

As such, the term "impairment" has a specific meaning under the National Law. It refers to a physical or mental impairment, disability, condition or disorder that is linked to a practitioner's capacity to practise medicine or a student's capacity to undertake clinical training. That is, a person's physical or mental impairment, disability, condition or disorder is only of interest to the Board if it detrimentally affects or is likely to detrimentally affect a practitioner's capacity to practise medicine or a student's capacity to undertake clinical training.

Notification about impairment

Anyone can make a notification about a medical practitioner or medical student who they believe may be impaired. Typically, notifications about impairment are made by treating doctors, employers, education providers, statutory bodies and by the practitioners themselves.

Question 9 (22 marks) 9 minutes

a. List three (3) causes of acute fulminant hepatic failure (each to be a different pathological aetiology) (3 marks)

- **Viral**
  - **Hep A**
  - **Hep B esp if assoc with D**
  - **Hep C**
  - **Hep E**
- **Drugs**
  - **Halothane**
  - **Isoniazid**
  - **Paracetamol**
  - **Nitrofurantoin**
  - **Allopurinol**
  - **Amanita phalloides**
- **Others:**
  - **Budd Chiari**
  - **Wilson's**
  - **Reyes**
  - **AI CAH**

A 50 year old male presents with suspected decompensated liver failure.

b. List five (5) potential precipitants for this decompensation. (5 marks)

NB: Try to pick answers from different pathological subgroups- listing 6 different infections, does not demonstrate breadth of knowledge and is unlikely to get full marks.

- **Gastrointestinal bleeding**
- **Infection (including spontaneous bacterial peritonitis and urinary tract infections)**
- **Hypokalemia and/or metabolic alkalosis**
- **Renal failure**
- **Hypovolemia**
- **Hypoxia**
- **Sedatives or tranquilizers**
- **Hypoglycemia**
- **Constipation**
- **Alcohol binge**
- **Rarely, hepatocellular carcinoma and/or vascular occlusion (hepatic vein or portal vein thrombosis)**
- **Any secondary liver insult different to initial cause**

c. Complete the table demonstrating two (2) of the neurological features of each of the different stages of hepatic encephalopathy. (8 marks)

Grade	Clinical features
1.	**Drowsy, but coherent. Mild confusion. Mood change. Slurred speech**
2.	**Drowsy. Moderate confusion. Inappropriate behaviour**
3.	**Very drowsy/ but rousable. Marked confusion (stupor)** **Incoherent speech. Agitation/ restless/ screaming**
4.	**Comatose. Unresponsive to pain. Increased reflexes. Upgoing plantars**

The patient is noted to have ascites.

d. List three (3) potential benefits of performing abdominal paracentesis for this patient. (3 marks)

- **Investigation of new onset ascites**
- **Relieve pain**
- **Fluid for MC+S**
- **Unexplained acidosis in pt with ascites**
- **Mortality benefit if being admitted in some studies**

e. List three (3) potential complications of performing abdominal paracentesis for this patient. (3 marks)

- **Ascitic fluid leak**
- **Bleeding**
- **Bowel perforation/ infection**

NB: Death is very uncommon