

MCEM Part A Exam Jan 4th 2006-03-30

- 1.) Shoulder anatomy;
 - a. The Musculocutaneous nerve supplies all the forearm flexors
 - b. Brachialis attaches to the ulnar coronoid (?)
 - c. Biceps flexes the shoulder
- 2.) The rotator cuff
 - a. Comprises supraspinatus, infraspinatus, teres major and subscapularis
 - b. Are all shoulder rotators
 - c. Injuries give painful arc syndrome on passive abduction
 - d. Muscles are supplied by the suprascapular nerve.
- 3.) The Haemoglobin / Oxygen / Carbon dioxide dissociation curve:
 - a. Moves to the left with a fall in pH
 - b. Moves to the right with a raised pCO₂
 - c. The myoglobin dissociation curve is to the left of the O₂ curve
 - d. A left shift gives a higher SpO₂ at a lower partial pressure of O₂.
- 4.) In a normal (Gaussian) distribution;
 - a. 95% lie within +/- 2 standard deviations
 - b. It is a frequency plot
 - c. The median equals the mode
 - d. It can be skewed left or right.
- 5.) Here's a table; (they gave you the numbers as 'study findings')

	Angiography	
	+ve	-ve
D-dimer >0.5	78	20
D-dimer <0.5	2	?

- a. Positive predictive value = $78/78 + 2$
 - b. A sensitivity >85% in this case shows a sensitive test (i.e. this test is valid)
 - c. Negative Predictive Value is the proportion of negative tests that are truly negative
 - d. Positive Predictive Value in a validated test changes with the population.
- 6.) Warfarin;
 - a. INR should be 3-4 for treatment of DVT
 - b. Overdose can be treated with oral vitamin K
 - c. The extrinsic clotting pathway is affected
 - d. The INR goes up when thyroxine is co-administered.
 - 7.) The following drugs undergo significant first pass metabolism;
 - a. GTN
 - b. Aspirin

- c. Lignocaine
- d. Amitriptyline

8.) The following can be seen in an Addisonian crisis;

- a. Hypercalcaemia
- b. Hypokalaemia
- c. High neutrophils
- d. Raised blood glucose

9.) In sickle cell disease;

- a. Bone necrosis is a recognised complication of acute occlusive crisis.
- b. Something bizarre about alpha chain mutations?
- c. HbS has reduced O₂ carrying capacity.

10.) Regarding ABO blood grouping;

- a. The majority of caucasian men are rhesus negative.
- b. You can transfuse an AB-ve male with O+ve blood safely.
- c. Something about anti-D
- d. Something about Anti A / Anti B being 'natural' or not... it confused me at the time and now I can't really remember the question.

11.) Malaria;

- a. Causes a constant raised temperature
- b. Vivax causes cerebral malaria
- c. Is carried by the male mosquito
- d. Diagnosis is normally confirmed with ELISA testing.

12.) TB

- a. Is usually primarily acquired through droplet spread
- b. 90% will get post primary symptoms
- c. Miliary means blood infection
- d. Cavities at the bottom of the lung fields.

13.) Regarding intravenous solutions;

- a. 5% dextrose 1000ml contains 5g of dextrose
- b. 1 litre of 8.4% sodium bicarbonate contains 1000mg of Na⁺
- c. Normal saline 1 litre contains 130mg of Na⁺
- d. Hartmann's 1litre contains 2 mmols of Ca⁺⁺

14.) CSF Rhinorrhea

- a. Usually stops by itself
- b. The halo test is not clinically useful
- c. A specific CSF test is B2 antitrypsin
- d. The best test is to compare CSF glucose with blood glucose

15.) The right phrenic nerve

- a. Goes anterior to the right lung root
- b. C3, C4, and C5 nerve roots become it.

- c. Is purely motor
 - d. The recurrent laryngeal nerve is a branch.
- 16.) Hepatitis B
- a. Is transmitted by the faeco-oral route
 - b. 5-10% become chronic carriers
- 17.) Gonorrhea
- a. In males is usually asymptomatic
 - b. Is a common cause of intermenstrual bleeding
 - c. Can be treated with 1 dose of ciprofloxacin
 - d. Is a gram –ve diplococcus
- 18.) Tetanus Clostridium
- a. Has an incubation time of less than 7 days normally.
 - b. Has to be in a deep wound to cause disease
 - c. Is an obligate anaerobe
- 19.) The following are notifiable diseases:
- a. Measles
 - b. Hepatitis A
 - c. Lyme disease
 - d. Ersypilas (?dodgy spelling)
- 20.) Troponin
- a. Is sensitive up to 6 hours post onset of chest pain
 - b. Is a differentiator of future risk in crescendo angina
 - c. Can be used to look for re-infarct in chest pain reoccurring 2 weeks after confirmed myocardial infarct.
- 21.) Knee anatomy
- a. The medial meniscus posterior horn lies posterior to the lateral one.
 - b. The lateral ligament has deep and superficial attachments
 - c. Has approximately 35mls of synovial fluid within the capsule
 - d. The anterior cruciate passes through the capsule (?)
- 22.) The lumbar plexus;
- a. Is made up from L1, 2, 3, and 4 roots
 - b. Gives off branches to the sacral plexus
 - c. Gives off the inguinal and hypogastric sensory branches
 - d. Supplies the hip flexors and knee extensors.
- 23.) Surface anatomy:
- a. The lowest part of the scapula correlates with T7
 - b. The superior iliac line corresponds with L2-L3
 - c. The manubrio-sternal joint correlates with T4-T5
- 24.) Regarding Lung function;
- a. The FEV1:FVC ratio is normal at 50%

