

# **2011-2018**

## **Year 3 ICE MCQ Memorandum**

## **ANSWERS**

Discussion about the correct answer can be found [here](#).

*Most answers from 2013 onwards as correct as discussed in the above document*

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## 2011 Memorandum

- 1. Which of the following regarding infectious mononucleosis is true?**
  - a. Infectious mononucleosis can be treated with ampicillin
  - b. Infectious mononucleosis is most common in pre-school children
  - c. Infectious mononucleosis can be transmitted via faecal-oral route
  - d. Infectious mononucleosis can be diagnosed via heterophile antibodies
  - e. Infectious mononucleosis presents with a rash
- 2. Which of the following is MOST CORRECT about Gentamicin?**
  - a. Associated with ototoxicity
  - b. Covers Enterococcus
  - c. First line therapy in acute cystitis
  - d. Drug of choice in renal impairment
  - e. Targets cell wall synthesis
- 3. Histopathology: identify a lesion in a colon microscopy slide**
  - a. Metaplasia
  - b. Hyperplasia
  - c. Neoplasm with glandular differentiation
  - d. Neoplasm with squamous differentiation
  - e. Neoplasm with mesenchymal differentiation
- 4. 55-year-old man presented to hospital with cough, producing yellow-white sputum, and dyspnoea. He has smoked for over 30 years (around 20 cigarettes/day). These symptoms have been present for "many months and years" and are getting worse. Which of the following is the most likely cause?**
  - a. Bronchospasm associated with eosinophilic infiltration of bronchus
  - b. Goblet cell hyperplasia with mucus plugging of bronchi
  - c. Chronic inflammation of bronchi with mucus gland hypertrophy
  - d. Peribronchiolar inflammation and fibrosis
  - e. Progressive centriacinar destruction of alveolar wall.
- 5. 1-year-old baby presents with rhinorrhoea, fever, and later has episodes of paroxysmal coughing. You suspect Bordetella Pertussis. What is most appropriate course of action?**
  - a. Nasopharyngeal swab for PCR, plus IgA serology
  - b. Nasopharyngeal swab for culture, throat swab for PCR, blood cultures, and IgG serology
  - c. Bloods for Acute and convalescent serology for IgA and IgG
  - d. The other options were random combinations of the above

**6. What is the LEAST CORRECT about rheumatic fever?**

- a. It's a complication of Strep pyogenes infection
- b. It may be an indication for long-term penicillin therapy
- c. It is more prevalent in the developing world
- d. It can be prevented by vaccines**
- e. It may cause polyarthritis

**7. Female patient acquired vivax malaria from India, treated with chloroquine. She recovered and did not leave Australia thereafter. Months later she started having symptoms of malaria again, which were confirmed vivax malaria again. What is the MOST CONSISTENT explanation for this presentation?**

- a. First presentation was due to chloroquine resistant vivax
- b. Re-infection from someone else who's been to India recently
- c. Relapse due to activation of vivax hypnozoites**

**8. What does diabetic nephropathy do to the glomerular basement membrane**

- a. Antibody developed
- b. Non-enzymatic glycosylation of the membrane**
- c. Thinning of the membrane
- d. Decreased permeability for the GBM

**9. A 20-year-old man presents with purulent penile discharge and dysuria for 4 days. He has a regular partner of 2 months but they have only used protection in the beginning of their relationship. What is the MOST LIKELY causative agent?**

- a. HIV or Hepatitis C
- b. HSV-2 or Chlamydia
- c. Syphilis or Candida
- d. Gonorrhoea or Candida
- e. Gonorrhoea or Chlamydia**

**10. CT scan at the level of the splenic artery (so roughly T10-T11 I guess?). Backstory about a guy who presented to ED with epigastric pain (but unimportant as the CT was normal).**

- a. Splenic artery (tortuous thing running from spleen medially)
- b. Abdominal aorta and body of pancreas (forget which one was which)
- c. IVC

**11. Regarding Quality Use of Medicines policy, which of the following is most true?**

- a. The consumer is central to decisions
- b. Community pharmacy input is more reliable than that of the pharmaceutical industry
- c. MIMs is the best source of data for the practice of quality use of medicines
- d. The main purpose of the National Prescribing System is to provide savings through the Pharmaceutical Benefits Scheme (PBS)
- e. E. Herbal medicines are not covered

**12. A 40 year old man presents with a left upper quadrant pain. On palpation there was a palpable mass - what is the most reliable sign that this mass is from a kidney and not a splenomegaly?**

- a. Resonant on percussion
- b. Moves on inspiration
- c. Palpable on bimanual palpation
- d. Size of the mass
- e. The superior border can be felt

**13. Bupropion is used for management in cessation of what drugs?**

- a. Alcohol
- b. Nicotine
- c. Cocaine
- d. Heroin
- e. Marijuana

**14. Lady presents with painful joints, what would be the feature most typical of rheumatoid arthritis?**

- a. History of women in her family with arthritis
- b. Pain worse on movement
- c. Nodes in her DIP joints
- d. Symmetrical polyarthritis affecting MCPs and PIPs

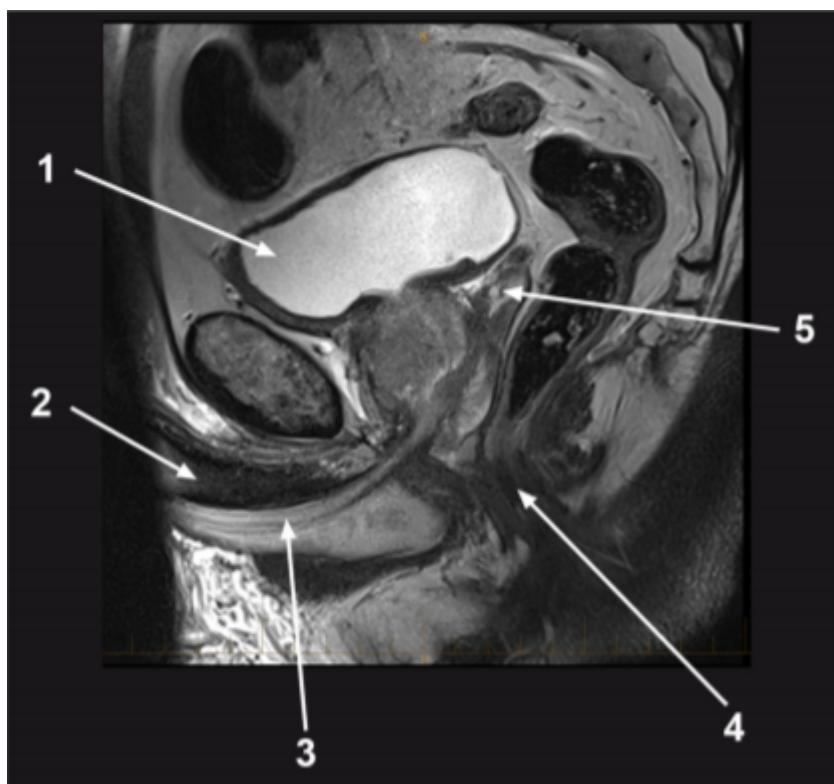
**15. Guy with plasmodium vivax after travel is treated with Chloroquine and the symptoms resolve but he does not present for follow up. Four months later, the symptoms return. Why does this occur?**

- a. Chloroquine wasn't effective
- b. Reinfestation from local mosquito
- c. Survival in hepatocytes
- d. Survival in splenic macrophages
- e. Survival in RBCs

**16. Abdominal CT at the level unknown (but all liver, spleen etc was visible). This was a normal CT. Features to identify were:**

- a. Pancreas Body
- b. IVC
- c. Aorta
- d. Splenic Artery roughly

**17. Below is a sagittal MRI of the male pelvis, which shows a malignancy in the peripheral zone of the prostate gland. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.**



- a. Anal canal
- b. Seminal vesicle
- c. Corpus spongiosum
- d. Bladder
- e. Spongy urethra

**Answer: 1. Bladder, 2. Corpus spongiosum, 3. Spongy urethra, 4. Anal canal, 5. Seminal vesicle**

**18. 57-year-old man presented with progressive weakness and numbness of the distal part of his lower limbs. On examination, there was decreased sensation (light touch and vibration) and weakness in dorsiflexion of his feet. Which of the following is the most likely cause of his symptoms?**

- a. Multiple sclerosis

- b. Motor neurone disease
- c. Lumbar spondylosis with multiple nerve compression
- d. Spinal cord compression
- e. Peripheral neuropathy

**19. Which of the following would give a diagnosis of colorectal cancer?**

- a. Endoscopy
- b. Biopsy of a lesion using colonoscopy
- c. Positive haem occult test
- d. Raised serum tumour marker, carcinoembryonic antigen (CEA)
- e. Stool sample cytology

**20. What is true about the jugulodigastric lymph node?**

- a. It is one of the superficial cervical lymph nodes
- b. It is enlarged and painful in ipsilateral tonsillitis
- c. It is located anterior to the upper part of the external jugular vein
- d. It is located on the thyrohyoid membrane
- e. On CT you can see it on the mastoid process at the attachment of the digastric muscle

**21. An obese woman is referred to HIIT exercise for 3 months. Which of the following is mostly likely to occur?**

- a. Her leg muscle mass increased
- b. There was no change in anaerobic capacity after 3 months
- c. Significant increase in insulin activity at 3 months
- d. Decreased fat loss compared to regular bike exercise
- e. No change in maximum oxygen uptake

**22. Approximately 30 hours after attending a local function a female patient had abdominal cramps, low grade fever and diarrhoea. After 24 hours she recovered and went to work, where she found other people who also went to the function, had BBQ chicken and developed similar symptoms. What is the most likely causative agent?**

- a. Clostridium perfringens
- b. Staph aureus
- c. Campylobacter jejuni
- d. Salmonella typhi
- e. Shigella

**23. Kid with neck stiffness and non-blanching rash. What is the most likely finding on a gram stain?**

- a. Gram +ve rods
- b. Gram -ve diplococci (this is what meningococcus/Neisseria meningitidis is)
- c. Gram +ve cocci in chains
- d. Gram something else or rather
- e. Gram -ve rods

**24. Palliative elderly Russian speaking man. Translator only through phone. He is in discomfort, you suspect pain management not adequate and that he may have an existential problem (life and death). The family does not wish the patient to know about his terminal state. What is the best course of action?**

- a. Convince the family to let you tell the patient.
- b. Seek assistance from a chaplain who is knowledgeable about this.
- c. Use sign language
- d. Use a Russian speaking janitor when the family leaves.
- e. Concentrate on pain management

**25. In isovolumetric contraction, the mitral valves are \_\_\_\_\_ and the aortic valves are \_\_\_\_\_:**

- a. Closed and closed
- b. Closed and open
- c. Open and closed
- d. Both half open

**26. CT angiogram question. It was a normal scan and features listed included:**

- a. Horizontal fissure
- b. Oblique fissure
- c. Upper lobe
- d. Middle lobe
- e. Lower lobe
- f. Pulmonary artery
- g. Right atrium

**27. 56-year-old woman with a past history of mitral valve regurgitation presents with palpitations and dyspnoea. O/E had irregular pulse and signs of congestive heart failure. ECG confirmed atrial fibrillation. she would have all the following signs EXCEPT:**

- a. Rumbling pansystolic murmur best heard at the apex
- b. Split 2nd heart sound on inspiration
- c. 3rd heart sound
- d. 4th heart sound
- e. Soft S2

- 28. A 50-ish year old woman has been transferred to hospital from a nursing home. She has T2DM, osteoarthritis, hypertension (and something else). What is the best way to get accurate information about her prescription medications?**
- a. Ask the GP to get it via Electronic Prescribing System
  - b. Webster Pack
  - c. Ask her son
  - d. Call the local pharmacy
  - e. Letter from the duty nurse from the nursing home

- 29. You are a GP and a couple come in looking for a referral to a termination clinic. They have 3 healthy boys and the woman is currently pregnant with another boy. They want a girl. The most appropriate course of action is:**
- a. Tell them that gender selection is an illegal reason for termination in Australia but refer them to a gynaecologist.
  - b. Tell them they have the right to choose, but you will not be part of it and they should see someone else
  - c. Give with an information pamphlet "Right to Life" and tell them to think about their decision
  - d. Tell them to use IVF

- 30. All of the following are present in giardia EXCEPT?**
- a. Nausea
  - b. Fever
  - c. Flatulence
  - d. Watery Diarrhoea
  - e. Bloating
- 31. 25-year-old male sustained a stable ankle fracture of the right foot. A full plaster cast was applied from below the knee to the toes. The next day he complained of increased pain in his foot accompanied by pallor and numbness. The process most likely to explain his symptoms is**
- a. Displacement of the fractured ankle
  - b. Nerve compression
  - c. Osteomyelitis
  - d. Ischaemia

- 32. Regarding the mechanism of quinolones (e.g. norfloxacin), which is most correct?**
- a. Inhibits PBPs, preventing cross-linking of peptidoglycans.
  - b. Inhibit 30s subunit of ribosomes
  - c. Inhibits DNA gyrase and topoisomerase IV
  - d. PABA analogue preventing folic acid synthesis
  - e. Inhibits 50s subunit of ribosomes

**33. Path pot showing pancreatic cancer with inferior view of liver and dilated gallbladder**

- a. Lesion is likely to be benign
- b. Lesion is likely to arise from small intestine mucosa
- c. Lesion is associated with mutation of H-RAS.
- d. Lesion is associated with migratory thrombophlebitis**
- e. Lesion is unlikely to cause jaundice

**34. Diabetic patient has a chronic ulcer on the 1st metatarsophalangeal joint. What of the following is the likely cause?**

- a. Microvascular disease**
- b. Macrovascular disease
- c. Peripheral neuropathy
- d. Arthropathy
- e. Osteomyelitis

**35. Acute Respiratory Distress Syndrome does NOT cause which of the following?**

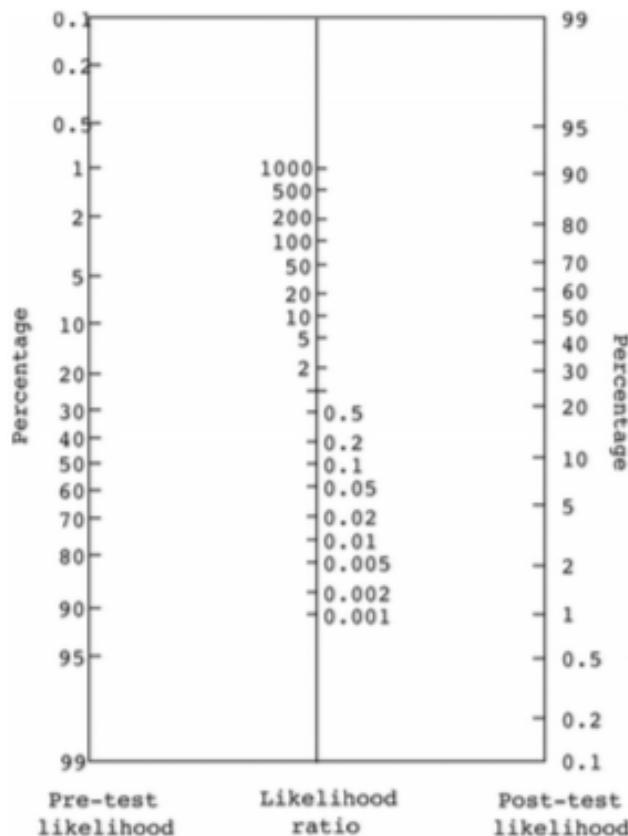
- a. Hyaline membrane formation
- b. Airway obstruction**
- c. Atelectasis
- d. Injury and destruction of the alveolar epithelium

**36. Man with T2D and controlled hypertension, currently on metformin, gliclazide, chlorthalidone, nifedipine, ramipril. He starts taking meloxicam 15mg for knee pain. What's a possible complication?**

- a. Ankle oedema
- b. Bronchospasm
- c. Cardiac failure**
- d. Hypoglycaemia
- e. Hypotension

## 2012 Memorandum

- 1. What is the best description of the pathological and clinical manifestations of colorectal cancer?**
  - a. Left sided colon cancers usually present with anaemia
  - b. Rectal carcinoma most commonly presents with frank blood in the stool
  - c. Carcinomas of the transverse colon commonly cause bowel obstruction
  - d. Right sided cancers usually present with mucous diarrhea
  - e. Most rectal/sigmoidal cancers have metastasized to the liver at time of presentation
- 2. Regarding a normograph. A child came in with a few symptoms including a wheeze. Also has a fever. You do a chest xray to look for lobar pneumonia. For a wheeze, pre-test probability that it is not pneumonia is 95%, if there is a fever there is 5 times greater likelihood of pneumonia finding on chest xray. Use the normograph, what is the post test probability?**



- a. 3
- b. 21
- c. 35
- d. 80
- e. 99

**3. A 60 year old man with left hypogastrium pain. Axial CT abdomen images. Label 5 structures.**

- a. Psoas major
- b. Quadratus lumborum
- c. Sigmoid colon
- d. Ileum
- e. Caecum
- f. Jejunum
- g. Ischial tuberosity
- h. Ileum
- i. Appendix

**4. A 15 year old patient presents with splenomegaly, cough, sore throat etc. What is the causative organism?**

- a. Brucella
- b. EBV
- c. Strep pyogenes
- d. Toxoplasmosis
- e. CMV

**5. Elderly man comes in with a stroke and severe comorbidities. Barely able to respond. You're the RMO and have been asked to get a DNR order from his family. You've been unable to, as the relatives usually come in after hours. It's now a Friday afternoon and they want you to write a DNR order to be put into his file just in case the needs arises during the weekend. What would you do?**

- a. Try to discuss with the family by calling them, failing which you note it in the file
- b. Write the order
- c. Discuss with the patient and write the order
- d. Acknowledge that you won't be able to write the order and that you would try to avoid having to leave such issues to a Friday afternoon in the near future

**6. Which of the following best indicates inflammatory arthritis**

- a. Psoriasis over the joint
- b. Crepitus
- c. Boggy soft tissue swelling
- d. Arthralgia
- e. Muscle wasting

**7. What causes the appendix to be susceptible to gangrene?**

- a. Appendicular vein is obstructed in its drainage to IVC
- b. It is supplied by lumbar arteries via its attachment to posterior abdominal wall
- c. Mesoappendix is prone to kinking
- d. Appendicular artery is prone to atherosclerosis
- e. Appendicular artery is an end artery

**8. Relating to alcohol screening in a primary care setting, when would you ask for frequency and quantity of alcohol intake?**

- a. Everyone above the age of 15
- b. Family history of alcohol dependance
- c. History of substance abuse
- d. Physical condition which is exacerbated by alcohol (eg. pancreatitis)
- e. Abnormal LFTs

**9. With regards to cancer, what happens with regular exercise?**

- a. Slight increase in incidence of breast cancer
- b. Decrease in colon cancer
- c. Slight increase in endometrial cancer
- d. Decrease in stomach cancer
- e. Decrease in prostate cancer

**10. What is likely to be the first detectable clinical sign of haemodynamic compromise following haemorrhage?**

- a. Tachycardia
- b. Decreased pulse pressure
- c. Decreased urine output
- d. Decreased central venous pressure
- e. Hypotension

**11. Adhesions involved with gallbladder inflammation. Which is correct:**

- a. Cystic duct is inferior
- b. 3rd part of the duodenum is (?)
- c. 1st part of the duodenum is (?)
- d. Transverse colon is anterior
- e. Porta hepatis is posterior

**12. Corticosteroids are beneficial in the treatment of COPD for all the following reasons EXCEPT:**

- a. They can reduce severity of exacerbations
- b. They may reduce bronchial hyperreactivity
- c. They can result in a significant increase in FEV1
- d. They have anti-inflammatory effects
- e. They can relax bronchial smooth muscle

**13. Mother brought her 5 year old daughter in to ED because of a moderate to severe asthmatic attack. Nurse discovers that the child has not received her post-12 month vaccinations. The mother explains that with the current public vaccination schedule, she sees no point in vaccinating her daughter as the chance of her contracting something is so low. What do you do?**

- a. Vaccinate the daughter before she leaves
- b. Discuss the value of vaccinations with the mother
- c. Tell the mother that you are obligated to inform the school
- d. Do nothing
- e. Take mother next door to show her a child with varicella myocarditis

**14. Gentamicin:**

- a. Acts upon bacterial cell wall
- b. Is effective against staph
- c. Is effective against strep
- d. Is absolutely contraindicated in vestibular toxicity
- e. Makes old people blind

