

WRITTEN EXAMINATION

MULTIPLE CHOICE QUESTIONS (MCQ)

NSW Fellowship Course

Trial Exam 2018:1

EXAMINATION TIME: 3 HOURS

DIRECTIONS TO CANDIDATE

1. 120 questions
 - a. MCQ - 88 questions
 - b. EMQ - 32 questions
2. Answer all questions on the answer sheet provided
3. No negative marking
4. MCQs - indicate using pencil the single best answer
5. EMQs - select the correct letter for each question
6. All papers and materials will be collected at the end of the exam

AFTER THE EXAMINATION

1. Prior to leaving, please fill out an envelope with your return address
2. Feedback session - held at Westmead Hospital (Level 1 WECC) on 1st February 2018 (9am)

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PART 1

MCQ QUESTIONS

Using pencil please select the single best correct answer on the answer sheet provided

QUESTION 1

In research using surveys, which type of bias is REDUCED by use of closed ended questioning:

- A. Incorporation bias
- B. Observer bias
- C. Recall bias
- D. Selection bias

QUESTION 2

Extensor tendon rupture or avulsion fracture at the base of the distal phalanx is MOST likely to lead to:

- A. Boutonniere deformity
- B. Jersey finger
- C. Mallet finger
- D. Skier's thumb

QUESTION 3

'Kanavel's signs' for the diagnosis of flexor tenosynovitis include all of the following EXCEPT:

- A. Fusiform swelling, '*sausage digit*'
- B. Finger stuck in extended position
- C. Pain with passive extension
- D. Tenderness along the flexor tendon

QUESTION 4

A 21-year old non-pregnant female presents to ED with shortness of breath. She has no significant past medical history. The vital signs are HR 105, BP 125/76, sats 99% (on air), Temp 36.9°C.

The rest of the examination is unremarkable apart from swelling in the left calf.

The MOST appropriate approach to ED investigation for pulmonary embolism in this patient is:

- A. D-Dimer only
- B. CTPA only
- C. Ultrasound and D-Dimer
- D. Ultrasound only

QUESTION 5

A 56-year old patient who was commenced on therapeutic enoxaparin 6 days ago presents with a purpuric rash. The platelet count is $18 \times 10^9/L$. The next step in management is:

- A. Immediately cease enoxaparin and commence an alternative anticoagulant as the risk of thrombotic event is high
- B. Cease enoxaparin, no need to continue anticoagulation as bleeding risk secondary to thrombocytopenia is high
- C. Continue enoxaparin and monitor platelet count
- D. Cease enoxaparin and commence aspirin

QUESTION 6

All of the following criteria should be fulfilled for the diagnosis of SIADH, EXCEPT:

- A. Patient clinically is hypervolaemic
- B. Plasma osmolality $< 280 \text{ mOsmol/kg}$
- C. Plasma sodium concentration $< 135 \text{ mmol/L}$
- D. Urinary sodium concentration $> 30 \text{ mmol/L}$

QUESTION 7

Which of the following is CORRECT regarding the diagnosis of peripheral vertigo:

- A. Constant symptoms are usually present
- B. It is less intense when compared to central vertigo
- C. It is more likely to be sudden onset compared to central vertigo
- D. Vertical nystagmus is normally present

QUESTION 8

Regarding Thrombotic Thrombocytopenic Purpura (TTP), which of the following is INCORRECT:

- A. Can cause fever, anaemia, thrombocytopenia, renal failure and neurological symptoms
- B. Fibrinogen level is often low
- C. Plasmapheresis can be a first line treatment
- D. Platelet transfusions are only indicated for severe life-threatening haemorrhage

QUESTION 9

Which of the following is the MOST likely causative organism of prostatitis in a 38-year old:

- A. E. coli
- B. N. gonorrhoea
- C. Pseudomonas
- D. S. saprophyticus

QUESTION 10

An 18-year old presents with acute onset abdominal pain. Her urine B-HCG is positive. The MOST important independent risk factor increasing the risk of ectopic pregnancy is:

- A. Pelvic inflammatory disease
- B. Smoking
- C. Intra-uterine contraceptive device
- D. Endometriosis

QUESTION 11

A young patient with a family history of *'sudden death'* presents with syncope. ECG shows a prolonged QT of 540ms. Telemetry reveals the patient has narrow complex paroxysmal atrial fibrillation. The MOST appropriate drug for rate control of recurrent atrial fibrillation in this case is:

- A. Sotalol
- B. Labetalol
- C. Amiodarone
- D. Metoprolol

QUESTION 12

A 68-year old presents with back pain, excessive thirst and constipation. Bloods reveal acute kidney injury and hypercalcaemia. Which investigation is MOST likely to confirm the underlying diagnosis:

- A. LDH
- B. Parathyroid Level
- C. Renal Biopsy
- D. Serum Protein Electrophoresis