- b. Spirometry is more accurate than an ABG in identifying respiratory muscle weakness
 - c. The SpO2 probe is a good monitor of ventilation
- 25.) COPD ... can't remember the stems at all.
- 26.) In normal pregnancy;
 - a. The minute volume decreases
 - b. The heart rate decreases
 - c. Lactate increases
 - d. Packed red cell volume increases
- 27.) A male with status epilepticus on phenytoin normally, so far treated with lorazepam and still fitting;
 - a. The next step is phenytoin loading
 - b. Paraldehyde is contraindicated
 - c. Phenytoin dose – response is linear
- 28.) A male you've just diagnosed with gout on warfarin (for cardiac valve prosthesis) and amlodipine and perindopril for hypertension.
 - a. Needs prophylactic antibiotics
 - b. Drugs he's on could be responsible for the gout
 - c. Starting allopurinol early will help prevent relaps
- 29.) In oedema;
 - a. A ??? is a severe localised oedema (??? =some unheard of word)
 - b. Inflammatory oedema is a transudate
 - c. In renal failure is caused by reduced oncotic pressure intravascularly
 - d. In heart failure, reduced rennin causes sodium and water retention.
- 30.) headache
 - a. that responds to oxygen therapy is likely to be a cluster headache
 - b. can't remember the other stems
- 31.) Features of acromegaly include;
 - a. Prognathia
 - b. Impaired glucose tolerance
 - c. Homonymous hemianopia
 - d. ?
- 32.) ECG intervals;
 - a. The QT interval is the beginning of Q to the beginning of T
 - b. And some more we can't remember
- 33.) Regarding eye motor innervation / muscles
 - a. & b. Something about the 4th nerve and the 6th nerve supplying lateral recti... questions were trying to confuse.

- b. Carotid dissection causes a big ipsilateral pupil
 - c. Posterior communicating artery aneurysm causes an ipsilateral blown pupil.
- 34.) In thoracic aneurysm
 - a. Gives more anterior ST elevation than inferior ST elevation
 - b. Keep systolic blood pressure at 100 – 140mmHg
 - c. ??
 - d. ??
- 35.) In overdose of antidepressants;
 - a. Tricyclics are worse than SSRI's
 - b. Tricyclics cause metabolic alkalosis
 - c. Give atropine to reverse the anticholinergic effects
- 36.) A deep laceration to the thenar eminence
 - a. Can transect the radial artery
 - b. Can transect the recurrent superficial branch of the median nerve
 - c. Can transect the tendons of flexor pollicis longus
 - d. Can transect the belly of flexor pollicis superficialis
- 37.) Regarding pain sensation;
 - a. Afferent sensation travels in the spinothalamic tracts.
 - b. C-fibres give good localisation of pain
 - c. Temperature more than 45 degrees C is recorded as pain.
 - d. Enters the spinothalamic tract in the ventral horn.
- 38.) Diabetes drugs;
 - a. Metformin causes increased insulin release
 - b. Sulphonylureas cause lactic acidosis
 - c. Hypo's in those taking sulphonylureas should be admitted.
 - d. In Myocardial infarct, diabetics should go onto insulin for a while.
- 39.) Airways;
 - a. The left main bronchus is more vertical than the right.
 - b. Something about small airways being more reactive in asthma
 - c. The left main bronchus branches outside of the hilum
 - d. The manubriosternal joint is at the level of the carina.
- 40.) COPD causes
 - a. Increased ciliary activity
 - b. Reduced total lung capacity
 - c. Other stuff about the respiratory volume curves
- 41.) Cerebral autoregulation;
 - a. Raised pCO₂ causes vasodilation
 - b. 24mls/100g is the approximate blood flow / minute
- 42.) In severe acute haemorrhage;

- a. Brain and heart circulation is maintained at the expense of the kidney and liver
- 43.) Massive blood transfusion causes;
- a. Acidosis
 - b. Hyperkalaemia
 - c. Hypocalcaemia
 - d. Doesn't upset clotting if given through a filter.
- 44.) Cocaine abuse;
- a. Blocks Noradrenaline reuptake peripherally
 - b. Causes thrombotic MI
 - c. Chronically, gives dilated cardiomyopathy.
- 45.) Diarrhoea and vomiting;
- a. Rotavirus is airborne
 - b. Rotavirus causes diarrhoea with abdominal pain
 - c. Norwalk virus causes institutional diarrhoea
 - d. Handwashing limits spread of infection (yes, that really was a question!)