**15. With regards to visual physiology**

- a. M ganglion cells are responsible for colour vision
- b. P ganglion cells have poor visual acuity
- c. M cells can direct attention of P cells
- d. M cells go to temporal pathway

**16. A 30 year old male presents with shortness of breath, productive cough and lethargy. CXR reveals consolidation in the right lower lobe. Which of the most following is likely to be found on examination?**

- a. Increased vocal resonance
- b. Normal percussion note
- c. Decreased chest expansion on the left
- d. Tracheal deviation to the right

**17. Gram positive meningitis. What empirical antibiotics would you prescribe?**

- a. Gentamicin + vancomycin
- b. Gentamicin
- c. Gentamicin + ceftriaxone
- d. Ceftriaxone
- e. Ceftriaxone + vancomycin

**18. Regarding thrombolytic drugs, their MAIN mechanism of action is:**

- a. Convert fibrinogen into soluble fibrin by activating peptide A
- b. Converting plasminogen into plasmin preventing the formation of soluble fibrin
- c. By inactivating the coagulative pathway

**19. What is expected in a 20-year-old woman at the time of ovulation?**

- a. Decreased oestradiol and increased FSH
- b. Increased oestradiol and decreased FSH
- c. Increased progesterone and increased LH
- d. Increased progesterone and decreased LH
- e. Increased oestradiol and increased LH

**20. A randomised control trial looking at the effects of vitamin D supplements on fracture rates. In the people on the drug, 1.6% got fractures. In the control group 1.8% got fractures. What is the number needed to treat?**

- a. 0.2
- b. 5
- c. 100
- d. 500

**21. A 77 year-old man with a history of prostatic enlargement presented with fever and loin pain. Physical examination revealed a fever of 39°C and right loin tenderness. A provisional diagnosis was made of pyelonephritis. Which ONE of the following laboratory findings is MOST CONSISTENT with the presence of a urinary tract infection?**

- a. Neutrophils >100x10<sup>6</sup>/mL, isolation of > 10<sup>8</sup> colony forming units (CFU) of Escherichia coli/L
- b. Lymphocytes >10x10<sup>6</sup>/mL, isolation of > 10<sup>6</sup> colony forming units (CFU) of Escherichia coli/L
- c. Neutrophils 10x10<sup>5</sup>/mL, isolation of > 10<sup>8</sup> colony forming units (CFU) of Escherichia coli and Proteus vulgaris/L
- d. Lymphocytes >100x10<sup>6</sup>/mL, isolation of >10<sup>8</sup> colony forming units (CFU) of Escherichia coli/L
- e. Neutrophils >100x10<sup>6</sup>/mL, isolation of > 10<sup>6</sup> colony forming units (CFU) of Escherichia coli/L

**22. With regard to hypertension which of the following is MOST CORRECT**

- a. Diuretics are first line treatment
- b. Beta antagonists are safe in asthmatics
- c. ACE-I may lead to decreased potassium
- d. Spironolactone works in the loop of Henle
- e. Calcium channel blockers may cause headache

**23. What test gives a fast presumptive diagnosis of TB**

- a. Mantoux test
- b. Acid-fast stain of Sputum culture
- c. Gram stain of Sputum
- d. Quantiferon gold test

**24. A 55-year-old man presents with cough, productive of yellowish-white sputum, and breathlessness. He has been a smoker (approx 20 cigarettes/day) for over 30 years and on further questioning acknowledges that his breathlessness has been present for "many months or even years" and has been getting steadily worse. The mechanism underlying his dyspnoea is MOST LIKELY to be:**

- a. Bronchospasm associated with eosinophilic inflammation in the bronchi
- b. Chronic inflammation of the bronchi with mucous gland hypertrophy
- c. Goblet cell hyperplasia with mucus plugging of the bronchi
- d. Progressive centriacinar destruction of alveolar walls
- e. Peribronchiolar inflammation and fibrosis

**25. You are a GP and a couple come in looking for a referral to a termination clinic. The mother is 12 weeks pregnant. They have 3 healthy boys and the woman is currently pregnant with another boy. They want a girl. The most appropriate course of action is:**

- a. Tell them that gender selection is an illegal reason for termination in Australia, but refer them to a gynaecologist anyway
- b. Give with an information pamphlet "Right to Life" and tell them to think about their decision
- c. Tell them to use IVF as it is the only legal way of choosing sex
- d. Acknowledge their distress, and tell them to come back a few weeks later for a long discussion
- e. Acknowledge their concerns, but tell them you can't be responsible for the termination; they have the right to choose but you will not be a part of it and they should see someone else.

**26. You're a GP at a clinic. Patient presents with Hepatitis symptoms. You have noticed that there has been an increase in Hep A cases surrounding dining in a restaurant. You notify your Infectious Disease person when:**

- a. Clinical symptoms without lab test
- b. Lab and clinical symptoms
- c. Lab without clinical symptoms

**27. Regarding infective endocarditis all are true EXCEPT:**

- a. Initial bacterial infection is dependent upon pre-existing valve damage.
- b. Ventricular septal defect is predisposing factor
- c. Bacteraemia may be associated with dissemination of infection
- d. Emboli from valvular vegetations may cause infarction in other organs
- e. Bacteraemia may be associated with widespread deposition of immune complexes

**28. Gallbladder Picture**

- a. Lesion is likely to be benign
- b. Lesion is likely to arise from small intestine mucosa
- c. Lesion is associated with mutation of H-Ras
- d. Lesion is associated with migratory thrombophlebitis
- e. Lesion is unlikely to cause jaundice

**29. Regarding prostate carcinoma, which of the following is MOST CORRECT?**

- a. It occurs on a background of nodular hyperplasia of the prostate
- b. It most commonly presents with urinary outflow obstruction
- c. Its diagnosis is assisted by alpha feto protein
- d. Biopsy shows transitional cell carcinoma
- e. Histopathological grading is of value in prognosis

**30. Man with type 2 DM and controlled hypertension, currently on metformin, gliclazide, chlorothiazide, nifedipine, Ramipril; now starts an NSAID. Main adverse effect?**

- a. Ankle oedema
- b. Bronchospasm
- c. Cardiac failure
- d. Hypoglycaemia
- e. Hypertension

**31. A 21 year old woman comes to see you with painless ulcers in the labia and inguinal lymphadenopathy. She has been sexually active since 15 years old. She is likely to have be infected with:**

- a. Trichomonas vaginalis
- b. Neisseria gonorrhoea
- c. Chlamydia trachomatis
- d. Herpes simplex virus 2
- e. Treponema pallidum

**32. 24 year old man who is HIV/AIDS positive. He doesn't take his antiretrovirals. He presents with 1 week diarrhea, found to be cryptosporidium. What is correct about his infection?**

- a. Spontaneous resolution in a weeks' time
- b. Chronic diarrhoea
- c. Bowel perforation
- d. Dissemination of infection
- e. Resolution after treatment with metronidazole

**33. A 40 year-old man presents to the Emergency Department with abrupt onset of colicky pain in the upper left costovertebral angle, radiating to the left groin. The pain is accompanied by nausea, vomiting and haematuria. A ureteral stone is diagnosed. Which ONE of the following nerves is likely to be carrying the pain signals from this man's ureter?**

- a. Femoral nerve
- b. Genitofemoral nerve
- c. Lumbosacral trunk
- d. Obturator nerve
- e. Pudendal nerve

**34. A 76 year-old man is brought to the Emergency Department. He is confused, afebrile with a stable BP and pulse. Which ONE of the following features would be most useful in establishing the diagnosis of delirium rather than dementia in this case?**

- a. Fluctuating consciousness
- b. Progressive cognitive impairment
- c. Focal neurological signs
- d. Hallucinations
- e. Disorientation

**35. 76 year-old Tom has been a long-standing patient in your private practice. Due to recent severe deterioration in his health, you have serious concerns about his fitness to drive. Your doubts are confirmed after checking the 'Assessing Fitness to Drive' guidelines, as he definitely does not meet the medical criteria for either an unconditional or conditional licence. When you advise Tom that he must cease driving his car immediately, he responds angrily and refuses to comply. Which ONE of the following actions would you perform?**

- a. You personally report Tom to the Driver Licensing Authority immediately, due to your concerns
- b. You request Tom to hand his licence to you, for safeguarding
- c. You refer Tom to a medical colleague for a second opinion about his fitness to drive
- d. You recognise Tom needs time to accept this news, so you will check with him at his next consultation in 6 months
- e. You provide Tom with a written report and advise him to notify the Driver Licensing Authority

**36. A 12-year old girl presents to her GP complaining of a sore throat. She explains that when she swallows her throat is really painful. The GP examines her and confirms the diagnosis of pharyngitis. With regard to this girl's pharyngitis, which ONE of the following statements is MOST CORRECT?**

- a. It should be treated with antibiotics
- b. It could be caused by more than one bacterial species
- c. It is most likely to have been caused by a bacterium
- d. If untreated, it typically leads to glomerulonephritis
- e. Bacterial pharyngitis is easily distinguished from viral pharyngitis on clinical signs alone

**37. Which ONE of the following mechanisms BEST EXPLAINS how cyclosporin reduces immune-mediated rejection of organ transplants?**

- a. It selectively inhibits antibody production by host B lymphocytes
- b. It down-regulates MHC antigens in graft tissue
- c. It is selectively toxic to activated host T-cells
- d. It prevents graft versus host disease
- e. It suppresses the host T-cell response by antagonising IL-2 gene expression during induction of the immunological response

**38. A 50 year-old man has poor vision in one eye with no specific visual field defect, and poor stereopsis. Inspection with an ophthalmoscope reveals no abnormalities. The man reports no recent change in the vision through that eye, although he had surgery to correct a 'lazy eye' in his teenage years. Which ONE of the following is the MOST LIKELY cause of his visual problems?**

- a. Amblyopia due to strabismus during development
- b. Macular degeneration of the wet type
- c. Retinitis pigmentosa due to genetic factors
- d. Presbyopia due to ageing
- e. Glaucoma due to increased intraocular pressure

**39. An 80 year-old man presents with a two-day history of a burning sensation when passing urine and pain in his loins. On examination he looks pale, sweaty and is disorientated. He is found to have a weak thready pulse, low blood pressure (90/50 mm Hg) and a temperature of 39.40C. Which ONE of the following empirical therapies would be MOST APPROPRIATE for this man?**

- a. Norfloxacin IV
- b. Ampicillin IV
- c. Gentamicin IV plus Nitrofurantoin oral
- d. Gentamicin IV plus Ampicillin IV
- e. Gentamicin IV

**40. With respect to the actions of moclobemide for the treatment of depression, which ONE of the following statements is MOST CORRECT?**

- a. It regulates noradrenaline reuptake
- b. It is an atypical antidepressant
- c. It is a selective serotonin reuptake inhibitor
- d. It is a tricyclic antidepressant
- e. It is a monoamine oxidase inhibitor

**41. A 35 year-old woman, who recently migrated from Cambodia, presents to her GP with upper abdominal pain. Upper gastrointestinal endoscopy reveals a benign gastric ulcer. Which ONE of the following nerves is most likely to carry pain signals from the stomach to the central nervous system?**

- a. Greater splanchnic nerve
- b. Lowest splanchnic nerve
- c. Lesser splanchnic nerve
- d. Genitofemoral nerve
- e. Iliohypogastric nerve

**42. A 56 year-old man presents with a one month history of worsening shortness of breath and cough. On examination there is reduced movement of the left side of the chest, dullness on percussion over the left lower zone, reduced vesicular breath sounds and reduced vocal fremitus (resonance). Which ONE of the following conditions is the most likely diagnosis in this case?**

- a. Pulmonary embolism
- b. Pulmonary fibrosis
- c. Pleural effusion
- d. Pneumonia
- e. Pneumothorax

**43. The parents of an 18 month-old girl bring her to the Emergency Department of a Sydney hospital because she has a high fever and is very drowsy. On examination, she is found to have a temperature of 39°C, neck stiffness and a purpuric rash over her buttocks. The registrar's provisional diagnosis is acute bacterial meningitis. Which ONE of the following laboratory tests does NOT CONTRIBUTE to the diagnosis of acute bacterial meningitis?**

- a. CSF protein concentration
- b. Plasma/CSF glucose ratio
- c. Latex agglutination antigen tests
- d. CSF lymphocyte count
- e. Gram stain of centrifuged C

**44. Which ONE of the following statements regarding combination therapy for hypertension is INCORRECT?**

- a. The combination of a beta-blocker and a dihydropyridine calcium channel blocker is particularly useful in the presence of coronary artery disease
- b. The combination of a thiazide diuretic and a beta blocker is contraindicated in people with impaired glucose tolerance
- c. The calcium channel blocker verapamil and a beta blocker is a useful combination approach
- d. Combining an angiotensin receptor antagonist and a calcium channel blocker is an effective approach in people with diabetes
- e. Angiotensin converting enzyme inhibitors and calcium channel blockers are both first line therapies for hypertension

**45. General Practitioner received positive Hepatitis A pathology results for four of her patients within one week, and noted that all four patients had attended the same local seafood restaurant on the same day about a month earlier. She immediately notified the area's Public Health Unit. The Unit proceeds to conduct a case-control study of the restaurant's patrons on the specified date to establish the source of the outbreak. They use a standardised questionnaire administered by phone, and one of the questions asked was the types of food consumed by the cases and the controls (see Table 1). Use the data in Table 1 to populate a 2x2 Table similar to that shown below. Now calculate the odds ratio (OR) of Hepatitis A cases who ate oysters to controls who ate oysters, and choose the MOST APPROPRIATE interpretation from the following alternatives**

	Hepatitis A	Controls
Oysters	18	48
No oysters	2	32

- a. The OR is 0.6, which means that Hepatitis A cases were 0.6 times more likely to have eaten (been exposed to) oysters than controls
- b. The OR is 6.0, which means that Hepatitis A cases were 6.0 times less likely to have eaten (been exposed to) oysters than controls
- c. The OR is 6.0, which means that Hepatitis A cases were 6.0 times more likely to have eaten (been exposed to) oysters than controls
- d. The OR is 8.0, which means that Hepatitis A cases were 8.0 times more likely to have eaten (been exposed to) oysters than controls
- e. The OR is 0.8, which means that Hepatitis A cases were 0.8 times less likely to have eaten (been exposed to) oysters than controls

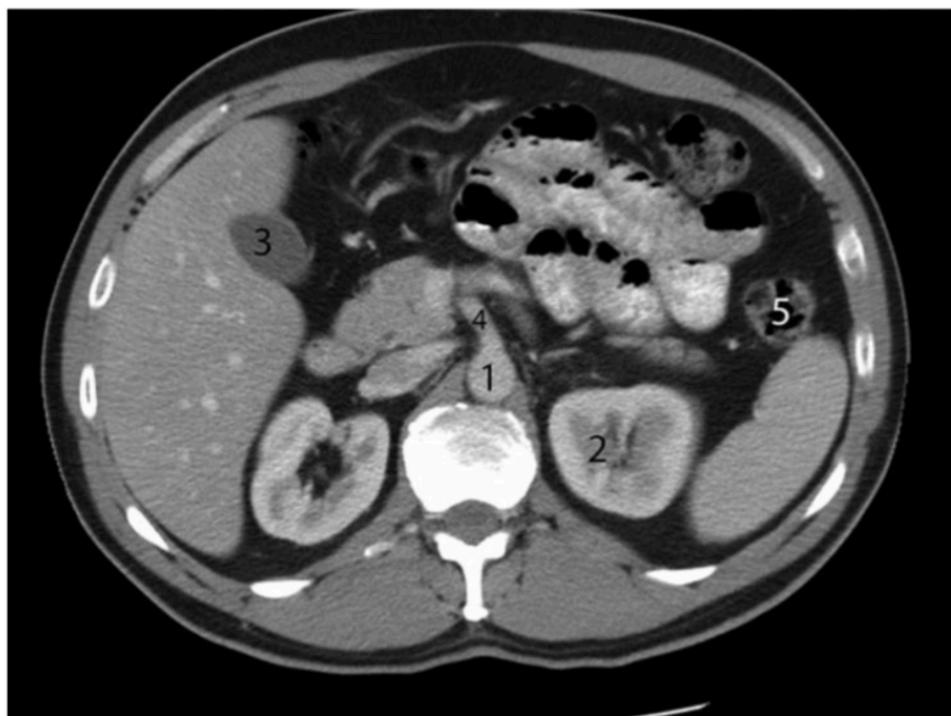
**46. The following question is based on the meta-analysis and systematic review into the treatment of dysuria with trimethoprim compared to no specific treatment in women with cystitis symptoms who tested negative for a dipstick urinalysis. The authors defined a successful outcome as reducing the period of dysuria from five to three days. The results are shown in this forest plot as the Number Needed to Treat (NNT) with 95% confidence intervals for each of five trials (labelled A - E). It is your assessment that an NNT of 10 or lower would be good enough for you to change your practice and start using trimethoprim. The meta- analysis result for these trials (marked X on the figure above) yielded a NNT = 4 (95% CI: 3 to 6). Which ONE of the following statements is the MOST CORRECT interpretation of these data?**

- a. This result shows that using trimethoprim for this group of patients is statistically and clinically significant. On average, we would need to treat 4 women with trimethoprim in order to reduce the period of dysuria from 5 days to 3 days for one extra woman compared to giving no antibiotic.
- b. This result shows that the treatment using trimethoprim for this group of patients is statistically and clinically effective with, on average, 4 women need to be treated in both groups to cure one extra woman of dysuria in 3 rather than 5 days.
- c. We are 5% certain that the number of patients that we would need to treat with trimethoprim to reduce the dysuria in 3 rather than 5 days for one extra woman in comparison to no specific treatment, lies between 3 and 6 women.
- d. This result shows that the treatment using trimethoprim for this group of patients is statistically significant in reducing dysuria in 3 rather than 5 days but it is not clinically significant, so this would not be recommended in actual clinical practice.
- e. This result is not viable, because not all of the studies used to calculate the combined NNT have statistically and clinically significant NNT results.