QUESTION 13

Regarding supraventricular tachycardia, which of the following is a relative CONTRAINDICATION to the use of adenosine:

- A. Chronic Renal Failure
- B. Age < 1-year
- C. Pregnancy
- D. COPD

QUESTION 14

A normally well 67-year old female presents to ED with abnormal behaviour. Her sodium level is 114 mmol/L. She is euvolemic on examination. The measured serum osmolality is 235 mmol/L and urine sodium is 45 mmol/L. The MOST relevant investigation in her ongoing diagnostic workup is:

- A. Chest x-ray
- B. Echocardiography
- C. Renal biopsy
- D. Liver function tests

QUESTION 15

The patient described in 'QUESTION 14' subsequently has a tonic-clonic seizure in the Emergency Department which resolves spontaneously. The MOST appropriate initial treatment is:

- A. 500mls IV 0.9% saline immediately
- B. Fluid restriction
- C. 100mls IV 3% saline over 10 minutes
- D. 100mls IV 3% saline over 1 hour

QUESTION 16

The MOST common cause of an inappropriate shock in a patient with an implantable defibrillator is:

- A. Lead fracture
- B. Electrical interference
- C. Atrial fibrillation
- D. Inappropriate sensing

QUESTION 17

Which of the following conditions has the LOWEST risk of bacterial endocarditis:

- A. A patient with a prosthetic heart valve
- B. A patient with a systemic to pulmonary shunt
- C. A patient with an atrial septal defect
- D. A patient with a previous episode of endocarditis

QUESTION 18

Which factor has the LOWEST value in predicting cardiac failure as a cause of shortness of breath:

- A. Documented history of congestive cardiac failure
- B. Paroxysmal nocturnal dyspnoea
- C. Presence of a third heart sound
- D. Presence of a fourth heart sound

QUESTION 19

Regarding Propofol, which of the following is FALSE:

- A. Patients show little variability in their response to IV administration of Propofol
- B. An important adverse effect is hypotension
- C. It has no analgesic properties
- D. Caution should be taken in patients with known allergies to egg or soya-based products

QUESTION 20

With regard to suxamethonium which of the following is FALSE:

- A. It is contraindicated in a patient with 40% TBSA burns sustained 12-hours prior to presentation
- B. Onset of action IV is 45 to 60 seconds
- C. Duration of action is 5 to 10 minutes in most patients
- D. It may be administered intramuscularly but the dose should be increased

QUESTION 21

Which of the following is the MOST common x-ray finding associated with left heart failure:

- A. Cardiomegaly
- B. Dilated upper lobe vessels
- C. Interstitial oedema
- D. Pleural effusion

QUESTION 22

Which travel-related disease is often acquired overseas despite appropriate pre-travel vaccination:

- A. Hepatitis A
- B. Hepatitis B
- C. Japanese Encephalitis
- D. Typhoid Fever

QUESTION 23

Which factor is MOST likely to predict an adverse outcome in a patient with upper GI bleeding:

- A. A history of cirrhosis
- B. The presence of melena on rectal examination
- C. Coffee-ground vomiting in a nasogastric lavage
- D. An initial systolic blood pressure of less than 100 mmHg

QUESTION 24

A paediatric elbow x-ray reveals ossification centres of the capitulum and radial head.

The child's age is MOST likely to be:

- A. 1-3 years
- B. 4-5 years
- C. 6-7 years
- D. 10-12 years

QUESTION 25

Regarding trauma scoring systems:

- A. The AIS (Abbreviated Injury Scale) classifies injuries into 3 categories – minor, moderate and severe
- B. The Revised Trauma Score divides coma score, blood pressure and respiratory rate into 5 intervals
- C. A Paediatric Trauma Score of 6 or more has a zero mortality
- D. The ISS (Injury Severity Score) is the sum of the AIS in each of the 3 most severely injured body areas

QUESTION 26

Which ONE of the following statements is TRUE:

- A. The commonest cause of aortic stenosis is rheumatic fever
- B. The murmur of HOCM is decreased by squatting and increased with a Valsalva manoeuvre
- C. The murmur of ventricular septal defect (VSD) is decreased with inspiration
- D. In mitral valve prolapse isometric exercise causes the 'click' to be heard earlier in systole

QUESTION 27

Both neuroleptic malignant syndrome and serotonin syndrome:

- A. Are characterised by autonomic instability and neuromuscular abnormalities
- B. Are characterised by hyperreflexia and clonus
- C. Have highly specific tests to confirm the diagnosis
- D. Occur soon after initiating the medication(s) causing the syndrome

QUESTION 28

Which of the following is part of the Wells criteria for pulmonary embolism workup:

- A. Heart rate greater than 90 beats/min
- B. Immobilisation or surgery in the previous 4 weeks
- C. PaO₂ on an Arterial Blood Gas < 60 mmHg
- D. Family history of DVT or PE