**47. A 78 year-old man presents with back and chest wall pain that has worsened gradually over the past few weeks. X-rays of the chest wall and pelvis show multiple sclerotic bony metastases. Which ONE of the following investigations would be MOST APPROPRIATE in this case.**

- a. MRI of the pelvis
- b. Radionuclide bone scan
- c. Serum PSA
- d. PET scan of the pelvis
- e. Fine needle aspiration biopsy (FNAB) of an involved vertebra

**48. A 45 year-old man has a CT scan of the upper abdomen for investigation of epigastric pain. Identify structures labelled 1 to 5 in the image by selecting from the list of alternatives provided.**



1. Abdominal aorta
2. Spleen
3. IVC
4. Descending colon
5. Superior mesenteric artery
6. Sigmoid colon
7. Splenic flexure of colon
8. Caudate lobe of liver
9. Gall bladder
10. Medulla of the left kidney

**49. A 55 year-old obese man with a history of chronic bronchitis and obstructive sleep apnoea presents with acute shortness of breath and a productive cough. He is commenced on oxygen via nasal prongs. He becomes increasing drowsy. Which ONE of the following conditions is the most likely cause of this man's deterioration in consciousness?**

- a. Respiratory alkalosis
- b. Obstructive sleep apnoea
- c. Hypoxia
- d. Carbon dioxide retention
- e. Sepsis

**50. Mrs J is a mildly demented patient in a nursing home. She has rectal prolapse and this is causing her considerable discomfort. As her doctor you have discussed the option of surgical correction with Mrs J and her family. The family are in full agreement with this solution, but Mrs J is reluctant to have any surgery. Which ONE of the following statements BEST FITS with the ethical issues posed by this case?**

- a. The family has the right to be involved in the health care of Mrs J
- b. Issues of confidentiality are less relevant for patients in nursing homes
- c. Informed consent is possible even in patients with dementia
- d. The principle of autonomy overrides beneficence for adult patients
- e. Utilitarian arguments indicate that you should behave as you would wish everyone to always behave

**51. The left ventricular ejection fraction is BEST DETERMINED by which ONE of the following ratios?**

- a. End-diastolic volume to end-systolic volume
- b. Stroke volume to end-diastolic volume
- c. End-systolic volume to end-diastolic volume
- d. End-diastolic volume to stroke volume
- e. Stroke volume to end-systolic volume

**52. A 20 year-old woman presents with painless lymphadenopathy in her neck, gradually enlarging over a 6-week period. She is otherwise well. An excision biopsy of one of the enlarged nodes is performed, and a diagnosis of Hodgkin's lymphoma, nodular sclerosis type is established. A representative screenshot of the histopathological appearances of the node is shown below. All of the following histopathological features are present in this lymph node, EXCEPT:**

- a. Bands of fibrosis
- b. Classical Reed-Sternberg cells
- c. Eosinophils
- d. Lacunar cells
- e. Lymphoid follicles

**53. A 60 year-old woman presents to her GP with vague epigastric pain. As part of the investigation of her pain, she has an upper abdominal CT scan. Identify the labelled structures using the dropdown lists provided.**

- a. Is the Left renal vein
- b. Is the Superior mesenteric artery
- c. Is the Ascending colon
- d. Is the Head of pancreas

**54. A 74 year-old previously well woman presents with a three month history of increasing tiredness and shortness of breath. She is otherwise asymptomatic. She is found to have iron deficiency anaemia. Which ONE of the following diagnoses is most likely in this case?**

- a. Carcinoma of the colon
- b. Irritable bowel syndrome
- c. Coeliac disease
- d. Haemorrhoids
- e. Ulcerative colitis

**55. A 50-year old woman presents to her GP complaining of urinary frequency and a burning sensation when passing urine. Given that her symptoms are highly suggestive of a urinary tract infection, the GP decides to treat her with Trimethoprim. Which ONE of the following statements is MOST CORRECT in relation to the mode of action of Trimethoprim?**

- a. It is a metabolic analogue of dihydrofolic acid and inhibits folic acid synthesis
- b. It is a metabolic analogue of para-aminobenzoic acid which leads to the inhibition of folic acid synthesis
- c. It binds to penicillin-binding proteins and inhibits peptidoglycan cross linking
- d. It attaches to the 30S ribosome leading to the inhibition of protein synthesis
- e. It attaches to the 50S ribosome leading to inhibition of protein synthesis

**56. Disulfiram has been used to facilitate abstinence from ethanol, based on its ability to inhibit which ONE of the following?**

- a. Aldehyde dehydrogenase
- b. Mesolimbic dopaminergic pathway
- c. Aldehyde oxidase
- d. Alcohol dehydrogenase
- e. Ethanol withdrawal symptoms

**57. All of the following might occur as a direct consequence of acute plaque change in a coronary artery, EXCEPT:**

- a. Sudden cardiac death
- b. Atheroembolism
- c. Unstable angina
- d. Cerebral embolism
- e. Acute myocardial infarction

**58. A 28 year-old woman with long-standing type 1 diabetes presents for a routine check-up. Which ONE of the following urinary findings is most indicative of early diabetic nephropathy?**

- a. Glycosuria
- b. Proteinuria on urinalysis
- c. Ketonuria
- d. Hyaline casts
- e. Microalbuminuria

**59. A 55-year-old man presents with cough, productive of yellowish-white sputum, and breathlessness. He has been a smoker (approx 20 cigarettes/day) for over 30 years and on further questioning acknowledges that his breathlessness has been present for "many months or even years" and has been getting steadily worse. The mechanism underlying his dyspnoea is MOST LIKELY to be:**

- a. Bronchospasm associated with eosinophilic inflammation in the bronchi
- b. Chronic inflammation of the bronchi with mucous gland hypertrophy
- c. Goblet cell hyperplasia with mucus plugging of the bronchi
- d. Progressive centriacinar destruction of alveolar walls
- e. Peribronchiolar inflammation and fibrosis

**60. A 23 year-old man is a passenger in a car which is hit on the passenger's side by another car. He is brought to the Emergency Department complaining of pain in the left upper abdomen and the left shoulder tip. He is haemodynamically stable and is not in any respiratory distress. Injury to which ONE of the following structures is the most likely cause of his pain?**

- a. Diaphragm
- b. Lung
- c. Kidney
- d. Spleen
- e. Stomach

**61. Which of the following is MOST CORRECT about gentamicin:**

- a. Associated with ototoxicity
- b. Covers Enterococcus
- c. First line therapy in acute cystitis
- d. Drug of choice in renal impairment
- e. Targets cell wall synthesis

**62. Inferior view of cancer of the head of the pancreas with a dilated ducts and an (open) enlarged gallbladder.**

- a. Lesion is likely to be benign
- b. Lesion is likely to arise from small intestine mucosa
- c. Lesion is associated with mutation of H-Ras.
- d. Lesion is associated with migratory thrombophlebitis
- e. Lesion is unlikely to cause jaundice

**63. Diabetic patient has a chronic ulcer on the 1st metatarsophalangeal. What of the following is the likely cause:**

- a. Microvascular disease
- b. Macrovascular disease
- c. Peripheral neuropathy
- d. Arthropathy
- e. Osteomyelitis

**64. Bupropion is used for management in cessation of what drugs?**

- a. Nicotine
- b. Ethanol
- c. Cocaine
- d. Heroin
- e. Marijuana

**65. Histopath picture of a colon - what does it show?**

- a. Metaplasia
- b. Hyperplasia
- c. A neoplasm showing glandular differentiation
- d. A neoplasm showing squamous differentiation
- e. A neoplasm showing mesenchymal differentiation

**66. Which ONE of the following pharmacokinetic parameters is MOST affected by ageing?**

- a. Bioavailability
- b. Formation of active metabolites
- c. Hepatic Clearance
- d. Renal Clearance
- e. Volume Distribution

**67. Acute Respiratory Distress Syndrome does NOT cause**

- a. Hyaline membrane formation
- b. Airway obstruction
- c. Atelectasis
- d. Injury and destruction of the alveolar epithelium

**68. 19 year old presents to your clinic after travelling to Vanuatu and is diagnosed with Falciparum Plasmodium malaria. All factors are important in determining drug therapy for the patient EXCEPT**

- a. History of travel to Vanuatu
- b. Drug allergy
- c. Degree of parasitaemia
- d. Presence of thrombocytopenia
- e. Malaria chemoprophylaxis

**69. Regarding fine needle biopsy for cancer, which is of MOST CONCERN?**

- a. Tumour seeding along the biopsy track
- b. False positive results
- c. Pain associated with the procedure
- d. Time taken
- e. Sensitivity of the assay

**70. A 30 yr old woman who has been using COCP for 12 years presents to your clinic to discuss her risk of breast cancer. She has recently been diagnosed with a benign breast cyst, and her aunt on her father's side had breast cancer at the age of 60. Which of the following would you recommend?**

- a. Normal/slightly increased risk, and should commence regular screening via mammogram at age 40
- b. Normal/slightly increase risk, and should commence regular screening via mammogram at age 50**
- c. Moderately increased risk, should commence regular screening via mammography now
- d. Moderately increased risk, should commence regular screening via ultrasound now
- e. Highly increased risk, should commence have an ultrasound and mammography now

**71. 12 yr old boy had an accident riding a bike down a hill, with a large open wound over his right shin. On presenting to ED, the x-ray showed 2 bone fragments. Which of the following is true?**

- a. This is a simple comminuted fracture.
- b. There is increased risk of delayed foreshortening if untreated
- c. There is increased risk of infection, and delayed union/non-union**
- d. Biological healing will occur before clinical or radiological findings appear
- e. This is a pathological fracture

**72. 56 year-old woman with a past history of mitral valve regurgitation presents with palpitations and dyspnoea. O/E had irregular pulse and signs of congestive heart failure. ECG confirmed atrial fibrillation. she would have all the following signs EXCEPT:**

- a. Split second heart sound on inspiration
- b. Soft first/second heart sound
- c. Third heart sound
- d. Fourth heart sound**
- e. Pansystolic murmur best heard at the apex

**73. *Bordetella pertussis***

- a. Causes leukocytosis predominantly of neutrophils
- b. Can be diagnosed in early stages
- c. Can be cultured in early stages
- d. If people are vaccinated during childhood they generally have lifelong immunity
- e. Can be cultured on sheep blood agar

**74. 67 year old man presents with tiredness, anorexia and greater than 10kg weight loss.**

Past history unremarkable, physical examination was normal. He did a blood test.

Investigation findings as below: Hb 92 (130-180) MCV 82 (80-100) MCH 26 (27-32)

Serum Fe 8 (10-30) Serum Ferritin 400 (30-300) TIBC 30 (45-80) Which is the most likely conclusion?

- a. Pernicious anaemia
- b. Anaemia of inflammation
- c. Haemolysis
- d. Fe Deficiency
- e. Myelodysplasia

**75. With regards to Primary Lung cancer. Which of the following is MOST CORRECT?**

- a. Liver metastases are most common
- b. In pleural involvement, chest pain is common
- c. Adenocarcinoma is most common in non-smoker
- d. Squamous cell carcinoma arise from peripheral bronchi
- e. Small cell carcinoma are slow growing and rarely metastasize.

**76. 67 yo lady with a 2 day history of cramps in the perumbilical region. most likely cause:**

- a. Biliary Colic
- b. Large Bowel Obstruction
- c. Small Bowel Ischaemia
- d. Stricture of Duodenum
- e. Perforated Viscus

**77. What is true about the head of the pancreas?**

- a. Duodenal Papilla
- b. Supplied by Gastroduodenal Artery
- c. Superior Mesenteric Artery is anterior
- d. Splenic Vein is posterior

**78. Elderly Russian speaking man in Palliative Care that is ill. Translator is only through phone. He is in discomfort and you believe that he may have an existential problem (life and death). You suspect pain management is not adequate but the family does not wish the patient to know about his terminal state. What is the best course of action?**

- a. Convince the family to let you tell the patient - it is not worth trying to talk to the patient alone
- b. Seek assistance from a chaplain who is knowledgeable about these spiritual issues
- c. Go see patient yourself and use sign language
- d. Use a Russian speaking janitor when the family leaves
- e. Concentrate on pain management

**79. A boy comes with a wound and penicillinase Staphylococcus aureus is isolated. What treatment?**

- a. Ampicillin
- b. Flucloxicillin
- c. Gentamicin
- d. Vancomycin
- e. Erythromycin

**80. Label heart macroscopic close up of left ventricle**

- a. Necrosis of ventricular wall/necrotic myocardium
- b. Haemorrhage/Granulation Tissue
- c. Coronary Artery Occlusion/narrowed by atherosclerosis
- d. Necrotic papillary muscle

**81. Which of the following causes fructose to affect metabolic processes?**

- a. Increased levels of glucose in the blood
- b. Increased levels of insulin in the blood
- c. Postprandial increased levels of triglycerides
- d. Increased secretion of leptin leading to increased hunger
- e. Decreased secretion of ghrelin leading to increased hunger

**82. How do you monitor fluid balance in chronic kidney disease?**

- a. Weight
- b. JVP
- c. BP
- d. Skin Turgor
- e. Ankle Oedema

**83. A left renal cell cancer can cause a varicocele in the testes because:**

- a. The tumour may invade the left renal vein and cause obstruction of the left testicular vein
- b. The left testicular vein passes behind the left kidney
- c. Renal cell cancers metastasize to the testes

**84. Regarding Quality Use of Medicines policy, which of the following is most true?**

- a. The consumer is central to decisions
- b. Community pharmacy input is more reliable than that of the pharmaceutical industry
- c. MIMs is the best source of data for the practice of quality use of medicines
- d. The main purpose of the National Prescribing System is to provide savings through the Pharmaceutical Benefits Scheme
- e. Herbal medicines are not covered

**85. 30 hours following a conference, a 28 year old woman presents with abdominal pain, slight fever and diarrhoea. Her symptoms improved within the next 24 hours and she was able to return to work the next day. Upon discussion, 12 of her colleagues suffered similar symptoms and they discovered all had eaten BBQ chicken. Which organism is most likely to have caused this?**

- a. Clostridium perfringens
- b. Staph aureus
- c. Campylobacter jejuni
- d. Salmonella typhi
- e. Shigella sonnei

**86. Which of the following drugs is for controlling opioid withdrawal symptoms?**

- a. Clonidine
- b. Methadone
- c. Buprenorphine
- d. Naloxone
- e. Naltrexone

**87. What is true about the jugulodigastric lymph node?**

- a. It is one of the superficial cervical lymph nodes
- b. It is enlarged and painful in ipsilateral tonsillitis
- c. It is located anterior to the upper part of the external jugular vein
- d. It is located on the thyrohyoid membrane
- e. On CT you can see it on the mastoid process at the attachment of the digastric muscle

**88. What does diabetic nephropathy do to GBM (Glomerular Basal Membrane)?**

- a. Non enzymatic glycosylation of the GBM
- b. Thinning of the GBM
- c. Decreased permeability for the GBM
- d. Antibody developed

**89. HIE exercise in an obese woman after 3 months**

- a. Her leg muscle mass increased
- b. There was no change in anaerobic capacity after 3 months
- c. Significant increase in insulin sensitivity at 3 months
- d. Decreased fat loss compared to regular bike exercise
- e. No change in maximum oxygen uptake

**90. Kid with neck stiffness and non-blanching rash. What is the most likely finding on gram stain?**

- a. Gram +ve rods
- b. Gram -ve diplococci
- c. Gram +ve cocci in chains
- d. Gram +ve diplococci
- e. Gram -ve rods

**91. A 25 yo woman is 14 weeks pregnant and presents with cystitis. Which antibiotic is contraindicated?**

- a. Amoxicillin
- b. Ceftriaxone
- c. Nitrofurantoin
- d. Erythromycin
- e. Trimethoprim

**92. Guy with plasmodium vivax after travel is treated with Chloroquine and the symptoms resolve but he does not present for follow up. four months later, the symptoms return. this is because:**

- a. Chloroquine wasn't effective
- b. Reinfection from local mosquito
- c. Survival in hepatocytes
- d. Survival in splenic macrophages
- e. Survival in RBCs

**93. A 1 year old baby presents with rhinorrhoea, fever, and later has episodes of paroxysmal coughing. You suspect Bordetella Pertussis. What is most appropriate course of action?**

- a. Nasopharyngeal swab for PCR, plus IgA serology
- b. Nasopharyngeal swab for culture, throat swab for PCR, blood cultures, and IgG serology
- c. Bloods for Acute and convalescent serology for IgA and IgG E.

**94. What is the best way to get accurate prescription list from old lady from nursing home referred to hospital.**

- a. Son and family
- b. Webster Pack
- c. GP
- d. Duty nurse from nursing home
- e. Community pharmacist.

**95. A 40 year old man presents with a left upper quadrant pain. On palpation there was a palpable mass - what is the most reliable sign that this mass is from a kidney and not a splenomegaly?**

- a. Resonant on percussion
- b. Moves on inspiration
- c. Palpable on bimanual palpation
- d. Size of the mass
- e. The superior border can be felt

**96. A 57 year old man presented with progressive weakness and numbness of the distal part of his lower limbs. On examination, there was decreased sensation (light touch and vibration; ? pinpoint) and weakness in dorsiflexion of his feet. Which of the following is the most likely cause of his symptoms?**

- a. Multiple sclerosis
- b. Motor neurone disease
- c. Lumbar spondylosis with nerve compression
- d. Spinal cord compression
- e. Peripheral neuropathy

**97. A 25 year old male sustained a stable ankle fracture of the right foot. A full plaster cast was applied from below the knee to the toes. The next day he complained of increased pain in his foot accompanied by pallor and numbness. The process most likely to explain his symptoms is:**

- a. Displacement of the fractured ankle
- b. Nerve compression
- c. Osteomyelitis
- d. Ischaemia

**98. All of the following are present in giardia EXCEPT**

- a. Nausea
- b. Fever
- c. Flatulence
- d. Watery Diarrhoea
- e. Bloating

**99. In isovolumetric contraction, the mitral valves are \_\_\_\_\_ and the aortic valves are \_\_\_\_\_**

- 
- a. Closed and closed
  - b. Closed and open
  - c. Open and closed
  - d. Both half open

**100. In your GP practice you've noticed a cluster of patients presenting with Hepatitis A symptoms having recently been to the same RSL function. You have already alerted the local Public Health Unit. But as a GP you know not all new cases represent a true rise in incidence. What is the MOST LIKELY cause of a FALSE rise in incidence?**

- a. Increase in population
- b. An outbreak
- c. Changing characteristics of the population
- d. New testing protocol
- e. Random Variation

**101. Using the Nuffield Ladder of intervention relating to public health policy, what level of intervention is representing the current Australian Vaccination program in children?**

- a. Eliminated Choice
- b. Enabled Choice
- c. Guided choice by incentive
- d. Guided choice through information
- e. Restricted choice by default

**102. Which one of the following groups of 3 microbial genera are most commonly associated with cutaneous mycoses?**

- a. Trichophyton, epidermophyton, mycobacteria
- b. Epidermophyton, bacteroides, microsporum
- c. Trichophyton, mycoplasma, epidermophyton
- d. Epidermophyton, trichophyton, microsporum
- e. Bacteroides, trichophyton, mycoplasma

**103. Histopath slide. There is a moderately well differentiated cancer in the subpleural area. The cells were large and formed glands that secreted mucin. Which one is it most likely to be:**

- a. Small cell carcinoma
- b. Large cell carcinoma
- c. Squamous cell carcinoma
- d. Adenocarcinoma
- e. Mesothelioma

**104. Regarding alcohol and drugs of addiction, which one of the following is true:**

- a. Sensitisation from repeated use mostly occurs with cannabinoids
- b. Topiramate is used for cocaine because it inhibits GABA neurotransmission
- c. Disulfiram blocks alcohol dehydrogenase
- d. Naltrexone is used for alcohol because it reduces alcohol induced reward
- e. Clonidine is used for nicotine because it reduces withdrawal symptoms

**105.** In November 2012, 45 people at POW (both patients and staff) contracted a food-borne illness. Symptoms included fever, nausea, vomiting and diarrhoea. The public health unit was contacted and an investigation began. This revealed that 20 more people had also contracted the illness, and all of these people had eaten food within a defined four days. Stool cultures revealed a growth of Shigella (?or maybe salmonella). A study was performed to determine the source of the outbreak that involved a questionnaire being given to those that had contracted the illness and also to a group of people who had been present at the time and had not contracted the illness. The most appropriate study would be

- a. Case-control
- b. Prospective case control
- c. Retrospective cohort
- d. Prospective cohort
- e. RCT

**106.** In a perforated gallbladder, where is the MOST LIKELY location for its contents to empty:

- a. Lesser Sac
- b. Right Paracolic Gutter
- c. Left Greater Sac
- d. Pouch of Douglas
- e. Epiploic foramen

**107.** Which of the following antibiotic targets is most likely to result in serious side effects following administration of such an antibiotic?