QUESTION 29

Which finding on chest x-ray is most specific AND sensitive for traumatic aortic dissection:

- A. A widened mediastinum
- B. Depression of the left main-stem bronchus
- C. Deviation of a nasogastric tube to the right
- D. Apical pleural haematoma (cap)

QUESTION 30

Regarding the Australasian College for Emergency Medicine (ACEM) (soon to be known as 'ANZCEM') guidelines on emergency department design which of the following statements is FALSE:

- A. Paediatric clinical spaces should be as large, if not larger, than those for adults
- B. Ambulatory and ambulance entrances are ideally co-located for consistency of triage
- C. Total number of treatment areas should be standardised based on annual presentations
- D. At least a half of the treatment spaces should have physiological monitoring available

QUESTION 31

Hypernatraemia is MOST commonly associated with:

- A. Hyperglycaemia
- B. Congestive Cardiac Failure
- C. Diabetes Insipidus
- D. Nephrotic Syndrome

QUESTION 32

Which toxicological presentation does NOT commonly cause a significant high anion gap metabolic acidosis (HAGMA):

- A. Iron poisoning
- B. Carbon Monoxide poisoning
- C. Isoniazid poisoning
- D. Ethanol poisoning

QUESTION 33

A runner has been brought to a medical treatment tent at the end of a marathon. He is disoriented, has dry skin and has a rectal temperature of 42°C. Rapid point of care testing reveals normal serum sodium and blood glucose levels. What is the MOST appropriate immediate treatment:

- A. Administer paracetamol
- B. Perform ice water immersion
- C. Place fresh ice packs to the groin and axillae
- D. Transport to an emergency department, where evaporative cooling can be performed

QUESTION 34

Which is NOT a risk factor for subarachnoid haemorrhage:

- A. Neurofibromatosis
- B. 1st degree relative with a history of subarachnoid haemorrhage
- C. Polycystic ovarian syndrome
- D. Hypertension

QUESTION 35

Which is NOT a cause of ptosis with a constricted pupil:

- A. Aneurysmal compression of the 3rd cranial nerve
- B. Carotid aneurysm
- C. Brainstem infarction
- D. Squamous cell carcinoma of the lung

QUESTION 36

Which of the following is the MOST common complication associated with mitral valve prolapse:

- A. Supraventricular tachycardia
- B. QT prolongation
- C. Atrial fibrillation
- D. ST-segment depression in the inferior leads

QUESTION 37

Which one of the following is TRUE regarding to Lumbar Puncture:

- A. The lymphocyte count can reliably differentiate viral and bacterial meningitis
- B. Normal Serum to CSF glucose ratio is 0.6-0.7
- C. Normal values in neonates and older children are the same
- D. IV caffeine has been consistently shown to improve post procedure headache

QUESTION 38

An elderly patient presents with bilateral upper limb paralysis after an unwitnessed accident. What is the MOST likely mechanism of injury:

- A. Axial loading of the cervical spine
- B. Hyperflexion of the cervical spine
- C. Hyperextension of the cervical spine
- D. Lateral flexion of the cervical spine

QUESTION 39

In a patient with thyroid storm, which ONE of the following statements is TRUE:

- A. Hypoglycaemia is common
- B. IV steroids should be given
- C. GIT symptoms are rare
- D. Laboratory tests are likely to make the definitive diagnosis in the ED

QUESTION 40

An 80-year old female requires manual reduction of a Colles' fracture. Which ONE of the following statements is TRUE:

- A. The dose of prilocaine 0.5% for a Bier's block is 4mg/kg
- B. Prilocaine cardiac toxicity commonly results in a ventricular tachycardia
- C. The cuff for a Bier's block should be inflated to a maximum of 50 mmHg above the patient's systolic blood pressure
- D. An inability to co-operate is a contraindication to Bier's block

QUESTION 41

A 72-year-old man presents with acute onset of vertigo, nystagmus, dysphagia and Horner's syndrome. The MOST likely diagnosis is:

- A. Acute labyrinthitis
- B. Cerebellopontine angle tumour
- C. Lateral medullary infarction
- D. Ophthalmoplegic migraine

QUESTION 42

In the diagnosis and treatment of acute appendicitis, which of the following statements is FALSE:

- A. In approximately 15% of patients undergoing exploratory laparotomy for suspected appendicitis, the appendix is normal
- B. A history of anorexia is very helpful in differentiating appendicitis from pelvic inflammatory disease
- C. The inflammatory process of acute appendicitis can cause pyuria or haematuria
- D. Appendicitis is unlikely if a visualised appendix appears normal on formal ultrasound

QUESTION 43

Which of the following patients is MOST likely to benefit from emergency department thoracotomy:

- A. Blunt trauma victims who arrest in the emergency department
- B. A patient with a sucking chest wound
- C. A patient with a penetrating chest wound who arrests in the emergency department
- D. A patient with a bedside ultrasound demonstrating free fluid in the pericardium

QUESTION 44

With respect to testicular pain in a 14-year old, which of the following statements is FALSE:

- A. Torsion of the testicular appendix may occur more often than torsion of the testes
- B. Diagnosis of epididymo-orchitis warrants diagnostic evaluation of the urinary tract
- C. Salvage rates in torsions operated on within 4 hours are approximately 75%
- D. Approximately 10% of patients with a testicular tumour present with acute pain

QUESTION 45

Regarding the sort triage system used in disaster triage:

- A. Uses heart rate, systolic blood pressure and GCS to determine category
- B. Can be used in the field by untrained personnel as it requires no equipment
- C. Can be used to assign Australasian Triage Scale categories (ATS 1-5)
- D. Is based on the parameters used in the Revised Trauma Scale

QUESTION 46

Which of the following statements regarding fat embolism is MOST true:

- A. Heparin is the mainstay of treatment for fat embolism
- B. Petechial rash typically appears on the lower extremities
- C. Systemic arterial circulation is rarely affected
- D. Thrombocytopenia is a common early finding

QUESTION 47

Regarding Personal Protective Equipment (PPE), which statement is MOST accurate:

- A. Level C PPE has skin splash protection and either a gas mask or air purifying respirator
- B. Level D PPE is the usual level of PPE which ED staff are trained to use
- C. Level A PPE is gloves, goggles or splash shield and a fluid resistant gown
- D. Level B PPE has fully enclosed SCBA (self-contained breathing apparatus)

QUESTION 48

For a child with stridor, which of the following best differentiates croup from bacterial tracheitis:

- A. Drooling and fever
- B. Normal chest x-ray
- C. Productive cough
- D. Stridor at rest

QUESTION 49

An asymptomatic 2-year old presents 3 hours after ingesting an unknown quantity of Eucalyptus oil. What is the MOST appropriate management:

- A. Observe for a further 2 hours and discharge
- B. Immediate discharge
- C. Charcoal
- D. Charcoal and gastric lavage

QUESTION 50

Which of the following statements MOST true regarding anorexia nervosa:

- A. Is often accompanied by other DSM IV disorders
- B. Is often accompanied by two or more daily episodes of binge eating
- C. The first episode usually occurs during childhood
- D. Typically does not disrupt the menstrual cycle

QUESTION 51

Zone 1 in the 'Roos and Christensen' classification of neck trauma corresponds to:

- A. Clavicles to cricoid cartilage
- B. Cricoid cartilage to angle of mandible
- C. Angle of mandible to base of skull
- D. Midline to anterior border of sternomastoid muscle

QUESTION 52

Regarding performance appraisals of junior doctors, which one of the following statements is TRUE:

- A. Log Books are useful in assessing the quality of patient care
- B. Effective positive and negative reinforcement is dependent on understanding the employee's values and goals
- C. Appraisals are always best performed by a single senior staff member who is directly responsible for the clinician's work
- D. Poor performance is most commonly due to lack of motivation

QUESTION 53

Regarding local anaesthetics (LA), which statement is FALSE:

- A. Warm or buffered Lignocaine may be less painful to inject
- B. Bupivacaine is more lipid soluble than lignocaine
- C. Prilocaine is metabolised by enzymes in the liver, kidneys and lungs
- D. Phenytoin is effective in terminating seizures induced by local anaesthetics

QUESTION 54

The risk of radiation exposure on the neurologic development during a pregnancy is HIGHEST at:

- A. 2 to 8 weeks post conception
- B. 8 to 15 weeks post conception
- C. 20 to 24 weeks post conception
- D. 24 to 28 weeks post conception

QUESTION 55

Which disease is MOST commonly associated with inflammation of the sacroiliac joints:

- A. Ankylosing spondylitis
- B. Behçet's disease
- C. Inflammatory bowel disease
- D. Psoriatic arthritis

QUESTION 56

In the assessment of a patient with vertigo which of the following is TRUE:

- A. Meniere's disease causes bilateral hearing loss in most patients
- B. Caloric stimulation of 1 ear with cold water should produce nystagmus towards that side
- C. Acoustic neuromas account for less than 20% of cerebellopontine tumours
- D. Bacterial labyrinthitis causing vertigo can be a complication of meningitis

QUESTION 57

Which of the following will cause a RIGHT shift on the oxygen dissociation curve:

- A. Decreased pH
- B. Decreased temperature
- C. Decreased PaCO₂
- D. All of the above will cause a left shift

QUESTION 58

Which of the following conditions is MOST likely to be a precipitating factor for spontaneous pneumothorax:

- A. Chronic obstructive pulmonary disease
- B. Cigarette smoking
- C. Marfan syndrome
- D. Pneumocystis Jirovecii pneumonia

QUESTION 59

Regarding high altitude sickness, which statement is FALSE:

- A. Acute Mountain Sickness symptoms generally develop within 6 hours of reaching altitude
- B. High Altitude Pulmonary Oedema rarely occurs at less than 3000 metres
- C. Cheyne-Stokes respiration can occur during sleep at altitudes above 3000 metres
- D. High Altitude Cerebral Oedema rarely occurs below the altitude of 6000 metres

QUESTION 60

Which of the following statements is FALSE:

- A. 1 litre of Hartmann's solution contains 129 mmols of sodium and 5 mmols of potassium
- B. 10 ml of 10% calcium chloride solution contains approximately 2.2 mmols of calcium
- C. 100 ml of 8.4% sodium bicarbonate solution contains 100 mmols of sodium bicarbonate
- D. 1000 ml of 5% dextrose solution contains 50 grams of dextrose with an osmolality of approximately 280 mosm/L

QUESTION 61

Which statement regarding the anatomic and physiologic changes of advanced pregnancy is FALSE:

- A. Cardiac output increases by 40%
- B. BP falls by 15mmHg in the 3rd trimester
- C. Mean PaCO₂ falls to 32mmHg
- D. Tidal volume increases by around 40%

QUESTION 62

A 28-year old man presents with complete partial-thickness burns to the entirety of both arms. He weighs 80kg. Using the rule of nines method and the Parkland formula, calculate the volume of IV Hartmann's solution that should be administered over the first 8 hours in this patient:

- A. 1,800 mL
- B. 2,700 mL
- C. 3,600 mL
- D. 7,200 mL

QUESTION 63

Which of the following BEST describes a Le-Fort II fracture:

- A. Horizontal maxillary fracture, separating the teeth from the upper face
- B. Mobility of the upper dental arch, nose and zygoma
- C. The uppermost fracture line can pass through the nasofrontal junction or the frontal process of the maxilla
- D. Craniofacial disjunction

QUESTION 64

In regard to hip pain in children, which statement is FALSE:

- A. Approximately 70% of congenital hip dislocations occur in the first baby of the family
- B. The commonest cause of a painful hip in children is transient synovitis
- C. Perthes disease is seen most commonly between the ages 12 months and 4 years
- D. Blood cultures are positive in 60% of cases of septic arthritis

QUESTION 65

A 52-year old smoker presents complaining of generalised fatigue and weakness for the past week. Over the past several weeks she has noticed that her clothes have become loose fitting and that she has lost 10 kilograms of weight. Physical examination is unremarkable. A chest radiograph demonstrates a mediastinal mass. Serum electrolytes include a sodium, 116 mmol/L and bicarbonate of 21 mmol/L. What is the MOST appropriate management option:

- A. Demeclocycline
- B. Fluid Restriction
- C. Hypertonic saline
- D. Intravenous frusemide

QUESTION 66

Which of the following statements regarding ingested foreign bodies is CORRECT:

- A. All children with a suspected foreign body ingestion should undergo x-ray
- B. Meat tenderiser can be used safely to dissolve an impacted meat bolus
- C. The most common site of oesophageal foreign body entrapment in paediatric patients is the thoracic inlet
- D. Objects longer than 5cm and wider than 2cm should be removed before they pass through the stomach

QUESTION 67

A 74-year-old woman presents with right-sided extremity weakness of 4 hours' duration. Vital signs are blood pressure 183/115, pulse rate 100, respiratory rate 16, and temperature 37.2°C. Physical examination reveals slow response to questioning and right sided limb weakness. There is right hemisensory loss. There are no cranial nerve deficits, and left-sided strength and sensation are intact. The MOST likely 'stroke syndrome' is:

- A. Basilar artery occlusion
- B. Carotid artery dissection
- C. Middle cerebral artery infarction
- D. Posterior cerebral artery infarction

QUESTION 68

Which of the following statements regarding von Willebrand disease is CORRECT:

- A. Bleeding time is normal
- B. Characterised by inadequate hepatic production of von Willebrand factor
- C. It is the most common inherited bleeding disorder
- D. Use of desmopressin is ineffective in controlling bleeding

QUESTION 69

A 12 kg infant is 10% dehydrated. An appropriate standard IV fluid replacement rate in mls/hr for rehydration over the first 24 hours is:

- A. 50 mls/hr
- B. 95 mls/hr
- C. 125 mls/hr
- D. 75 mls/hr

QUESTION 70

With respect to acute upper gastrointestinal tract bleeding in adults which statement is TRUE:

- A. Pre-endoscopic IV proton pump inhibitors decrease mortality
- B. The need for blood transfusion is an independent predictor of mortality
- C. IV octreotide decreases the need for blood transfusions
- D. Sengstaken-Blakemore tubes have 4 lumens