- a. Cell membrane
- b. Cell wall
- c. DNA
- d. Protein synthesis
- e. Folic acid synthesis

**108.** Anatomical pathologist confirms moderately differentiated colonic adenocarcinoma. The following features are consistent with this diagnosis except:

- a. Glandular differentiation
- b. Stromal desmoplastic reaction
- c. Nuclear atypia
- d. Invasion through the muscularis mucosae
- e. Proliferation of spindle cells in bundles

**109.** Which of the following drugs are CONTRAINDICATED in glaucoma?

- a. α<sub>2</sub> agonist
- b. β agonist
- c. Prostaglandin analogues
- d. Parasympathomimetics
- e. Carbonic anhydrase inhibitors

**110. What is the most important risk factor for CAD?**

- a. Hyperlipidemia
- b. Smoking
- c. Hypertension
- d. Type 2 diabetes
- e. Lack of physical activity

**111. What type of outbreak can be seen in the graph.**

- a. Point source
- b. Intermittent common source
- c. Continuous common source
- d. Propagation
- e. Not an outbreak

**112. Ureretic pain radiating to scrotum/groin. What spinal root?**

- a. T10
- b. T11
- c. T12
- d. L1
- e. L2

**113. What antibiotic is associated with ototoxicity and nephrotoxicity?**

- a. Penicillin G
- b. Erythromycin
- c. Ceftriaxone
- d. Gentamicin
- e. Penicillin V

**114. Which one of the following is the most widely used antacid for gastroesophageal reflux disease?**

- a. Aluminium hydroxide
- b. Calcium carbonate
- c. Magnesium hydroxide
- d. Sodium bicarbonate
- e. Combination of aluminium hydroxide and magnesium hydroxide

**115. For penicillin-resistant Staph aureus, the MOST APPROPRIATE treatment would be:**

- a. Amoxicillin
- b. Flucloxacillin
- c. Vancomycin
- d. Clarithromycin
- e. Ticarcillin

**116. Which one of the following is the first line therapy in the maintenance of remission of ulcerative colitis:**

- a. Azathiopurine
- b. Infliximab
- c. Prednisone
- d. Sulfasalazine**
- e. 6-Mercaptopurine

**117. Which feature is not normal in 22 week pregnancy?**

- a. Decreased haemoglobin
- b. Decrease red cell mass**
- c. Decrease serum creatinine concentration
- d. Decrease serum albumin concentration
- e. Increase plasma volume

**118. Histo Slide. Reduced FEV1 and FVC1. Normal FEV1:FVC ratio. X- Rays with opacities at the base and peripheries of lung. 4 months history.**

- a. Chronic Bronchitis
- b. Emphysema
- c. Hypersensitivity Pneumonitis
- d. Asbestosis
- e. Idiopathic Pulmonary Fibrosis

**119. Guillain-Barre can occur as a consequence of which GIT infection?**

- a. S. Typhi
- b. S. Typhimurium
- c. Shigella dysenteriae
- d. Vibrio Cholera
- e. C. Jejuni

**120. Which of the following BEST EXPLAINS the success of the cervical screening program in Australia?**

- a. HPV Vaccine can't help women already infected
- b. Cervical cytology can detect high grade HPV infections
- c. Cervical carcinoma rates are increasing
- d. SCC is preceded by CIN
- e. Because Genital warts can lead to cancer

**121. Which of the following does not result in hypotension in acute pancreatitis?**

- a. Activation of sympathetic nervous system**
- b. Sepsis
- c. Haemorrhage due to elastase
- d. Exudation into peritoneal cavity
- e. Loss of fluid into third space due to paralytic ileus

**122. A man has bronchopneumonia (history of chronic airway limitation, heart failure and hypertension) and is bed bound - what do you give him as prophylaxis?**

- a. Warfarin
- b. Low molecular weight heparin
- c. Aspirin
- d. TED stockings
- e. Exercise

**123. Man presents to ED with dyspnoea (LVF) and syncope, having recently been diagnosed with prostate cancer and undergoing open prostatectomy (DVT/PE). His vitals are as follows: HR 120/min, RR 20/min, BP 95/65, O<sub>2</sub> sat 92%. On examination of the chest and cardiovascular system, no abnormalities were detected. An ECG was then performed. Which of the following patterns would least likely be seen on ECG?**

- a. Right axis deviation
- b. Right bundle branch block
- c. Wide P-waves
- d. T-wave inversion in anterior leads
- e. S<sub>1</sub>, Q<sub>3</sub>, T<sub>3</sub> in leads I and III

**124. Regarding impetigo in the Aboriginal population, which is MOST CORRECT:**

- a. Staph Aureus is the most common organism
- b. It mainly occurs in young adults
- c. It does not involve the dermis
- d. It predisposes to scabies
- e. It is clinically diagnosed by the presence of annular lesions

**125. Regarding infective endocarditis which of the following is most CORRECT:**

- a. Initial bacterial infection is dependent upon pre-existing valve damage
- b. Commonly caused by staph aureus in patients with colonic disease
- c. Commonly caused by staph epidermidis in patients with heart valve transplants
- d. Commonly caused by strep viridans in IDUs
- e. Faecalis is the most common cause overall

**126. The following X-ray shows a hip joint. What is the pathology underlying this?**

- a. Osteoarthritis
- b. Rheumatoid Arthritis
- c. Avascular necrosis of femoral head
- d. Gout
- e. Paget's disease of the bone

**127. A patient is prescribed Zanidip (Lercanidipine 10mg) for his hypertension. The pharmacist says the patient can have Zircol (Lercanidipine 10mg) and it will be \$2.66 cheaper than Zanidip. Which one of the following alternatives is MOST CORRECT?**

- a. The patient should not agree as the performance of Zircol is not proven to be equivalent to Zanidip
- b. Therapeutic Group premiums such as this undermine innovation in the pharmaceutical industry
- c. Agreeing to take Zircol will limit "safety net" accumulation for this patient
- d. Brand price premiums such as this can be blocked by prescriber
- e. If patient has a concession due to age Zanidip would be totally subsidised

**128. Which one is true regarding mechanisms of anticoagulants?**

- a. Warfarin inhibits vitamin-k dependent carboxylase
- b. Aspirin blocks fibrinogen binding to glycoprotein IIb/IIIa (OWTTE) (S530 COX)
- c. Abciximab (glycoprotein IIb/IIIa receptor antagonist)
- d. Dipyridamole blocks phosphodiesterase, increasing levels of intracellular cAMP

**129. Ethics question - which is true?**

- a. Social justice demands equality in access to health care
- b. Beneficence and non-maleficence are mutually exclusive
- c. Autonomy generally overrules justice
- d. Public health ethics looks at beneficence

**130. Which one is most correct regarding stroke?**

- a. Most commonly caused by a thrombus forming after a ruptured plaque
- b. It is a complication of subfalcine haemorrhage
- c. It is typically haemorrhagic

**131. Fructose affects metabolism by:**

- a. Increasing postprandial lipid levels
- b. Increase leptin production therefore increasing hunger
- c. Decrease ghrelin therefore increasing hunger
- d. Increase blood sugar level faster than glucose
- e. Increase insulin faster than glucose

**132. Which of the following regarding infectious mononucleosis is true?**

- a. Infectious mononucleosis can be treated with ampicillin
- b. Infectious mononucleosis is most common in pre-school children
- c. Infectious mononucleosis can be transmitted via faecal-oral route
- d. Infectious mononucleosis can be diagnosed via heterophile antibodies
- e. Infectious mononucleosis presents with a rash

**133. Regarding primary cancer of the lung, which is most true?**

- a. Adenocarcinoma is the most common lung cancer in smokers
- b. Involvement of the pleura causes chest pain
- c. The cancer typically metastasises to the liver
- d. Small cell lung cancer typically manifests late
- e. Squamous cell carcinoma arises in the periphery of the bronchi

**134. In a woman with atrial fibrillation, you're least likely to find:**

- a. Rumbling
- b. Pansystolic murmur best heard at the apex
- c. Split 2nd heart sound on inspiration
- d. 3rd heart sound
- e. 4th heart sound

**135. Colicky pain in the hypogastrium**

- a. Right colic flexure
- b. Anus
- c. Sigmoid colon
- d. Ascending colon
- e. Caecum

**136. Which is true for transdermal drugs?**

- a. Molecular weight <500 daltons
- b. Presence of hair follicles decreases drug absorption
- c. Can cause systemic toxicity
- d. Doesn't need to be water soluble
- e. Limited to topical antibiotics

## 2013 Memorandum

**1. Axial CT of chest. Label:**

- a. Oblique fissure of left lung
- b. Ascending aorta
- c. Right main bronchus
- d. Pulmonary trunk
- e. Superior vena cava

**2. Which of the following joints is not typically involved in rheumatoid arthritis?**

- a. Cervical spine
- b. Lumbar spine
- c. Metatarsalpharyngeal joints
- d. DIPs

**3. Regarding UTIs:**

- a. Pyelonephritis is primarily associated with haematological spread
- b. Increase risk in males
- c. The oral contraceptive pill is a risk factor
- d. Doesn't cause neurogenic bladder disturbance
- e. Most commonly caused by gram-negative bacteria from the gut

**4. Caution should be taken with unilateral use of latanoprost as it can cause the following adverse effects, EXCEPT:**

- a. Permanent change in iris colour
- b. Conjunctival hyperaemia
- c. Eyelid retraction
- d. Eyelash lengthening
- e. Blurred vision

**5. What condition primarily affects the photoreceptor?**

- a. Retinitis pigmentosa
- b. Myopia
- c. Glaucoma
- d. Strabismus
- e. Amblyopia

**6. Scientists investigate outbreaks by plotting on endemic curves. Which one best describes a common source outbreak?**

- a. Cases exposed to a person with disease
- b. Cases exposed to an intermittent source over time
- c. Cases exposed to a single source in an incubation time
- d. Cases exposed to multiple sources over time
- e. Cases exposed to multiple sources over many outbreaks

**7. Regarding clinical audit, which ONE of the following is the third step?**

- a. Implement changes
- b. Set guidelines/ clinical practice standards
- c. **Observe clinical performance and collect data**
- d. Identify a health issue
- e. Compare performance to clinical guidelines/standards

**8. What feature cannot be seen on a CT scan at the level of C5?**

- a. Sternohyoid
- b. Omohyoid
- c. Scalenus muscle
- d. **External carotid**
- e. Thyroid cartilage

**9. A 23-year-old lady comes into practice with dyspnoea and wheeze and cough over 3 months. She said that this has been exacerbated by the cold and exercise. Which test would you do to confirm diagnosis?**

- a. Family history
- b. **Pulmonary function test**
- c. Physical examination
- d. Sputum culture for aspergillus
- e. CXR

**10. Regarding impetigo in the Aboriginal population, which is most correct:**

- a. Staph Aureus is the most common organism
- b. It mainly occurs in young adults
- c. **It does not involve the dermis**
- d. It predisposes to scabies
- e. It is clinically diagnosed by the presence of annular lesions

**11. Which of these is MOST correct about drugs and the blood brain barrier?**

- a. Peptides can cross via simple diffusion
- b. Insulin cannot cross the BBB
- c. **Glucose can cross the BBB via specific transport proteins**
- d. Amino acids can cross the BBB via exocytosis
- e. Large, hydrophilic substances can cross the BBB easily

**12. After 3 months of high intensity exercise (HIE) in an obese woman, which is the most correct?**

- a. Leg muscle mass was increased
- b. Less fat loss compared to regular intensity exercise
- c. No change in aerobic capacity
- d. **Significant increase in insulin sensitivity**
- e. No change in VO<sub>2</sub>

**13. In an outbreak investigation what is the most common cause of an artificial increase in cases?**

- a. Change in laboratory protocol
- b. Increase in population susceptibility
- c. Increase in population size
- d. Change in population characteristics
- e. Random variation

**14. In a RCT studying the effectiveness of high dose Vitamin D treatment in prevention of hip fracture in patients with diagnosed osteoporosis, the absolute risk of hip fracture in the intervention group taking Vitamin D treatment was  $21/1345=1.6\%$ . The absolute risk of hip fracture in the control group (no treatment) was  $24/1341=1.8\%$ . According to this study, what is the appropriate number needed to treat (NNT) for Vitamin D treatment in the prevention of hip fracture?**

- a. 0.2
- b. 5
- c. 20
- d. 50
- e. 500

**15. Regarding the transitional zone, which one of the following is most correct:**

- a. Adjacent to rectum
- b. Surrounding ejaculatory duct
- c. Area where benign prostatic hypertrophy occurs
- d. Surrounding by fibromuscular capsule

**16. A 76-year-old woman presents with lower limb pain following a bowel resection. Which test is most appropriate?**

- a. D-dimer
- b. Duplex ultrasound
- c. X-ray
- d. Venogram
- e. Ventilation/ perfusion mismatch

**17. In chronic kidney disease, which consequence is not a direct result of GFR reduction:**

- a. Hypertension
- b. Increased serum urea
- c. Increased serum creatinine
- d. Hyperphosphatemia
- e. Hypocalcemia

**18. Vancomycin. All the following are true EXCEPT**

- a. Glycopeptide that inhibits cell wall synthesis
- b. Must be administered through IV for at least 60 minutes
- c. Half-life of 6 hours
- d. Must be dose adjusted in renal failure
- e. Can cause nephrotoxicity

**19. All of the following are possible visual consequences of a stroke, EXCEPT:**

- a. Loss of vision in one half of the visual field, while vision in the other half of the field is preserved
- b. Loss of the ability to recognise familiar faces, while the ability to read is preserved
- c. Loss of the perception of object motion, while the ability to visually recognise objects is preserved
- d. Loss of the ability to distinguish red from green, while the ability to distinguish red from blue is preserved
- e. Loss of the ability to read, while the ability to visually detect movement is preserved

**20. You are assisting at the repair of a direct inguinal hernia and notice that the surgeon is taking great care to protect the ilioinguinal nerve emerging from the superficial inguinal ring. Regarding this nerve, which ONE of the following is the MOST CORRECT:**

- a. Supplies skin of lateral thigh
- b. It typically supplies the root of the penis and upper scrotum
- c. It is a branch of the sacral plexus
- d. It typically gives muscular branches to the sartorius muscle
- e. The nerve forms from L2 and L3

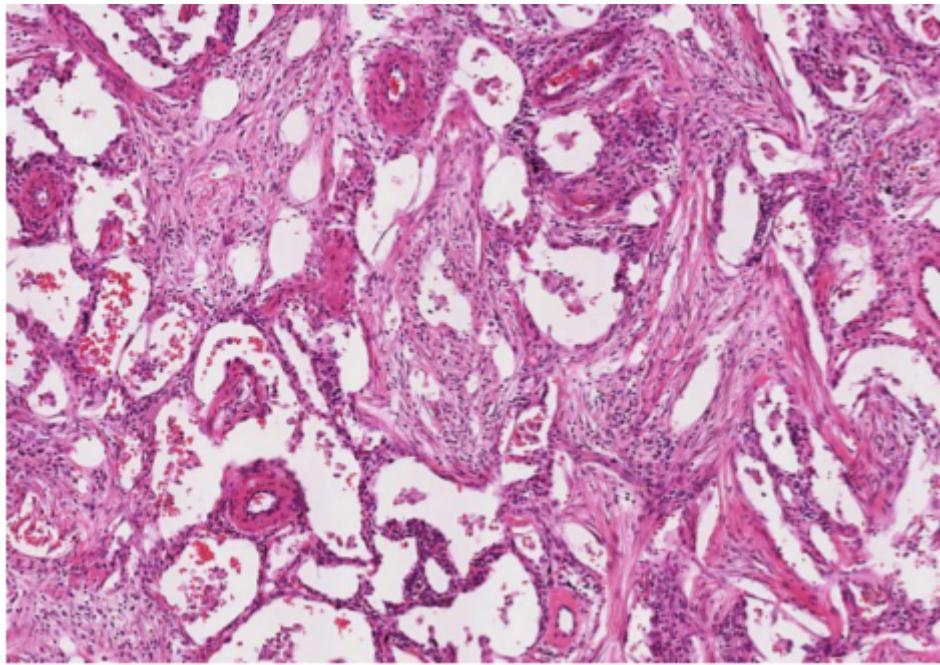
**21. 68yr old male presenting as tired and breathless with blood results showing a haemoglobin of 85(130-180) and no other symptoms. How should you investigate further?**

- a. Upper GI endoscope
- b. Abdo CT
- c. Colonoscopy
- d. Flexible Sig
- e. Faecal occult

**22. What disease does EBV cause?**

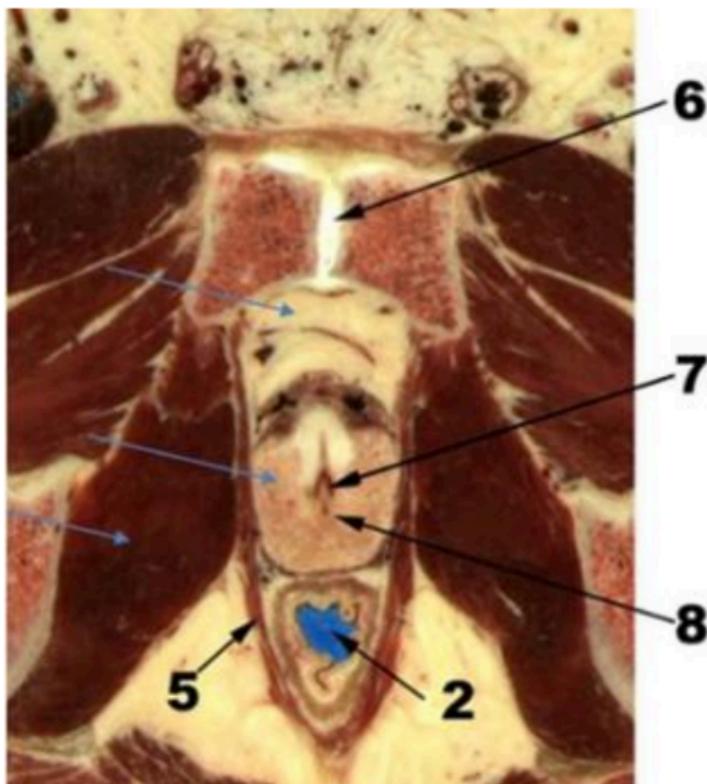
- a. Pneumonia
- b. Infective mononucleosis
- c. Q-fever
- d. Toxoplasmosis

**23. A 42-year-old man develops severe breathlessness over a period of 4 months.**  
Chest X-ray and high-resolution CT scan of the thorax reveal predominantly basal and peripheral reticular opacities. Spirometry demonstrates decreased FEV1 and FVC but a normal FEV1/FVC ratio, with markedly decreased pulmonary compliance. A surgical lung biopsy was performed (representative image above). The clinical and investigative data are MOST CONSISTENT with:



- a. Chronic bronchitis
- b. Emphysema
- c. Hypersensitivity pneumonitis
- d. Asbestosis
- e. Idiopathic pulmonary fibrosis

24. An axial section through the normal male pelvis is shown below. Identify each of the features labelled 1 to 5 by selecting from the alternatives provided. Identify blue arrows and arrows seven and eight.



- a. Bladder
- b. Colliculus seminalis
- c. Ductus deferens
- d. Ejaculatory duct
- e. Levator ani
- f. Obturator externus
- g. Obturator Internus
- h. Piriformis
- i. Prostate gland
- j. Prostatic urethra

Blue 1: bladder

Blue 2: prostate

Blue 3:

7: prostatic urethra

8:

**25. A 57-year old man presented with progressive weakness and numbness of the distal part of his lower limbs. On examination, there was decreased sensation (light touch and vibration) and weakness in dorsiflexion of his feet. Which of the following is the most likely cause of his symptoms?**

- a. Multiple sclerosis
- b. Motor neuron disease
- c. Lumbar spondylosis with multiple nerve compression
- d. Spinal cord compression
- e. Peripheral neuropathy

**26. CT abdomen axial view. Identify 4 different things on the image. They were: spleen, splenic flexure, head of pancreas, and inferior vena cava.**

**27. Around 6 hours after a banquet 10% of the people there developed symptoms of vomiting, diarrhoea, nausea and abdominal cramps. Most self-resolve but some need to be taken to hospital for dehydration. What is the likely causative organism?**

- a. Shigella
- b. Salmonella
- c. Botillism
- d. Staphylococcus aureus

**28. A 19-year old male presents after travelling to Vanuatu and is diagnosed with P. malaria. All factors are important in determining drug therapy for the patient except:**

- a. History of travel to Vanuatu
- b. Drug allergy
- c. Degree of parasitaemia
- d. Presence of thrombocytopenia
- e. Malaria chemoprophylaxis

**29. With regards to hypertension, which of the following is correct?**

- a. Diuretics are the first line treatment
- b. B-antagonists are safe in asthmatics
- c. ACE inhibitors may lead to decreased serum potassium
- d. Spironolactone works in the loop of Henle
- e. Dihydropyridine calcium channel blockers such as nifedipine may cause headaches

**30. When the eye is abducted, which of the following elevates the eye?**

- a. Superior rectus
- b. Superior oblique
- c. Inferior oblique
- d. Superior rectus and superior oblique
- e. Superior rectus and inferior oblique

**31. Which one of the following complications is the most common cause of death in diabetes mellitus?**

- a. Renal disease
- b. Autonomic neuropathy
- c. Peripheral vascular disease
- d. Mycoplasma or fungal infection
- e. Pyogenic bacterial infection

**32. Which is most correct about infective endocarditis?**

- a. Previous valve damage is essential
- b. Enterococcus faecium is the most common causative agent
- c. Staph aureus is most common in individuals with colonic neoplasms
- d. Strep viridans is most common in IDUs
- e. **Staph epidermidis is most common in people with artificial valves**

**33. What is the mechanism of benzodiazepines such as Diazepam?**

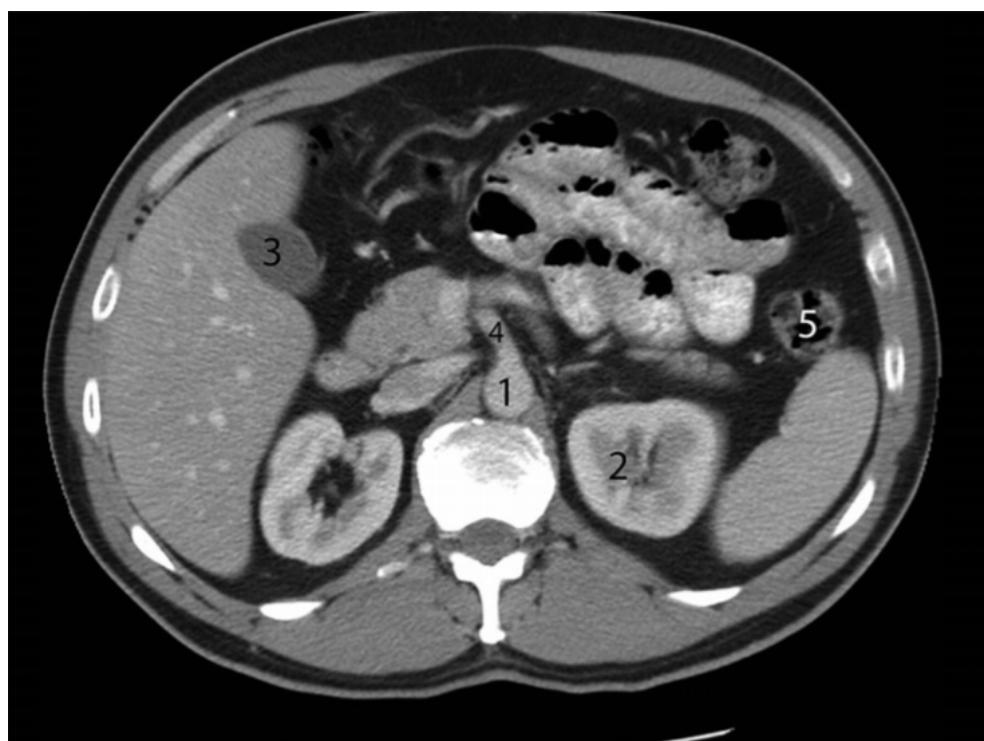
- a. They antagonise GABA receptors
- b. They block transaminase therefore increasing GABA
- c. Glutamate inhibition
- d. **Bind to GABA receptor complex which in turn releases chloride ions, hyperpolarising the neuron cell membrane**
- e. They are transaminase blockers and glutamate inhibitors

**34. What is most important pathogenesis of severe emphysema?**

- a. TH2 cytokine response
- b. CD8+ T cell activation
- c. Oxidative stress causing damage from free radicals
- d. **Increased levels of matrix metalloproteinases**
- e. Decreased levels of epithelial antiproteases

**35. The image below is an axial CT scan of the abdomen, which is within normal limits.**

**Identify each of the normal structures labelled 1 to 5 in the image by selecting from the list of alternatives provided.**



- a. Abdominal aorta
- b. Spleen
- c. IVC
- d. Descending colon
- e. Superior mesenteric artery
- f. Sigmoid colon
- g. Splenic flexure of colon
- h. Caudate lobe of liver
- i. Gall bladder
- j. Medulla of the left kidney

**Answer:** 1. Abdominal aorta (a), 2. Medulla of the left kidney (j), 3. Gall bladder (i),  
4. Superior mesenteric artery (e), 5. Descending colon (d)

**36. 26 year old man presented to ED after trauma to chest from football. Subsequently he was in respiratory distress. Which of the following clinical findings are suggestive of pneumothorax?**

- a. Central cyanosis
- b. Tachypnoea
- c. Decreased chest expansion
- d. Decreased breath sounds
- e. Increased percussion note

**37. Which of the following antibiotic targets is most likely to result in serious side effects following administration of such an antibiotic?**

- a. Cell membrane
- b. Cell wall
- c. DNA
- d. Protein synthesis
- e. Folic acid synthesis

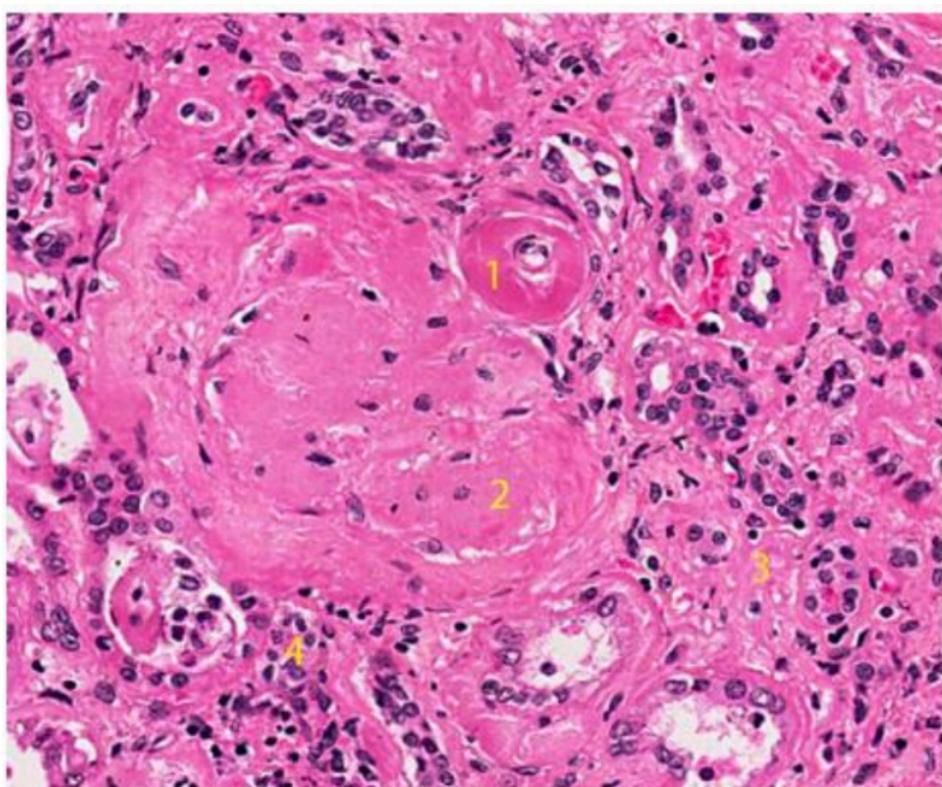
**38. Which ONE of the following pharmacokinetic parameters is MOST affected by aging?**

- a. Bioavailability
- b. Formation of active metabolites
- c. Liver clearance
- d. Renal clearance
- e. Volume of distribution

**39. A 68 year old woman presents with back pain localised to the thoracic area, which one of these is most likely to confirm osteoporosis?**

- a. Serum calcium
- b. Serum vitamin D
- c. Bone densiometry
- d. Radionucleotide labelling
- e. X-ray

**40. A 44 year old man with a 30 year history of poorly controlled type 1 diabetes. A renal biopsy was taken. Identify the features in this slide.**



- a. Glomerulosclerosis
- b. Fibrosis
- c. Infiltrating neutrophils
- d. Lymphocytes
- e. Hyaline arteriosclerosis
- f. Amyloid deposition

- 1) Hyaline arteriosclerosis (a)
- 2) Glomerulosclerosis (g)
- 3) Amylin Deposition (d)
- 4) Lymphocytic infiltrate (e)

**41. Which of the following best indicates inflammatory arthritis?**

- a. Psoriasis over the joint
- b. Crepitus
- c. **Boggy soft tissue swelling**
- d. Arthralgia
- e. Muscle wasting

**42. 25 year-old female who is 14 weeks pregnant, presents with symptoms of acute cystitis. Which antibiotic is contraindicated?**

- a. Augmentin
- b. Trimethoprim
- c. Nitrofurantoin
- d. Cephalexin
- e. Erythromycin

**43. All of the following are typical features of acute lymphoblastic leukemia, EXCEPT:**

- a. Neutropenia
- b. Anaemia
- c. Thrombocytopenia
- d. Massive splenomegaly
- e. Blasts in the peripheral smear

**44. 56 year-old woman with a past history of mitral valve regurgitation presents with palpitations and dyspnoea. O/E had irregular pulse and signs of congestive heart failure. ECG confirmed atrial fibrillation. she would have all the following signs EXCEPT:**

- a. Split second heart sound on inspiration
- b. Soft first/second heart sound
- c. Third heart sound
- d. Fourth heart sound
- e. Pansystolic murmur best heard at the apex

**45. What antibiotic is associated with ototoxicity and nephrotoxicity?**

- a. Penicillin G
- b. Erythromycin
- c. Ceftriaxone
- d. Gentamicin
- e. Penicillin V

## 2014 Memorandum

### 1. Question

- a. Styloid process
- b. Masseter muscle
- c. Vertebral foramen
- d. Vertebral canal
- e. Sternomastoid muscle
- f. Lateral mass of axis
- g. Odontoid process of axis
- h. Medial pterygoid plate
- i. Spinal cord

Answer: 1. Masseter, 2. Vertebral Foramen, 3. Odontoid process of axis, 4. Lateral mass, 5. Styloid process

### 2. 55 year old woman with type 2 Diabetes Mellitus presents with chronic ulcer on the sole of the right foot overlying head of 1<sup>st</sup> metatarsal bone Question about likely mechanism of ulcer on 1<sup>st</sup> MTP in a diabetic.

- a. Microvascular disease
- b. Macrovascular disease
- c. Peripheral neuropathy
- d. Arthropathy
- e. Osteomyelitis

### 3. They have now started offering the HPV vaccine to school aged boys. What is the most correct about this program

- a. Despite it having no benefit for boys it is justified given that it helps the greater population
- b. It is not "just" a public health policy because it doesn't address those who are worst affected
- c. The benefits outweigh the costs as it is anticipated to reduce HPV-related cancer rates
- d. It is justified because it will eradicate cervical cancer
- e. It is an example, like all forms of vaccination, of when non-maleficence outweighs autonomy and justice

- 4. A 77 year-old man with a history of prostatic enlargement presented with fever and loin pain. Physical examination revealed a fever of 39°C and right loin tenderness. A provisional diagnosis was made of pyelonephritis. Which ONE of the following laboratory findings is MOST CONSISTENT with the presence of a urinary tract infection?**
- a. Neutrophils  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of *Escherichia coli*/L
  - b. Lymphocytes  $>10 \times 10^6/\text{mL}$ , isolation of  $> 10^6$  colony forming units (CFU) of *Escherichia coli*/L
  - c. Neutrophils  $10 \times 10^5/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of *Escherichia coli* and *Proteus vulgaris*/L
  - d. Lymphocytes  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of *Escherichia coli*/L
  - e. Neutrophils  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^6$  colony forming units (CFU) of *Escherichia coli*/L
- 5. In relation to the above case, which one of the following empirical therapies is most appropriate?**
- a. Gentamicin IV
  - b. Ceftriaxone IV plus Ampicillin IV
  - c. Gentamicin IV plus Ceftriaxone IV
  - d. Gentamicin IV plus Ampicillin IV
  - e. Ceftriaxone IV plus Flucloxacillin IV
- 6. Which one of the following best explains airflow obstruction in COPD?**
- a. Bronchial mucous gland hypertrophy/hyperplasia
  - b. Increased airway smooth muscle mass
  - c. Bronchiolar inflammation and fibrosis
  - d. Mucous plugging of small airways
  - e. Alveolar destruction
- 7. Regarding antithrombotic therapy which of the following is true?**
- a. Warfarin inhibits Vitamin K carboxylase
  - b. Aspirin prevents fibrin binding to integrin alpha 2 B beta 3
  - c. Dipyridamole inhibits phosphodiesterase increasing levels of intracellular cAMP
  - d. Clopidogrel inhibits production of thromboxane A2 preventing platelet activation
- 8. Which option describing the effect of exercise on cancer risk is MOST CORRECT:**
- a. Colon cancer incidence is reduced
  - b. Breast cancer incidence is slightly increased
  - c. Prostate cancer incidence is reduced
  - d. Endometrial cancer is slightly increased
  - e. Stomach cancer incidence is reduced

**9. Scientists investigate outbreaks by plotting on endemic curves. Which one best describes a common source outbreak?**

- a. Cases exposed to a person with disease
- b. Cases exposed to an intermittent source over time**
- c. Cases exposed to a single source within one incubation period
- d. Cases exposed to multiple sources over time
- e. Cases exposed to multiple sources over many outbreaks

**10. In a RCT studying the effectiveness of high dose Vitamin D treatment in prevention of hip fracture in patients with diagnosed osteoporosis, the absolute risk of hip fracture in the intervention group taking Vitamin D treatment was  $21/1345=1.6\%$ . The absolute risk of hip fracture in the control group (no treatment) was  $24/1341=1.8\%$ . According to this study, what is the appropriate number needed to treat (NNT) for Vitamin D treatment in the prevention of hip fracture?**

- a. 0.2
- b. 5
- c. 20
- d. 50
- e. 500**

**11. Scratching the lower back tests which glenohumeral action?**

- a. Abduction in the plane of the scapula
- b. Flexion
- c. Protraction
- d. Circumduction
- e. Medial rotation**

**12. What is likely to be the first detectable clinical sign of haematological compromise following haemorrhage?**

- a. Tachycardia**
- b. Decreased pulse pressure
- c. Decreased urine output
- d. Decreased central venous pressure
- e. Hypotension

**13. Elderly man comes in with a stroke and severe comorbidities. Barely able to respond. You're the RMO and have been asked to get a DNR order from his family. You've been unable to, as the relatives usually come in after hours. It's now a Friday afternoon and they want you to write a DNR order to be put into his file just in case the needs arises during the weekend. What would you do?**

- a. Go talk the patient about the DNR and be relieved that he does not respond and then you write the DNR
- b. It is unfair for the weekend staff to deal with such issues
- c. Acknowledge that you are unable to write the order and that you make a mental note that you would not do such thing in the future
- d. Try to speak to the patient and get no response. Write a note in the file that this must be discussed with the next of kin when they come, even if it means involving the after hour medical staff**
- e. Try to speak to the patient and get no response.

**14. Regarding pertussis/whooping cough, which is “true”**

- a. Causes leucocytosis predominately of neutrophils
- b. Clinical diagnosis usually achieved within 1st few days of symptom development
- c. The causative organism can be isolated within 1 week of developing symptoms
- d. If people are vaccinated during childhood they generally have lifelong immunity**
- e. The causative organism can be cultured on sheep blood agar**

**15. The following features are present in ARDS except:**

- a. Hyaline membrane formation
- b. Airway obstruction**
- c. Atelactasis
- d. Injury and destruction of the alveolar epithelium
- e. Decreased lung compliance

**16. Regarding alcohol and drugs of addiction, which one of the following is true:**

- a. Sensitisation from repeated use mostly occurs with cannabinoids
- b. Topiramate is used for cocaine because it inhibits GABA neurotransmission
- c. Disulfiram blocks alcohol dehydrogenase
- d. Naltrexone is used for alcohol because it reduces alcohol induced reward**
- e. Clonidine is used for nicotine because it reduced withdrawal symptoms

**17. Young adult diagnosed with amblyopia, what is the most likely aetiology?**

- a. X chromosome mutation affecting 1 of the cone photoreceptor
- b. Wearing eye patch for 3 weeks due to recent eye injury
- c. Previously undiagnosed astigmatism due to corneal malformation**
- d. Night blindness due to retinitis pigmentosa
- e. Retinal detachment following bungee jumping

**18. What would be the reason for an artificial increase in case of an outbreak?**

- a. Change in lab protocols
- b. Population increase
- c. Random variation
- d. Population more susceptible

**19. A paediatrician formulated a simple screening test for croup. An independent blind comparison to gold std for croup on 200 patients with respiratory symptoms. 50 cases found with gold standard. Of the cases that were positive, 35 were found on the new screening test. Of those that did not have the disease, 30 were found to be positive on screening.**

- a. Sensitivity 80%
- b. Specificity 70%
- c. PPV 35%
- d. NPV 89%
- e. Prevalence 15%

**20. Which of these is true regarding the anterior cruciate ligament?**

- a. It is accompanied by the meniscofemoral ligament
- b. It limits anterior displacement of the tibia on the femur
- c. It attaches to the anterior intercondylar eminence
- d. It attaches to the posterior intercondylar eminence
- e. It attaches to the medial femoral condyle

**21. A 25 year old women has bloods taken during her ovulation. What would be the MOST LIKELY hormone results?**

- a. Increased Oestrodial, Increased FSH.
- b. Increased Oestrodial, Decreased LH.
- c. Increased Progesesterone, Increased LH.
- d. Increased Progesterone, Decreased LH,
- e. Increased Oestrodial, Increased LH

**22. A 25yo female is 14 weeks pregnant and presents with symptoms of cystitis. Which of the following is contraindicated?**

- a. Augmentin
- b. Trimethoprim
- c. Cephalexin
- d. Nitrofurantoin
- e. Erythromycin

**23. A man with pancreatic cancer underwent surgery. 3 days later he died suddenly of a massive saddle embolus in his pulmonary trunk. Autopsy revealed that his lungs appeared normal macroscopically. How can this be explained?**

- a. The lungs have a dual arterial supply.
- b. It was too early for necrosis to occur during life.
- c. Infarction was seen microscopically

**24. All of the following are adverse effects of SSRIs except?**

- a. Sexual dysfunction
- b. Nausea
- c. Weight gain
- d. Headaches when consume certain types of food**
- e. Sleep disorder/insomnia

**25. Regarding regular High Intensity Intermittent Exercise (HIIE) performed by overweight women on a bicycle for at least 3 months, which one of the following statements is most correct?**

- a. It significantly increases leg muscle mass
- b. It results in no change in anaerobic capacity after 3 months
- c. It results in less fat loss than regular steady state exercise on a bicycle
- d. It results in no change in maximum oxygen uptake after 3 months
- e. It results in a significant increase in insulin sensitivity after 3 months**

**26. A series of cases of salmonella are diagnosed within a small town. The local Public Health Unit designs a questionnaire that is distributed to all individuals with laboratory confirmed infection about their food exposures, the questionnaire was also sent to a group of well individuals from the town. Which of the following options best fits the study method was used?**

- a. Case control**
- b. Case series
- c. Retrospective cohort study
- d. Prospective cohort study
- e. RCT

**27. When the eye is abducted, which of the following elevates the eye?**

- a. Superior rectus**
- b. Superior oblique
- c. Inferior oblique
- d. Superior rectus and superior oblique
- e. Superior rectus and inferior oblique

**28. A 67 yo lady presents with 48 hour history of cramps in the perumbilical region.**

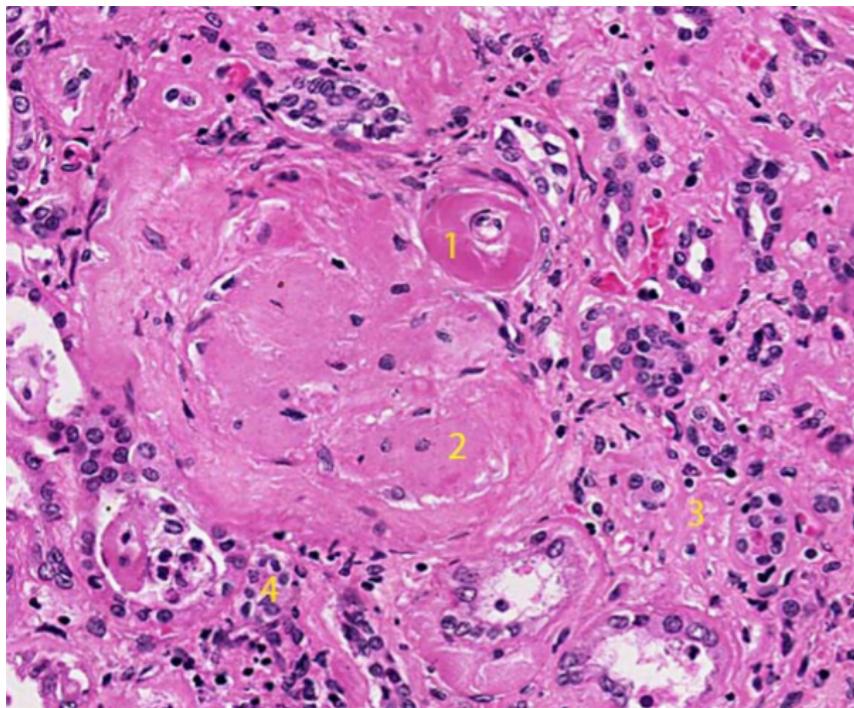
**No signs of local or generalised peritonitis. The most likely cause is:**

- a. Biliary colic
- b. Large bowel obstruction**
- c. Small bowel ischemia
- d. Perforated Viscus
- e. Peptic ulcer

**29. A 19 year old presents to your clinic after travelling to Vanuatu and is diagnosed with Falciparum malaria. All factors are important in determining drug therapy for the patient EXCEPT**