QUESTION 71

Which of the following complications is MOST associated with fractures of the first and second rib:

- A. Boerhaave's Syndrome
- B. Brachial plexus injury
- C. Chylothorax
- D. Traumatic aortic rupture

QUESTION 72

Which of the following statements about volvulus is FALSE:

- A. Sigmoid volvulus is more common in inactive elderly patients
- B. Fluid and electrolyte sequestration less of an issue with sigmoid volvulus compared with small bowel obstruction
- C. A massively dilated loop of bowel with both ends down in the pelvis and the bow positioned superiorly ('bent inner tube' appearance) is pathognomonic of a caecal volvulus
- D. The treatment of choice for a non-strangulated sigmoid volvulus is decompression and de-torsion with a rectal tube via proctoscopy

QUESTION 73

Which pharmacologic agent is MOST likely to be associated with Parkinsonism:

- A. Benztropine
- B. Bromocriptine
- C. Bupropion
- D. Butyrophenones

QUESTION 74

A patient presents with painless diplopia. Symptoms disappear when one eye is covered. Extraocular movements are normal when tested individually. On gaze testing to the left, there is nystagmus in the left eye and limited adduction in the right eye. What is the MOST likely cause of diplopia:

- A. Internuclear ophthalmoplegia
- B. Retro-orbital hematoma
- C. Sixth nerve palsy
- D. Third nerve palsy

QUESTION 75

Which of the following statements regarding paediatric knee injuries is CORRECT:

- A. Adolescents with Osgood-Schlatter disease have pain on exercise but not usually at rest
- B. Limping after a fall from a height of more than 1 metre is an indication for knee x-rays
- C. Ottawa Knee Rules should not be used in children
- D. Salter-Harris IV fractures of the distal femoral epiphysis cannot normally be seen on x-ray

QUESTION 76

Which of the following statements is MOST correct regarding posterior wall myocardial infarction:

- A. Associated with ST-segment depression in V1
- B. ECG shows a very large S wave in V1
- C. Occurs in 3-11% of all cases ST elevation myocardial infarction
- D. Results from an occlusion of the left anterior descending artery

QUESTION 77

Regarding heart failure in patients with diastolic dysfunction compared with systolic dysfunction:

- A. Aggressive therapy with diuretics is more effective
- B. β -Blocking agents may improve cardiac output
- C. Both are associated with impaired cardiac contractility
- D. Ventricular filling pressures are higher in systolic dysfunction than in diastolic dysfunction

QUESTION 78

Which of the following is MOST likely to cause a characteristic '*slapped-cheek*' appearance rash:

- A. Coxsackievirus
- B. Group A haemolytic streptococci
- C. Parvovirus B19
- D. Varicella-zoster

QUESTION 79

An 84-year old woman falls hyperextending her neck. The MOST likely neurologic findings would be:

- A. Absent pain and temperature sensations and motor function with normal vibratory function below the level of injury
- B. Ipsilateral motor loss with preserved contralateral pain and temperature sensation
- C. Motor weakness in the upper extremities greater than in the lower extremities
- D. Paralysis with no rectal tone below the level of the injury

QUESTION 80

In children, which of the following is MOST associated with a congenital prolonged QT interval:

- A. Ambiguous genitalia and a webbed neck
- B. Documented family history of sudden death < 30 years of age
- C. Maternal history of recurrent miscarriages
- D. Syncope after initiating antifungal therapy

QUESTION 81

Which of the following statements regarding the femoral head dislocations is CORRECT:

- A. Associated femoral head and acetabular fractures are rare, so pre-reduction x-rays unnecessarily delay reduction
- B. Sciatic nerve injury is rare
- C. Femoral artery disruption can occur in 20% of cases
- D. Prompt relocation reduces the incidence of avascular necrosis

QUESTION 82

In regard to the Ottawa knee rules and indications for ordering an X-ray, which of the following criteria is INCORRECT:

- A. isolated tenderness of the patella
- B. inability to transfer weight for 4 steps immediately after the injury and in ED
- C. inability to flex the knee to 60 degrees
- D. age > 55

QUESTION 83

Which of the following criteria is included in the San Francisco syncope rules:

- A. Haemoglobin < 100g/L
- B. History of congestive cardiac failure
- C. Chest pain
- D. Sudden onset headache

QUESTION 84

Which of the following ossification centres at the wrist is the FIRST to appear:

- A. Hamate
- B. Scaphoid
- C. Lunate
- D. Pisiform

QUESTION 85

Regarding HELLP syndrome which is FALSE:

- A. Abdominal pain is common symptom in HELLP syndrome
- B. Maternal mortality is approximately 1-2 %
- C. May precede hypertension, proteinuria and pre-eclampsia
- D. Rarely develop DIC