- a. History of travel to Vanuatu
- b. Drug allergy
- c. Degree of parasitaemia
- d. Presence of thrombocytopenia**
- e. Malaria chemoprophylaxis

**46. The high-power photomicrograph shown below was obtained from renal biopsy in a 44-year-old man with a 30-year history of poorly controlled Type 1 diabetes mellitus. Identify the features labelled 1 to 4.**



- a. Glomerulosclerosis
- b. Neutrophils
- c. Amyloid deposition
- d. Hyaline arteriosclerosis

**Answer:** 1. Hyaline arteriosclerosis (d), 2. Glomerulosclerosis (a), 3. Amyloid deposition (c), 4. Neutrophils (b)

**30. Omeprazole and rabeprazole are NOT used for treatment of which of the following?**

- a. Erosive gastritis
- b. Oesophageal reflux
- c. Irritable bowel syndrome
- d. Peptic ulcer disease
- e. Zollinger-Ellison Syndrome

**31. Which of these is NOT a finding you would expect in a healthy woman of 20 week gestation, compared to her non pregnant state?**

- a. Reduced haemoglobin concentration
- b. Reduced red cell mass
- c. Reduced albumin concentration
- d. Reduced serum creatinine
- e. Increased plasma volume

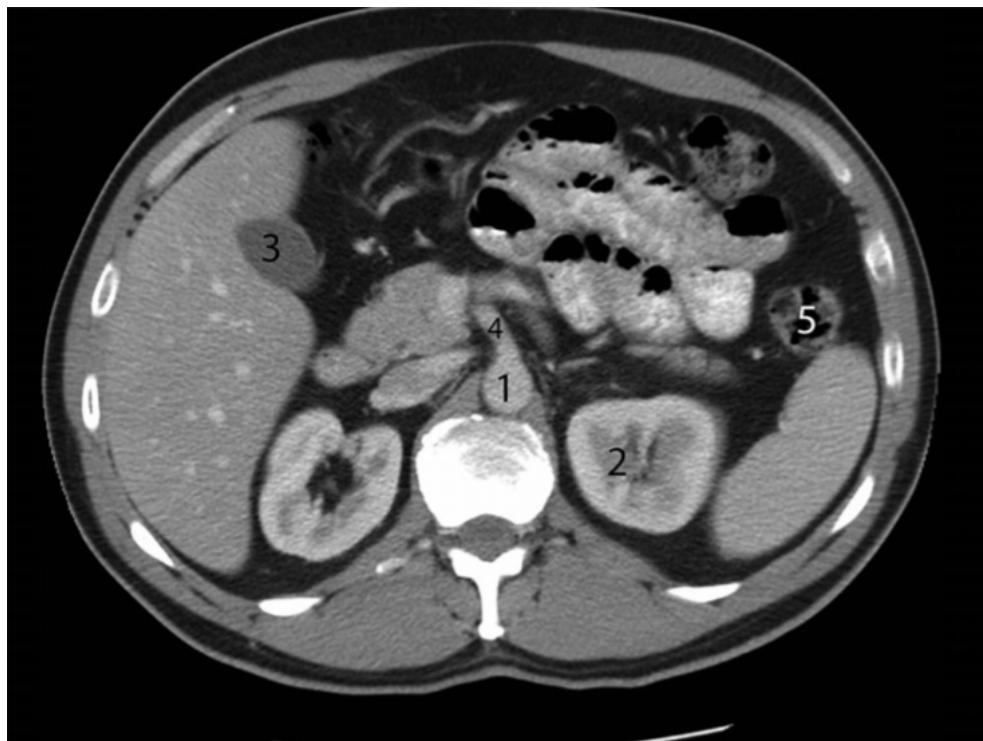
**32. Which one of the following about carcinoma of the prostate is most likely?**

- a. It occurs on a background of nodular hyperplasia of the prostate
- b. It commonly presents with urinary outflow obstruction
- c. Its diagnosis is assisted by alpha-fetal protein in the serum
- d. Biopsy shows transitional cell carcinoma
- e. Histopathological grading is of value in prognosis

**33. Which of the following regarding infectious mononucleosis is true?**

- a. Infectious mononucleosis can be treated with ampicillin
- b. Infectious mononucleosis is most common in pre-school children
- c. Infectious mononucleosis can be transmitted via faecal-oral route
- d. Infectious mononucleosis can be diagnosed via heterophile antibodies
- e. Infectious mononucleosis presents with a rash

**34. The image below is an axial CT scan of the abdomen, which is within normal limits. Identify each of the normal structures labelled 1 to 5 in the image by selecting from the list of alternatives provided.**



- a. Abdominal aorta
- b. Spleen
- c. IVC
- d. Descending colon
- e. Superior mesenteric artery
- f. Sigmoid colon
- g. Splenic flexure of colon
- h. Caudate lobe of liver
- i. Gall bladder
- j. Medulla of the left kidney

**Answer:** 1. Abdominal aorta (a), 2. Medulla of the left kidney (j), 3. Gall bladder (i),  
4. Superior mesenteric artery (e), 5. Descending colon (d)

**35. Which ONE of the following is the best method for daily monitoring of fluid balance in a patient with advanced stage chronic kidney disease?**

- a. Weight
- b. Skin turgor
- c. Ankle swelling
- d. Blood pressure
- e. Jugular venous pressure

**36. Female presents with painless labial ulcers and inguinal lymphadenopathy. What is the most likely causative agent?**

- a. Trichomonas vaginalis
- b. Gonorrhoea
- c. Chlamydia
- d. Herpes Simplex 2
- e. Treponema pallidum

**37. Which of these is NOT present in Rheumatoid Arthritis?**

- a. Synovial hyperplasia
- b. Destruction of articular cartilage by neutrophils
- c. Angiogenesis
- d. Infiltration of synovium by monocytes & lymphocytes
- e. Activation of macrophages by IL-1 and TNF

**38. Which ONE of the following is contraindicated in glaucoma**

- a. Anticholinergics
- b. Prostaglandin F2 alpha agonist
- c. Carbonic anhydrase inhibitor
- d. Alpha 2 adrenoreceptor agonist
- e. Parasympathomimetics

**39. A 30 yr old woman who has been using COCP for 12 years presents to your clinic to discuss her risk of breast cancer. She has recently been diagnosed with a benign breast cyst, and her aunt on her father's side had breast cancer at the age of 60. Which of the following would you recommend?**

- a. Normal/slightly increased risk, and should commence regular screening via mammogram at age 40
- b. Normal/slightly increased risk, and should commence regular screening via mammogram at age 50
- c. Moderately increased risk, should commence regular screening via mammography now
- d. Moderately increased risk, should commence regular screening via ultrasound now
- e. Highly increased risk, should commence have an ultrasound and mammography now

**40. Young man has a wound infected with penicillinase-resistant staph aureus, which antibiotic therapy would you give him.**

- a. Amoxicillin
- b. Vancomycin
- c. Ceftriaxone
- d. Flucloxacillin
- e. Clavulanic acid

**41. Infliximab is used in IBD and other autoimmune diseases. What is it?**

- a. Aminosalicylic acid inhibitor
- b. Immunosuppressant
- c. Corticosteroid
- d. TNF alpha inhibitor

**42. The following statements regarding the treatment of schizophrenia are true, EXCEPT:**

- a. Some adverse effects are linked to muscarinic antagonism
- b. Atypical agents are linked to weight gain and diabetes
- c. The efficacy of anti-schizophrenic agents correlate to D1 receptor blockade
- d. Movement disorders can emerge from chronic treatment using antipsychotics
- e. Newer agents have an affinity for serotonin (5HT)

**43. A 67 year old man with fatigue, weight loss of 10 kg in past 2 months. Iron studies show anaemia, decreased iron, decreased MCH, ferritin increased, TIBC increased (other parameters normal). Cause for anaemia?**

- a. Pernicious anaemia
- b. Inflammatory anaemia
- c. Bleeding
- d. Iron deficiency anaemia
- e. Myelodysplasia

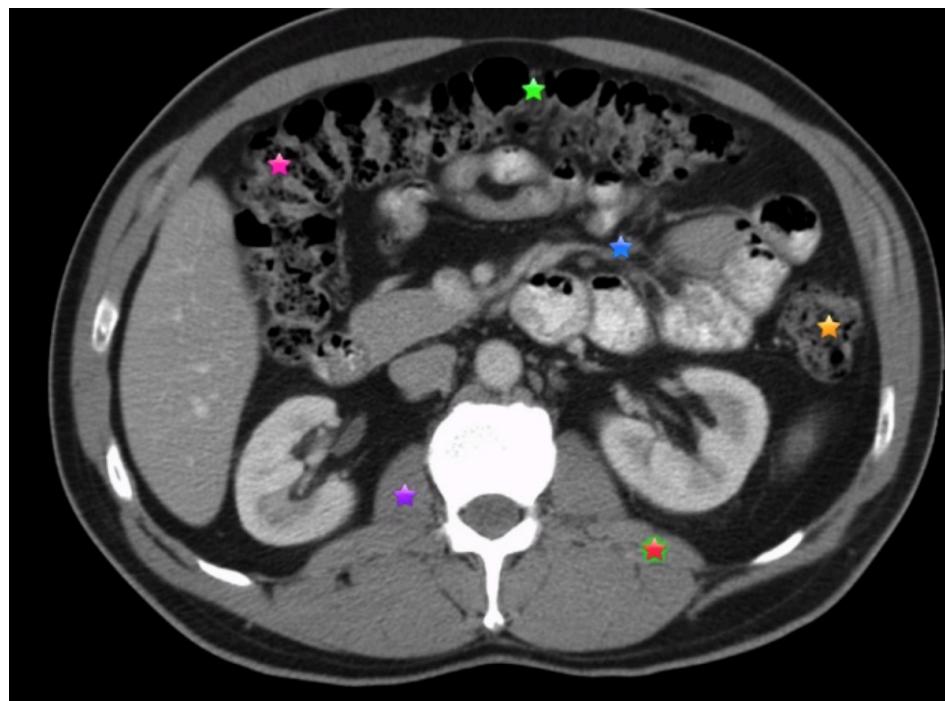
**44. An 11 y.o. girl presents with 24hr fever, lethargy etc. Which CSF abnormalities most consistent with bacterial meningitis.**

- a. Increased polymorphonuclear cells, increased glucose, increased protein
- b. Increased mononuclear cells, decreased glucose, increased protein
- c. Increased polymorphonuclear cells, increased glucose, decreased protein
- d. Increased polymorphonuclear cells, decreased glucose, increased protein
- e. Increased mononuclear cells, increased glucose, decreased protein

**45. Regarding infective endocarditis, which of the following is MOST CORRECT?**

- a. Previous valvular damage is essential
- b. Most common is Enterococcus faecum
- c. Staph aureus is common in people with colon neoplasms
- d. Commonly caused by staph epidermidis in patients with heart valve transplants
- e. Commonly caused by strep viridans in IDUs

**46. Abdo CT question II: Label the following CT. Options were:**



- a. Ascending colon
- b. Mesentery
- c. Descending colon
- d. Transverse colon
- e. Internal oblique
- f. External oblique
- g. Psoas major
- h. Quadratus lumborum
- i. IVC
- j. Abdominal aorta

Red star: Quadratus lumborum (h)

Orange star: Descending colon (c)

Purple star: Psoas major (g)

Green star: Transverse colon (d)

Blue star: mesentery (b)

**47. Regarding impetigo in the Aboriginal population, which of the following is most correct:**

- a. *Staph aureus* is the most common organism involved
- b. It mainly occurs in young adults
- c. It does not involve the dermis
- d. It predisposes to scabies
- e. It is clinically diagnosed by the presence of annular lesions

**48. Regarding Hodgkin lymphoma, which one of the following best describes the typical changes in lymph nodes?**

- a. There is diffuse replacement of normal lymphoid tissue
- b. The predominant cellular pattern is of follicular aggregates of precursor B cells
- c. Multinucleate giant cells with abnormal nuclei are widespread
- d. Extensive necrosis is prominent
- e. Bands of fibrosis are prominent

**49. Which of the following does NOT contribute to the development of **shock** in acute pancreatitis?**

- a. Decreased microvascular permeability
- b. Endotoxemia
- c. Enzymatic fat necrosis.
- d. Widespread vascular permeability
- e. Haemorrhage

**50. What is most correct regarding cyclosporin and tacrolimus in organ transplant?**

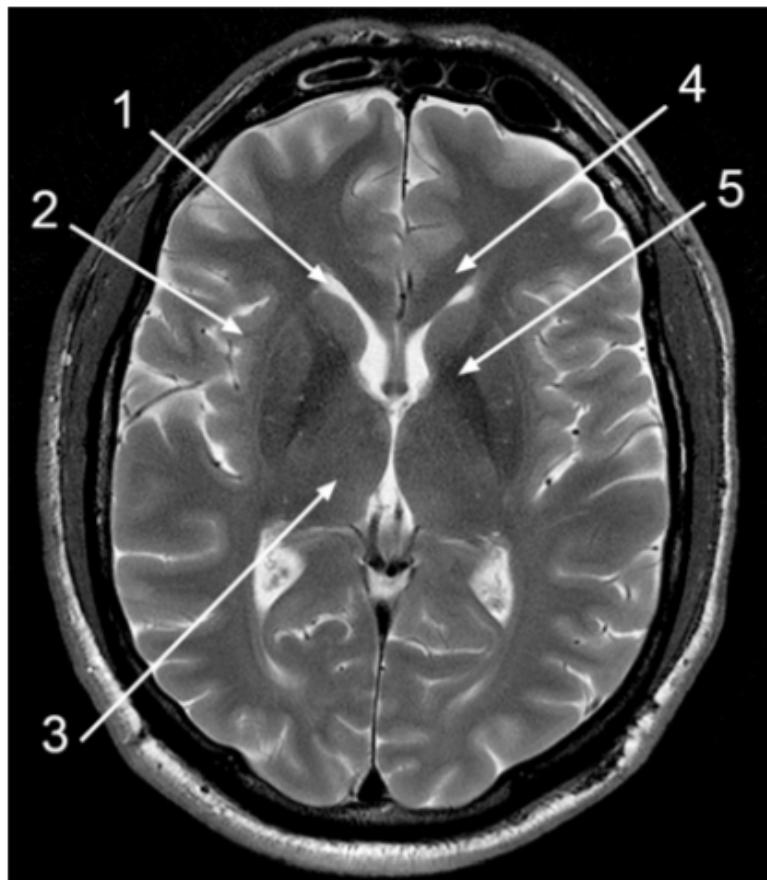
- a. It prevents Graft versus host disease
- b. Inhibits antibody production by host B lymphocytes
- c. Supresses host T-cell response by selectively antagonising IL-2 gene expression
- d. Selectively toxic to host T-cells
- e. Down regulates MHC-receptors on graft tissue

**51. A 56 year-old woman with a past history of mitral valve regurgitation presents with palpitations and dyspnoea. O/E had irregular pulse and signs of congestive heart failure. ECG confirmed atrial fibrillation. she would have all the following signs EXCEPT:**

- a. Split second heart sound on inspiration
- b. Soft first/second hear sound
- c. Third heart sound
- d. Fourth heart sound
- e. Pansystolic murmur best heard at the apex

## 2015 Memorandum

1. Below is an axial MRI of the brain, which is within normal limits. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.



- a. Genu of the internal capsule
- b. Insula
- c. Corpus callosum
- d. Anterior horn of the lateral ventricle
- e. Thalamus

Answer: 1. Anterior horn of the lateral ventricle (d), 2. Insula (b), 3. Thalamus (e), 4. Corpus callosum (c), 5. Genu of the internal capsule (a)

2. A 56-year-old woman with long-standing mitral valve regurgitation presents with palpitations and dyspnoea. On examination her pulse is irregular, and she has signs of congestive cardiac failure. An ECG confirms atrial fibrillation. All of the following cardiac auscultatory findings would be expected in this woman, EXCEPT:
- a. Split second heart sound on inspiration
  - b. Soft first heart sound
  - c. Third heart sound
  - d. Fourth heart sound
  - e. Pan-systolic murmur at the cardiac apex

**3. Confidentiality is protected by law and guided by ethics. Ethically, it would be MOST CORRECT to say that confidentiality is a manifestation of:**

- a. The principle of beneficence; doing good or the right thing for the patient is better than taking risks by sharing their information
- b. The principle of respect for persons because it involves engendering and maintaining trust, respecting the dignity of a person, and their decision about who to disclose information to
- c. The principle of non-maleficence because disclosing information leads to harms
- d. The principle of justice because professionals and institutions need to protect themselves against litigation
- e. The principle of autonomy because health information cannot be disclosed to third parties

**4. In relation to bacterial meningitis in a person with a previous fracture of the base of the skull, if a Gram stain of the CSF shows the presence of Gram-positive diplococci, which ONE of the following EMPIRICAL therapies would be MOST APPROPRIATE?**

- a. IV Ceftriaxone plus IV Vancomycin
- b. IV Gentamicin
- c. IV Ceftriaxone plus IV Gentamicin
- d. IV Ceftriaxone
- e. IV Gentamicin plus IV Vancomycin

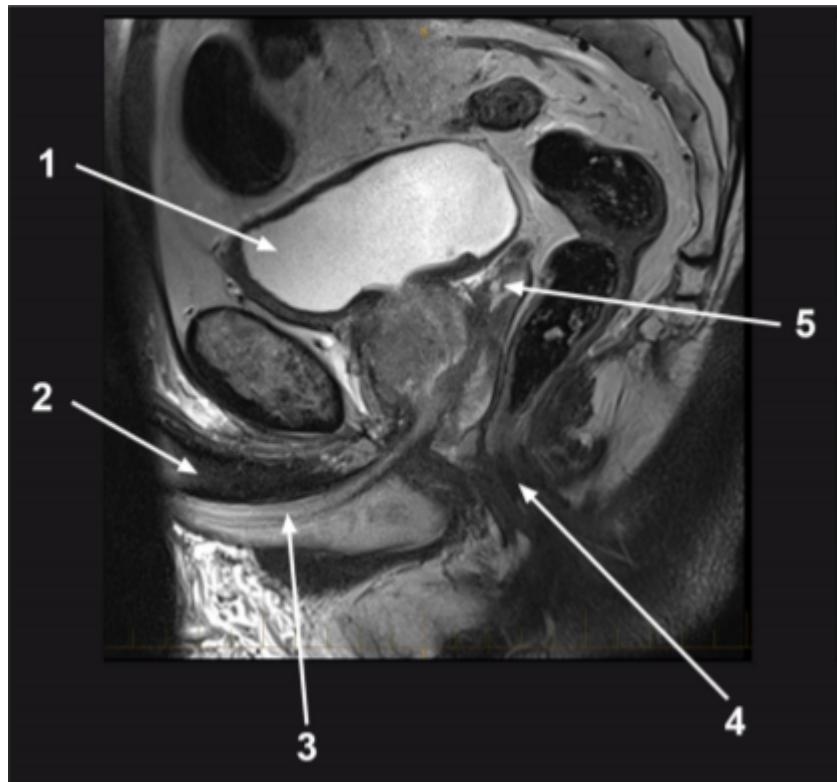
**5. Regarding the macroscopic image shown below, which ONE of the following statements is MOST CORRECT?**



- a. The lesion appears benign
- b. The lesion appears to be arising from the mucosa of the small intestine
- c. The lesion is most often associated with mutations in the H-RAS tumour suppressor gene
- d. The lesion is associated with migratory thrombophlebitis
- e. The lesion is unlikely to cause jaundice

- 6. Caution should be taken with the unilateral use of latanoprost to treat glaucoma, because it can result in all of the following adverse effects, EXCEPT:**
- a. A permanent change in iris colour
  - b. Conjunctival hyperaemia
  - c. **Eyelid retraction**
  - d. Eyelash lengthening
  - e. Blurred vision
- 7. Excessive ingestion of fructose (fruit sugar) has negative effects on metabolic function because fructose:**
- a. Significantly raises blood sugar levels (compared to glucose)
  - b. Significantly raises blood insulin levels (compared to glucose)
  - c. **Increases postprandial blood triglyceride levels**
  - d. Increases leptin release thereby causing an increase in hunger
  - e. Depresses ghrelin release thereby causing an increase in hunger
- 8. A 46-year-old woman presents to her GP for a routine pap smear. She is well and has no significant past medical history. She mentions that her maternal aunt aged 78 years was recently diagnosed with stage III colorectal cancer. Which ONE of the following screening tests should be recommended?**
- a. Faecal occult blood test
  - b. Colonoscopy
  - c. **Fasting lipids**
  - d. Mammogram
  - e. Urinalysis
- 9. In an RCT studying the effectiveness of group Tai Chi exercise in prevention of hip fracture in patients with previous falls, the rate of hip fracture in the intervention group taking Tai Chi classes was  $11/1345 = 0.8\%$ . The rate of hip fracture in the control group (no exercise class) was  $24/1341 = 1.8\%$ . For this study, which ONE of the following figures is the approximate number needed to treat (NNT) for Tai Chi classes in prevention of hip fracture compared to the control?**
- a. 10,000
  - b. **100**
  - c. 25
  - d. 10
  - e. 1

**10.** Below is a sagittal MRI of the male pelvis, which shows a malignancy in the peripheral zone of the prostate gland. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.



- a. Anal canal
- b. Seminal vesicle
- c. Corpus spongiosum
- d. Bladder
- e. Spongy urethra

**Answer:** 1. Bladder (d), 2. Corpus spongiosum (c), 3. Spongy urethra (e), 4. Anal canal (a), 5. Seminal vesicle (b)

**11. A 67-year-old man presents with tiredness, anorexia and weight loss of greater than 10 kg over the past two months. His past health is unremarkable. Physical examination is normal. Results of investigations include:**

Hb 92g/L (130-180)  
MCV 82fL (80-100)  
MCH 26pg (27-32)  
Serum iron 8 $\mu$ mol/L (10-30)  
Serum ferritin 400 $\mu$ g/L (30-300)  
Total iron binding capacity 30 $\mu$ mol/L (45-80)

**Which ONE of the following is the MOST LIKELY cause of the anaemia?**

- a. Pernicious anaemia
- b. Anaemia of inflammation
- c. Haemolysis
- d. Iron deficiency
- e. Myelodysplasia

**12. The principles of public health ethics are not the same as those applied in a clinical context because public health involves many more disciplines and profession than medicine alone. In particular, public health is primarily concerned with the social determinants of health, health promotion, and the prevention of illness, injury, and premature death. In light of this, all of the following statements are correct in relation to public health ethics, EXCEPT:**

- a. It incorporates notions of care of the self, care for one's kin and close others, care for one's community, and even care for distant 'others'
- b. Individual autonomy of a patient must be ranked above all other considerations
- c. The principle of autonomy should be understood in terms of respect for persons, human dignity, and human rights
- d. The concept of 'harm' must be broadened to include social exclusion, stigma, victim blaming and labelling
- e. It is about balancing the material and moral needs of individuals with those of the community

**13. Which ONE of the following groups of three microbial genera is MOST COMMONLY associated with cutaneous mycoses?**

- a. Trichophyton, Epidermophyton and Mycobacteria
- b. Epidermophyton, Bacteroides and Microsporum
- c. Trichophyton, Mycoplasma and Epidermophyton
- d. Epidermophyton, Trichophyton and Microsporum
- e. Bacteroides, Trichophyton and Mycoplasma

**14. Regarding neoplasms, which ONE of the following statements is MOST CORRECT?**

- a. The parenchymal and stromal elements of a tumour are both derived from a single neoplastically transformed cell
- b. By definition, benign neoplasms do not kill the host
- c. Abnormal cellular differentiation is the defining characteristic of malignancy
- d. Malignant cachexia is the result of nutrient uptake by the tumour cell mass
- e. p53 can induce apoptosis of mutated cells

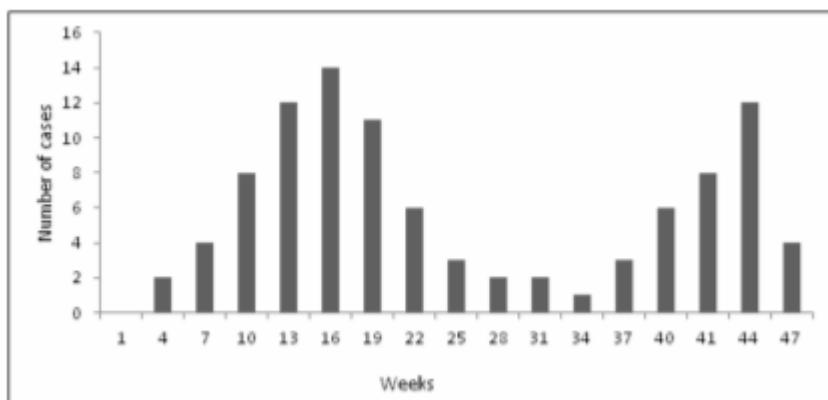
**15. Regarding molecules crossing the blood brain barrier, which ONE of the following statements is MOST CORRECT?**

- a. Peptides are able to cross the blood brain barrier via simple diffusion
- b. Insulin cannot cross the blood brain barrier
- c. Glucose can cross the blood brain barrier via specific transport proteins
- d. Large, hydrophilic molecules can readily cross the blood brain barrier
- e. Amino acids are able to cross the blood brain barrier via exocytosis

**16. Regarding the small neuron pathway (P pathway) and the large neuron pathway (M pathway) in the visual system, which ONE of the following statements is MOST CORRECT?**

- a. The M pathway signals colour
- b. The P pathway has low visual acuity
- c. The M and P pathways converge onto common neurons in the visual thalamus
- d. The M pathway may direct attention in the P pathway
- e. The M pathway projects from V1 to areas in the temporal lobe

**17. What type of outbreak is represented by the epidemic curve in the graph below?**

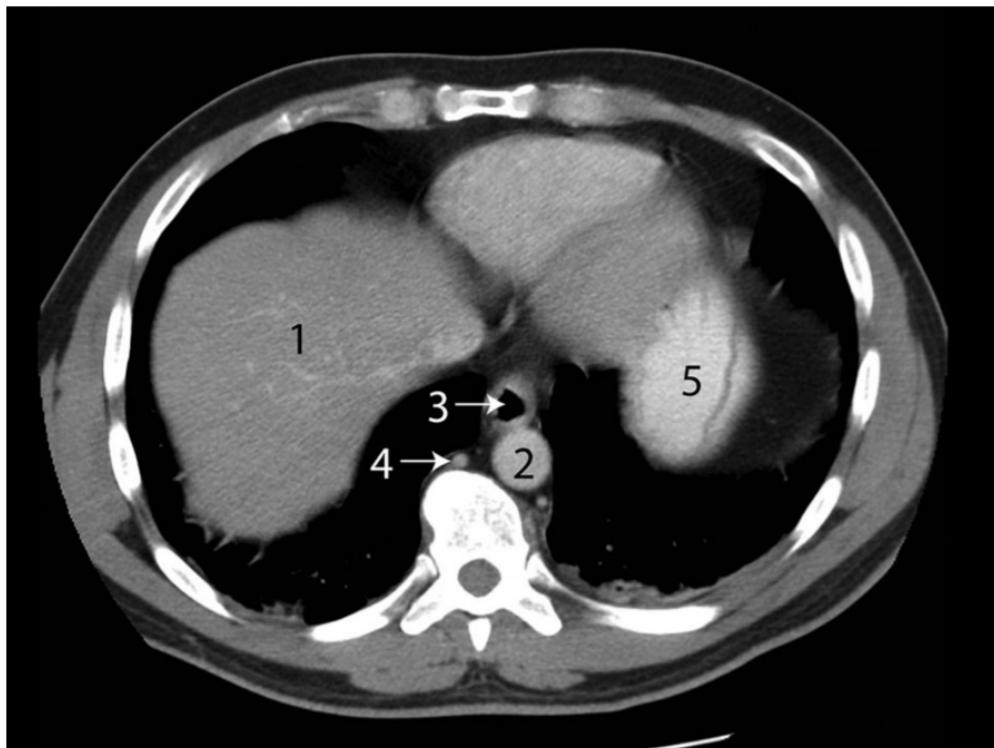


- a. Point source
- b. Intermittent common source
- c. Continuous common source
- d. Propagated
- e. The curve is not indicative of an outbreak

**18. A paediatrician devised a simple screening test for croup. An independent blind comparison was made with a gold standard for diagnosis of croup among 200 paediatric emergency patients with respiratory symptoms. Among the 50 emergency patients diagnosed with croup according to the gold standard, 35 patients tested positive with the new screening test. Among 150 patients found not to have croup according to the gold standard, 30 patients were found to be positive with the new screening test. Regarding the new screening test, which ONE of the following statements is MOST CORRECT?**

- a. The sensitivity was approximately 80%
- b. The specificity was approximately 70%
- c. The positive predictive value was approximately 35%
- d. The negative predictive value was approximately 89%
- e. The prevalence of croup was approximately 15%

**19. The axial CT scan of the abdomen shown below is within normal limits. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.**



- a. Abdominal aorta
- b. Azygous vein
- c. Body of stomach
- d. Fundus of stomach
- e. Inferior vena cava
- f. Hepatic vein
- g. Oesophagus
- h. Left lobe of liver
- i. Right lobe of liver
- j. Spleen

**Answer:** 1. Right lobe of liver (i) , 2. Abdominal aorta (a), 3. Oesophagus (g), 4. Azygos vein (b), 5. Stomach fundus (d)

**20. Which ONE of the following is the BEST METHOD for daily monitoring of fluid balance in a patient with advanced stage chronic kidney disease?**

- a. Weight
- b. Skin turgor
- c. Ankle swelling
- d. Blood pressure
- e. Jugular venous pressure

**21. Which ONE of the following antibiotic targets is MOST LIKELY to result in serious side effects following administration of such drugs?**

- a. Cell membrane
- b. DNA
- c. Protein synthesis
- d. Cell wall
- e. Folic acid synthesis

**22. Regarding adenocarcinoma of the prostate, which ONE of the following statements is MOST CORRECT?**

- a. Neoplastic glands are characteristically larger than normal glandular tissue
- b. Neoplastic glands only have one cell layer
- c. Urinary tract obstruction is an early clinical manifestation
- d. The diagnosis can be confirmed by elevated serum prostate-specific antigen
- e. Nodular prostatic hyperplasia is a major risk factor

**23. SSRIs are known to have all of the following adverse effects, EXCEPT:**

- a. Weight gain
- b. Headache in response to certain types of food
- c. Nausea
- d. Sexual dysfunction
- e. Sleep disturbance and insomnia

**24. All of the following are possible visual consequences of a stroke, EXCEPT:**

- a. Loss of vision in one half of the visual field, while vision in the other half of the field is preserved
- b. Loss of the ability to recognise familiar faces, while the ability to read is preserved
- c. Loss of the perception of object motion, while the ability to visually recognise objects is preserved
- d. Loss of the ability to distinguish red from green, while the ability to distinguish red from blue is preserved
- e. Loss of the ability to read, while the ability to visually detect movement is preserved

**25. In an outbreak investigation, which ONE of the following is the MOST COMMON cause for an ARTIFICIAL increase in cases**

- a. Changes in laboratory testing protocols
- b. An increase in the susceptibility of the population
- c. An increase in population size
- d. Changes in population characteristics
- e. Random variation

**26. The image below is an axial CT scan of the chest, which is within normal limits.**

**Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.**



- a. Left pulmonary artery
- b. Oesophagus
- c. Coronary sinus
- d. Pulmonary trunk
- e. Superior vena cava
- f. Subclavian artery
- g. Trachea
- h. Brachiocephalic trunk

**Answer:** 1. Superior vena cava (e), 2. Brachiocephalic trunk (h), 3. Pulmonary trunk (d), 4. Trachea (g), 5. Oesophagus (b)

**27. A 55-year-old woman with type 2 diabetes presents with a chronic ulcer on the sole of the right foot overlying the head of the 1st metatarsal bone. Which ONE of the following complications of diabetes is MOST LIKELY to be responsible for the ulcer?**

- a. Microvascular disease
- b. Macrovascular disease
- c. Peripheral neuropathy
- d. Arthropathy
- e. Osteomyelitis

**28. Which ONE of the following antibiotics is MOST APPROPRIATE for the treatment of infection with penicillinase-producing *Staphylococcus aureus*?**

- a. Amoxicillin
- b. **Flucloxacillin**
- c. Ticarcillin
- d. Vancomycin
- e. Clarithromycin

**29. All of the following factors might contribute to **hypotension** in acute pancreatitis, EXCEPT:**

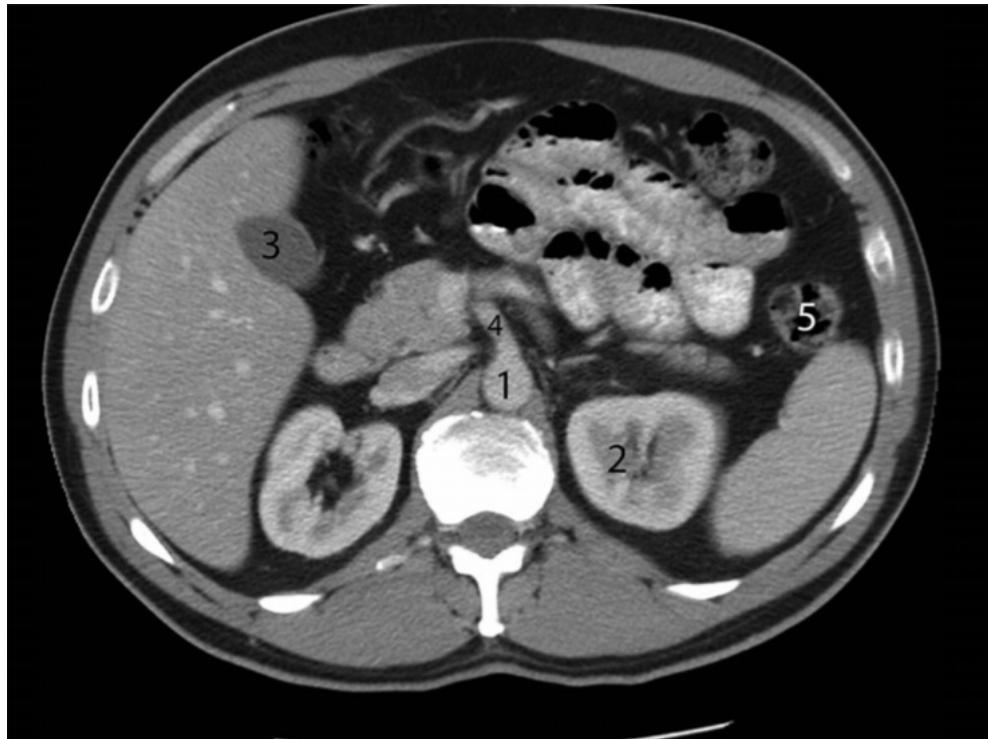
- a. Activation of the sympathetic nervous system
- b. Sepsis
- c. Third space loss of fluid due to paralytic ileus
- d. Haemorrhage due to release of elastase
- e. Exudation into the peritoneal cavity

**30. ACE inhibitors, such as enalapril, are used in the treatment of hypertension. These drugs lower blood pressure by inhibiting which ONE of the following actions?**

- a. The ability of noradrenaline to activate alpha-adrenoceptors on blood vessels
- b. **The production of angiotensin II**
- c. The re-absorption of sodium from renal tubules
- d. The ability of angiotensin II to bind to its receptors
- e. The action of renin on angiotensin II

**31. The image below is an axial CT scan of the abdomen, which is within normal limits.**

**Identify each of the normal structures labelled 1 to 5 in the image by selecting from the list of alternatives provided.**



- a. Superior mesenteric artery
- b. Hilum of the right kidney
- c. Abdominal aorta
- d. Inferior vena cava
- e. Hepatic flexure
- f. Descending colon
- g. Jejunum
- h. Gall bladder
- i. Medulla of the left kidney

Answer: 1. Abdominal aorta (c), 2. Medulla of the left kidney (i), 3. Gall bladder (h), 4.

Superior mesenteric artery (a), 5. Descending colon (f)

**32. Which ONE of the following is NOT a finding in a healthy pregnancy at 20 weeks gestation, when compared with the non-pregnant state?**

- a. Reduced haemoglobin concentration
- b. Reduced red cell mass
- c. Reduced albumin concentration
- d. Reduced serum creatinine
- e. Increased plasma volume

**33. Regarding trimethoprim, which ONE of the following statements is MOST CORRECT?**

- a. It is an analogue of P-aminobenzoic acid
- b. It competitively inhibits dihydrofolate reductase
- c. It has limited use because mammalian enzymes have the same affinity for the antibiotic as do bacterial enzymes
- d. It is effective against bacteria that require pre-formed folic acid as a growth factor
- e. It antagonises the action of sulphonamides

**34. A 55-year-old man presents with cough, productive of yellowish-white sputum, and breathlessness. He has been a smoker (approximately 20 cigarettes/day) for over 30 years and on further questioning acknowledges that his breathlessness has been present for "many months or even years" and has been getting steadily worse. Which ONE of the following mechanisms is MOST LIKELY to be underlying his dyspnoea?**

- a. Bronchospasm associated with eosinophilic inflammation in the bronchi
- b. Goblet cell hyperplasia with mucus plugging of the bronchi
- c. Chronic inflammation of the bronchi with mucous gland hypertrophy
- d. Peribronchiolar inflammation and fibrosis
- e. Progressive centriacinar destruction of alveolar walls

**35. Which ONE of the following statements regarding the pharmacological treatment of hypertension is MOST CORRECT?**

- a. Diuretics are first line therapy
- b. Beta-adrenoceptor antagonists are safe in asthmatic patients
- c. Angiotensin converting enzyme inhibitors may reduce blood potassium levels
- d. Spironolactone reduces sodium reabsorption in the loop of Henle
- e. Dihydropyridine calcium channel blockers such as nifedipine may lead to headache

**36. You are assisting at the repair of a direct inguinal hernia and notice that the surgeon is taking great care to protect the ilioinguinal nerve emerging from the superficial inguinal ring. Regarding this nerve, which ONE of the following statements is MOST CORRECT?**

- a. It supplies the skin of the lateral thigh
- b. It typically supplies the root of the penis and upper scrotum
- c. It is a branch of the sacral plexus
- d. It typically gives muscular branches to the sartorius
- e. It is typically formed by nerves from segments L2 and L3

**37. In a person with multiple injuries who has been brought to the Emergency Department, which ONE of the following signs is the EARLIEST detectable haemodynamic sign of haemorrhage?**

- a. Tachycardia
- b. Narrowed pulse pressure
- c. Decreased central venous pressure
- d. Decreased urinary output
- e. Hypotension

**38. Guillain-Barré syndrome is associated with infection caused by which ONE of the following gastrointestinal pathogens?**

- a. Salmonella typhi
- b. Salmonella typhinurium
- c. Shigella dysenteriae
- d. Vibrio cholerae
- e. Campylobacter jejuni

**39. All of the following are associated with Acute Respiratory Distress Syndrome (ARDS), EXCEPT:**

- a. Hyaline membrane formation
- b. Airflow obstruction
- c. Decreased lung compliance
- d. Alveolar epithelial injury
- e. Atelectasis

**40. Which ONE of the following mechanisms best describes the action of benzodiazepines such as diazepam?**

- a. They act as GABA receptor antagonists in the central nervous system
- b. They inhibit GABA transaminase leading to increased levels of GABA
- c. They block glutamate receptors in the central nervous system
- d. They facilitate GABA-mediated increases in chloride channel conductance
- e. They inhibit glutaminase and the production of glutamate

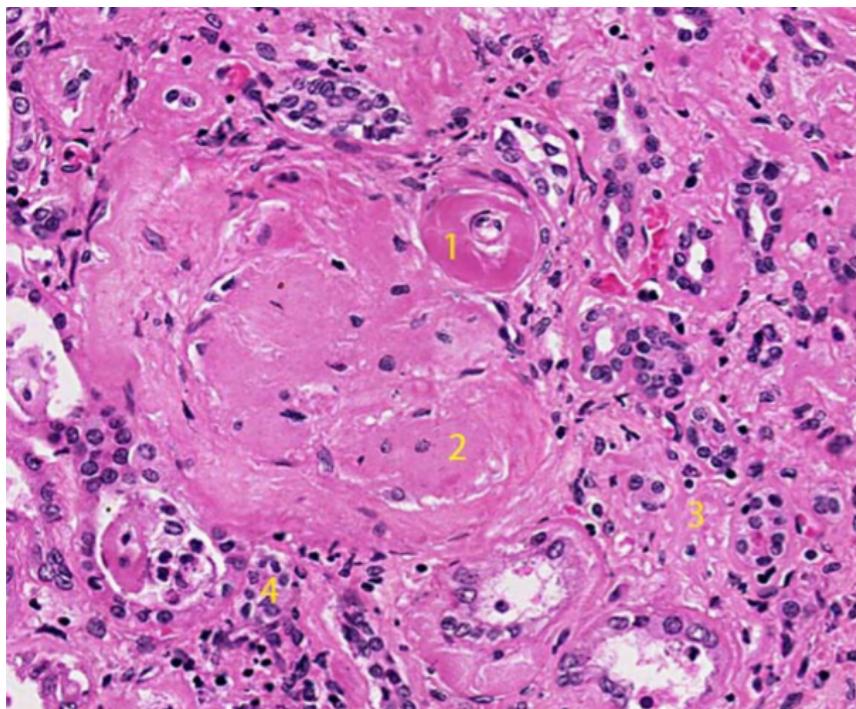
**41. A 25-year-old woman with normal menstrual cycles has blood collected at the time of ovulation for hormone tests. Which One of the following is the MOST LIKELY set of results?**