QUESTION 86

Regarding non-traumatic aortic dissection which is FALSE:

- A. Commonly secondary to atherosclerosis
- B. 50% begin in ascending aorta
- C. 40% will have unequal pulses
- D. Nasogastric tube deviates to left on the chest x-ray

QUESTION 87

Which of the following is NOT a predictor of outcome in acute pancreatitis:

- A. Calcium < 2 mmol/L
- B. PaO₂ < 60mmHg on an arterial blood gas
- C. Glucose < 10 mmol/L
- D. AST > 250 IU/L

QUESTION 88

Which of the following statements regarding the use of continuous positive airway pressure (CPAP) in pulmonary oedema is CORRECT:

- A. Decreases left ventricular preload and increases left ventricular afterload
- B. Has been widely shown to reduce mortality
- C. Increases the FiO₂ delivered
- D. Reduces the work of breathing

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EMQ QUESTIONS

Please select the best correct letter on the answer sheet provided

THEME: HAND INJURIES

- A. Central slip rupture
- B. Felon
- C. Jersey finger
- D. Mallet finger
- E. Paronychia
- F. Reverse fight bite
- G. Skier's thumb
- H. Subungual haematoma
- I. Volar plate injury

For each question, choose the most likely diagnosis from the list above. Each option may be used once, more than once, or not at all.

QUESTION 89

A 25-year old female presents with a Boutonnière deformity of her middle finger. She sustained a PIP joint dislocation to the same finger several weeks ago.

QUESTION 90

A 23-year old rugby player presents following a collision on the pitch with an injury to his ring finger. He felt a pop and is now unable to flex the DIP joint. Flexion at the PIP joint is preserved.

QUESTION 91

An 18-year old male presents to ED with painful swelling overlying the dorsum of the medial two MCP joints. There is associated lymphangitis of the forearm.

THEME: NEUROLOGY

- A. Thalamus
- B. Medulla
- C. Spinal cord
- D. Intrinsic spinal cord lesion near its centre (e.g. syringomyelia)
- E. Posterior column lesion
- F. Posterior root lesion
- G. Partial unilateral spinal cord lesion
- H. Intrinsic cord compression

For each pattern of sensory deficit below the select the most likely location of the lesion.

Each option may be used once, more than once, or not at all.

QUESTION 92

Bilateral loss of all sensation below a definite level

QUESTION 93

Total unilateral loss of all forms of sensation

QUESTION 94

Loss of pain and temperature over several segments but normal sensation above and below

QUESTION 95

Pain and temperature loss of one side of the face and opposite side of the body

THEME: THYROID DISEASE

- A. Toxic Multinodular Goitre
- B. Hypothyroidism secondary to amiodarone therapy
- C. Hashimoto's Thyroiditis
- D. Thyroid Storm
- E. Grave's Disease
- F. Sick Euthyroid Syndrome
- G. Thyroid Carcinoma
- H. Hypothyroidism secondary to lithium therapy
- I. De Quervain's Thyroiditis
- J. Hypopituitarism

*For each presentation, choose the single most likely DIAGNOSIS from the given list of options.
Each option may be used once, more than once, or not at all.*

QUESTION 96

A 26-year old woman presents with a history of fever and neck pain. On examination, she has a painful goitre affecting both lobes of the thyroid gland. Blood tests show a raised T4, a low TSH and elevated inflammatory markers.

QUESTION 97

A 47-year old woman presents with a 4-month history of weight loss and fever. She reports diarrhoea and nausea. She describes gritty sensation in the eyes and occasional double vision. The TFTs are pending.

QUESTION 98

A 43-year old man with a long history of depression requiring hospital admission presents with weight gain, lethargy and mild ataxia. Blood results show a low T4, and raised TSH.

QUESTION 99

A 49-year old woman presents to ED complaining of neck swelling. On examination, she has a symmetrical goitre. Blood results show a low T4, raised TSH level and high titre of anti-thyroid peroxidase antibodies

QUESTION 100

A 39-year old man who has presented with an on-going severe chest infection is shown to have low T4 and TSH levels on 'routine' bloods.

THEME: TOXICOLOGY

A. Atropine	J. Intralipid
B. Calcium gluconate 10%	K. Methylene blue
C. Calcium chloride 10%	L. Octreotide
D. Digibind	M. Oxygen
E. Flumazenil	N. Prothrombinex
F. Fomepizole	O. Sodium bicarbonate
G. Hydroxocobalamin	P. Supportive care
H. Idarucizumab	Q. Vitamin K
I. Insulin	R. Vitamin C

*For each clinical scenario, select the most appropriate treatment.
Each option may be used once, more than once, or not at all.*

QUESTION 101

A 65-year old male on dabigatran for atrial fibrillation presents to ED with massive haematemesis

QUESTION 102

An 85-year old female presents with general weakness following several days of vomiting. Bloods show a significantly elevated creatinine of 300 $\mu\text{mol/L}$ with serum potassium of 5.9. ECG shows an irregular rhythm with a ventricular rate 35 bpm

QUESTION 103

A 55-year male with a history of depression and anxiety presents with drowsiness and respiratory depression following an overdose of alprazolam and venlafaxine

QUESTION 104

A 21-year old male presents with acute respiratory distress and cyanosis after ingesting a bottle of isobutyl nitrite ("poppers"). SaO₂ are 85% on 15L O₂

QUESTION 105

A 50-year old female presents unconscious after being rescued from a massive house fire. ABG shows a COHb of 8% with lactate of 18 mmol/L

THEME: OPHTHALMOLOGY

- A. Acute angle closure glaucoma
- B. Amaurosis fugax
- C. Central retinal artery occlusion
- D. Central retinal vein occlusion
- E. Giant cell arteritis
- F. Optic neuritis
- G. Retinal detachment
- H. Vitreous haemorrhage

For each question, identify the most likely cause of visual loss from the list above.

Each option may be used once, more than once, or not at all.

QUESTION 106

A 70-year old male presents with sudden painless loss of vision. Fundoscopy reveals a pale retina with a cherry red spot

QUESTION 107

A 52-year old diabetic female presents with sudden painless loss of vision. Fundoscopy reveals a "blood and thunder" appearance with dilated tortuous vessels and retinal haemorrhages

QUESTION 108

A 56-year old male presents with severe unilateral ocular pain, vomiting and bradycardia. Ocular examination reveals a hazy cornea, fixed mid-dilated pupil and perilimbal flush

QUESTION 109

A 40-year old female presents with gradually deteriorating visual acuity in one eye, accompanied by decreased colour vision and pain on eye movement. She has a previous history of "Bell's Palsy"

THEME: FOREARM INJURIES

A 20-year old male presents with multiple deep lacerations to his right upper limb after punching his hand through a plate glass window.

- A. Biceps tendon
- B. Brachial artery
- C. Extensor digitorum
- D. Extensor pollicis longus
- E. Flexor digitorum profundus
- F. Flexor digitorum superficialis
- G. Lateral cutaneous nerve of forearm
- H. Median nerve
- I. Radial artery
- J. Radial nerve
- K. Ulnar artery
- L. Ulnar nerve

*For each injury pattern, match the deficit to the likely structure injured.
Each option may be used once, more than once, or not at all.*

QUESTION 110

Sensory loss to the volar aspect of the index and middle fingers with weakness of thumb opposition.

QUESTION 111

Complete wrist drop with inability to extend the wrist, fingers or thumb.

QUESTION 112

Inability to abduct or adduct the fingers.

QUESTION 113

Large haematoma overlying the anteromedial aspect of the wrist.

QUESTION 114

Weakness of PIP joint flexion of ring and middle fingers.

Flexion of these digits against resistance causes significant anterior forearm pain.

THEME: ANAEMIA

- A. ABO incompatibility
- B. Acute leukaemia
- C. Anaemia of chronic disease
- D. Aplastic anaemia
- E. Fanconi anaemia
- F. Iron deficiency anaemia
- G. Red cell enzyme defect
- H. Red cell membrane defect
- I. Rhesus disease

*For each scenario chose the most likely diagnosis. Normal values are shown in brackets.
Each option may be used once, more than once, or not at all.*

QUESTION 115

A 5-year old girl with previously diagnosed Still's disease is referred by her GP for ED review. The mother has noted that the child is pale and tired.

Hb 85g/L (110-130)
WCC $7.9 \times 10^9/L$ (5-17)
Plt $434 \times 10^9/L$ (150-450)
MCV 81 (75-87)
Reticulocytes 1.1% (<2%)

QUESTION 116

A 6-year old girl is brought in by her concerned parents with pallor and bruising. There are no red flags for non-accidental injury.

Hb 73 g/L (110-130)
WCC $2.3 \times 10^9/L$ (5-17)
Plt 84 (150-450)
Blood film No blasts seen
Reticulocytes 0.4% (<2%)

THEME: CARDIAC MURMURS

A. Hypertrophic obstructive cardiomyopathy

B. Mitral regurgitation

C. Aortic stenosis

D. Patent Ductus Arteriosus

E. Tricuspid regurgitation

F. Pulmonary stenosis

G. Mitral stenosis

H. Pulmonary hypertension

*For each description pick the appropriate underlying condition.
Each option may be used once, more than once, or not at all.*

QUESTION 117

More pronounced with Valsalva manoeuvre

QUESTION 118

More pronounced with deep inspiration

QUESTION 119

More pronounced with a forceful hand grip manoeuvre

QUESTION 120

Most associated with the presence of large 'a' waves on examination of the JVP

END OF EXAM PAPER