- a. Low oestradiol, high FSH
- b. High oestradiol, high FSH
- c. High progesterone, high LH
- d. High progesterone, low LH
- e. High oestradiol, high LH

**42. A 21-year-old woman presents to her GP with a 2-week history of **painful** ulcers on her labia. She has had unprotected intercourse with multiple partners since she was 15 years of age. Her physical examination showed the presence of labial ulcers and inguinal lymphadenopathy. Which ONE of the following organisms would be the **MOST LIKELY** causative agent?**

- a. Trichomonas vaginalis
- b. Chlamydia trachomatis
- c. Neisseria gonorrhoeae
- d. **Herpes simplex virus type 2**
- e. Treponema pallidum

**43. The high-power photomicrograph shown below was obtained from renal biopsy in a 44-year-old man with a 30-year history of poorly controlled Type 1 diabetes mellitus. Identify the features labelled 1 to 4.**



- a. Glomerulosclerosis
- b. Neutrophils
- c. Amyloid deposition
- d. Hyaline arteriosclerosis

**Answer: 1. Hyaline arteriosclerosis (d), 2. Glomerulosclerosis (a), 3. Amyloid deposition (c), 4. Neutrophils (b)**

**44. An elderly woman with dementia, hypothyroidism, osteoarthritis and type 2 diabetes mellitus is sent to hospital from a nursing home. Which ONE of the following sources would be MOST HELPFUL in constructing an accurate current medication list?**

- a. A GP referral produced from electronic prescribing software
- b. The woman's son
- c. A call to the community pharmacist
- d. Webster packs
- e. A letter from the duty nurse at the nursing home

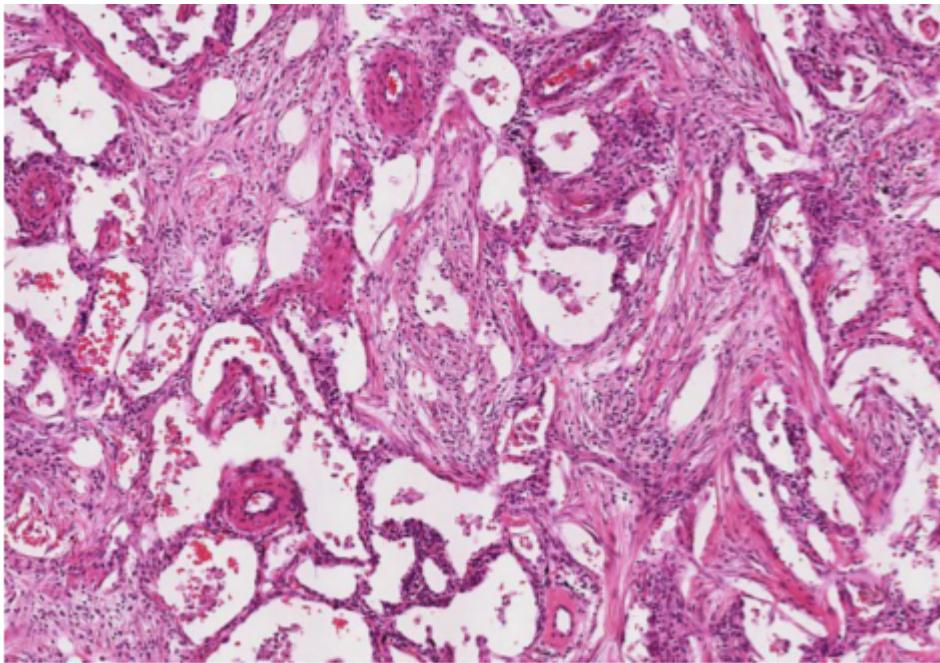
**45. A 75-year-old man presents to the Emergency Department with acute onset of shortness of breath followed by a syncopal episode. He was recently diagnosed with prostate cancer and underwent an open prostatectomy ten days ago. He has a past history of hypertension. Vital signs: T 37.6°C, PR 120/min, BP 95/65 mmHg, RR 20/min and O<sub>2</sub> saturation on room air 92%. Examination of the chest and cardiovascular system is normal. An ECG is performed. Which ONE of the following ECG findings is LEAST CONSISTENT with the acute presentation?**

- a. Right axis deviation
- b. Right bundle branch block
- c. Broad P waves
- d. Anterior T wave inversion
- e. S1 Q3 T3 pattern

**46. A 77-year-old man with a history of prostatic enlargement resented with fever and loin pain. Physical examination revealed a fever of 39°C and right loin tenderness. A provisional diagnosis was made of pyelonephritis. Which ONE of the following laboratory findings is MOST CONSISTENT with the presence of a urinary tract infection?**

- a. Neutrophils >100x10<sup>6</sup>/mL, isolation of > 10<sup>8</sup> colony forming units (CFU) of Escherichia coli/L
- b. Lymphocytes >10x10<sup>5</sup>/mL, isolation of > 10<sup>6</sup> colony forming units (CFU) of Escherichia coli/L
- c. Neutrophils 10x10<sup>5</sup>/mL, isolation of > 10<sup>8</sup> colony forming units (CFU) of Escherichia coli and Proteus vulgaris/L
- d. Lymphocytes >100x10<sup>6</sup>/mL, isolation of >10<sup>8</sup> colony forming units (CFU) of Escherichia coli/L
- e. Neutrophils >100x10<sup>6</sup>/mL, isolation of > 10<sup>6</sup> colony forming units (CFU) of Escherichia coli/L

**47. A 42-year-old man develops severe breathlessness over a period of 4 months. Chest X-ray and high-resolution CT scan of the thorax reveal predominantly basal and peripheral reticular opacities. Spirometry demonstrates decreased FEV1 and FVC but a normal FEV1/FVC ratio, with markedly decreased pulmonary compliance. A surgical lung biopsy was performed (representative image above). The clinical and investigative data are MOST CONSISTENT with:**



- a. Chronic bronchitis
- b. Emphysema
- c. Hypersensitivity pneumonitis
- d. Asbestosis
- e. Idiopathic pulmonary fibrosis

**48. Regarding the national Quality Use of Medicines policy, which ONE of the following statements is MOST CORRECT?**

- a. Consumers are central to the policy
- b. Community pharmacy input is more relevant than the pharmaceutical industry
- c. Product information found in MIMS is the basis for achieving quality use of medicines
- d. The key objective of the National Prescribing Service is to deliver savings on expenditure through the Pharmaceutical Benefits Scheme
- e. Herbal medicines are not covered by the policy

**49. Regarding impetigo in the Aboriginal population, which ONE of the following statements is MOST CORRECT?**

- a. It is most commonly caused by staphylococcus aureus
- b. It is most common in young adults
- c. It does not involve the dermis
- d. It predisposes to scabies
- e. Clinical diagnosis is based on the presence of annular lesions

**50. Which ONE of the following alternatives is the BEST EXPLANATION for the fact that screening programs have reduced the incidence of squamous cell carcinoma of the cervix?**

- a. Current vaccines cannot eliminate HPV from women already infected with the virus
- b. High-risk strains of HPV can be detected on cytological examination of a Pap smear
- c. Genital warts are a precursor to invasive carcinoma
- d. Adenocarcinoma of the cervix is becoming more common
- e. Invasive carcinoma is preceded by cervical intraepithelial neoplasia

**51. Cyclosporin and tacrolimus are critical to the favourable outcome of major organ transplant surgery BECAUSE:**

- a. They prevent graft versus host disease
- b. They selectively inhibit antibody production by host B lymphocytes
- c. They suppress the host T-cell response by selectively antagonising IL-2 gene expression
- d. They are selectively toxic to activated host T-cells
- e. They down-modulate MHC antigens on the transplanted tissue

**52. A 68-year old man is admitted to hospital with community-acquired pneumonia. He is very dyspnoeic and is bed-bound. His past history includes chronic airway disease and cardiac failure secondary to hypertension. Physical examination is consistent with these conditions. Initial investigations including full blood count and serum biochemistry are normal. Which ONE of the following is the MOST APPROPRIATE measure to prevent venous thromboembolism?**

- a. Graduated compression stockings
- b. Foot pump
- c. Low dose aspirin
- d. Low molecular weight heparin
- e. Warfarin

**53. Regarding infective endocarditis, which ONE of the following statements is MOST CORRECT?**

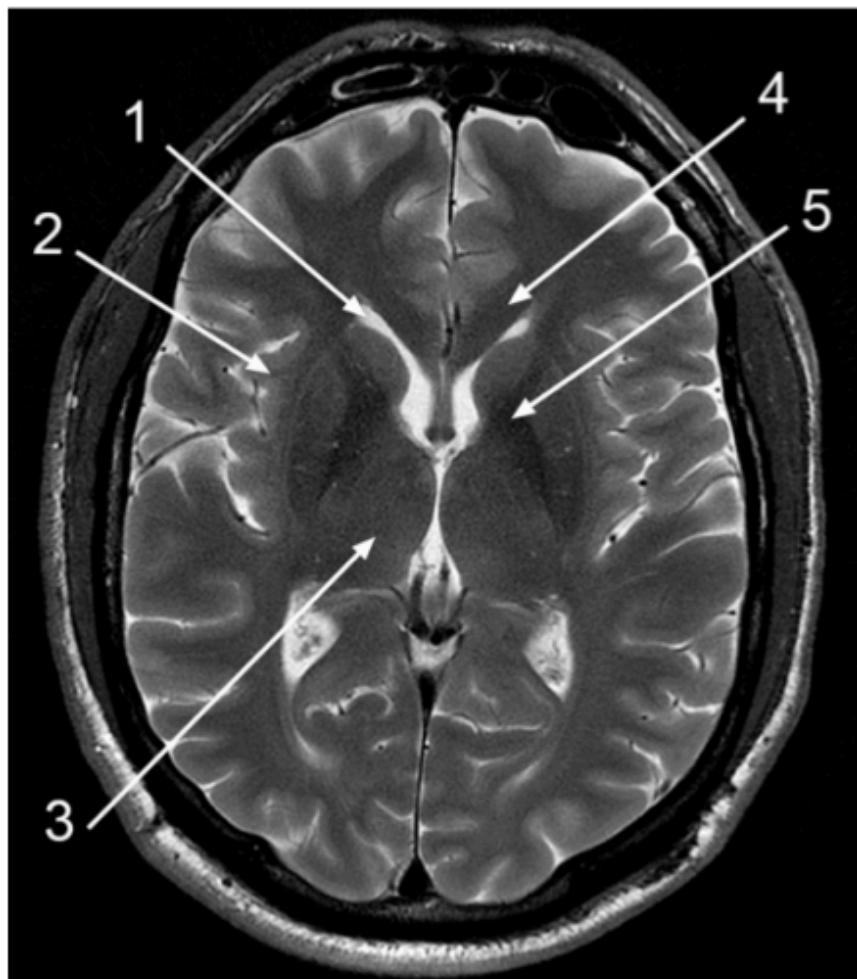
- a. Previous damage to a heart valve is essential for its development
- b. Overall, the most common cause is Enterococcus faecium
- c. Staphylococcus aureus is a common cause in patients with colonic neoplasms
- d. Members of the *viridans* group of Streptococci are the most common cause in intravenous drug users
- e. **Staphylococcus epidermidis is a common cause in patients with artificial heart valves**

**54. Regarding the treatment of schizophrenia, all of the following statements are true, EXCEPT:**

- a. Some adverse effects are linked to muscarinic antagonism
- b. The atypical agents are linked to weight gain and diabetes
- c. **The efficacy of anti-schizophrenic action correlates with D1 receptor blockade**
- d. Movement disorders can emerge during chronic treatment with antipsychotics
- e. The newer drugs have affinity for serotonin (5HT) receptors

## 2016 Memorandum

1. Below is an axial MRI of the brain, which is within normal limits. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.

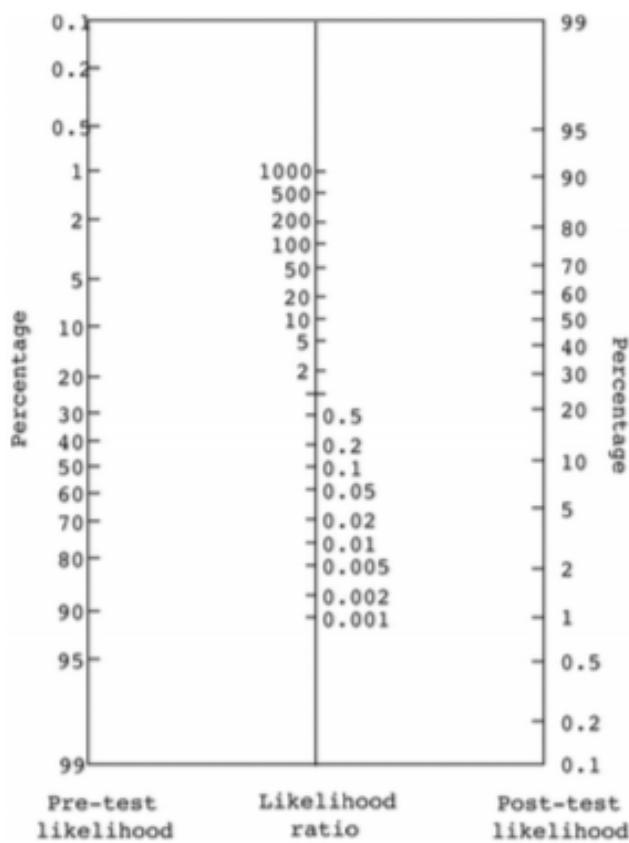


- a. Thalamus
- b. Insula
- c. Globus pallidus
- d. Corpus callosum
- e. Anterior horn of the lateral ventricle
- f. Cingulate gyrus
- g. Genu limb of the internal capsule
- h. Anterior operculum

- 1) Anterior horn of lateral ventricle (e)
- 2) Insula (b)
- 3) Thalamus (a)
- 4) Corpus callosum (d)
- 5) Genu limb of internal capsule (g)

- 2. An 18-month old child can only say 3 words, can't jump with 2 feet in the air and can't use a spoon. However, he helps with undressing and is able to run with confidence. But he has tantrums and bangs head on floor occasionally. What would you do?**
- a. Reassure the parent that this is normal
  - b. Perform a developmental screen**
  - c. Perform a developmental assessment
  - d. Refer to the multi-disciplinary early intervention team
  - e. Investigate for neglect
- 3. Which is most correct about Principle of Biomedical Ethics?**
- a. Set of tools for healthcare professionals to guide them in complex medical ethical settings**
  - b. Treat them as a set of rules to abide by in clinical practice at all times
  - c. Used to protect medical professionals against legal action by patients
  - d. Important but not essential part of medical professionalism
  - e. Used by medical professionals to gauge morality of patients
- 4. All of the following are MAJOR diagnostic criteria for acute rheumatic fever, EXCEPT:**
- a. Migratory Arthritis
  - b. Carditis
  - c. Erythema marginatum
  - d. Widening of the PR interval on ECG**
  - e. Sydenham's chorea
- 5. Which of the following is the BEST indicator of prognosis of Cutaneous melanoma**
- a. Type
  - b. Clarke level
  - c. Breslow's tumour thickness**
  - d. Histopathological grade
  - e. Spread to sentinel lymph node
- 6. What is true regarding drugs and the blood brain barrier?**
- a. Nicotine crosses the BBB easily as it is hydrophilic
  - b. Drugs heavily bound to plasma proteins do not easily cross the BBB**
  - c. Dopamine goes through transport-specific proteins
  - d. Ischaemic stroke decreases the permeability of the blood brain barrier
  - e. Transferrin and other proteins cross the BBB via simple diffusion
- 7. Which option describing the effect of exercise on cancer risk is MOST CORRECT:**
- a. Colon cancer incidence is reduced**
  - b. Breast cancer incidence is slightly increased
  - c. Prostate cancer incidence is reduced
  - d. Endometrial cancer is slightly increased
  - e. Stomach cancer incidence is reduced

8. Scientists investigate outbreaks by plotting on endemic curves. Which one best describes a common source outbreak?
- Cases exposed to a person with disease
  - Cases exposed to an intermittent source over time
  - Cases exposed to a single source within one incubation period
  - Cases exposed to multiple sources over time
  - Cases exposed to multiple sources over many outbreaks
9. Regarding a normograph. A 2 year old child came in with a few symptoms including a wheeze. Also has a fever. You do a chest xray to look for lobar pneumonia. For a wheeze, pre-test probability that it is not pneumonia is 95%, if there is a fever there is 5 times greater likelihood of pneumonia finding on chest x-ray. Use the normograph, what is the post test probability of pneumonia?



- 3%
- 21%
- 35%
- 80%
- 99%

**10. Best method for fluid monitoring in a patient with advanced chronic kidney disease**

- a. Weight
- b. Skin turgor
- c. Ankle swelling
- d. BP
- e. JVP

**11. Our society is really diverse so our healthcare system has to accommodate this by**

- a. Having policies that target the needs of specific population groups, but can unintentionally lead to generalisation, stigma, victim blaming etc.
- b. Having a healthcare system that protects patients and is not sexist, racist or ethnocentric
- c. Respect for religious and cultural diversity as long as it aligns broadly with the wider societal values
- d. Policies that allow healthcare practitioners to "do good" by being quick and efficient no matter the patient's race, gender, religion
- e. Having policies that can be applied equally to every group

**12. A 77 year-old man with a history of prostatic enlargement presented with fever and loin pain. Physical examination revealed a fever of 39°C and right loin tenderness. A provisional diagnosis was made of pyelonephritis. Which ONE of the following laboratory findings is MOST CONSISTENT with the presence of a urinary tract infection?**

- a. Neutrophils  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of Escherichia coli/L
- b. Lymphocytes  $>10 \times 10^6/\text{mL}$ , isolation of  $> 10^6$  colony forming units (CFU) of Escherichia coli/L
- c. Neutrophils  $10 \times 10^5/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of Escherichia coli and Proteus vulgaris/L
- d. Lymphocytes  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^8$  colony forming units (CFU) of Escherichia coli/L
- e. Neutrophils  $>100 \times 10^6/\text{mL}$ , isolation of  $> 10^6$  colony forming units (CFU) of Escherichia coli/L

**13. The following results were obtained:**

Potassium: 5mmol (3-5)  
Chloride: Lower limit of normal  
Sodium: 130 (hyponatremic)  
HCO<sub>3</sub>: 18 (18-24)  
Urea: High Creatinine 500 (50-90)  
GFR 28 (>90)

**Which of the following underlying conditions does NOT explain the laboratory values?**

- a. Diabetes
- b. Hypertension
- c. Recurrent cystitis
- d. Chronic Glomerulonephritis
- e. Systemic Lupus Erythematosus

**14. With regards to transdermal drug delivery, which of the following is MOST CORRECT?**

- a. Ultrasound mediated transdermal drug delivery is only effective in drugs with a molecular weight greater than 1000 daltons
- b. Can only be used for antibiotics
- c. Works in the absence of drugs
- d. Patches are only effective for drugs with a molecular weight of less than 500 Daltons
- e. Micro-needling is only effective for drugs with a molecular weight of less than 500 Daltons

**15. Young adult diagnosed with amblyopia, what is the most likely aetiology?**

- a. X chromosome mutation affecting 1 of the cone photoreceptor
- b. Wearing eye patch for 3 weeks due to recent eye injury
- c. Previously undiagnosed astigmatism due to corneal malformation
- d. Night blindness due to retinitis pigmentosa
- e. Retinal detachment following bungee jumping

**16. A patient presents to a GP in outer Sydney with fever, malaise, cough and a rash.**

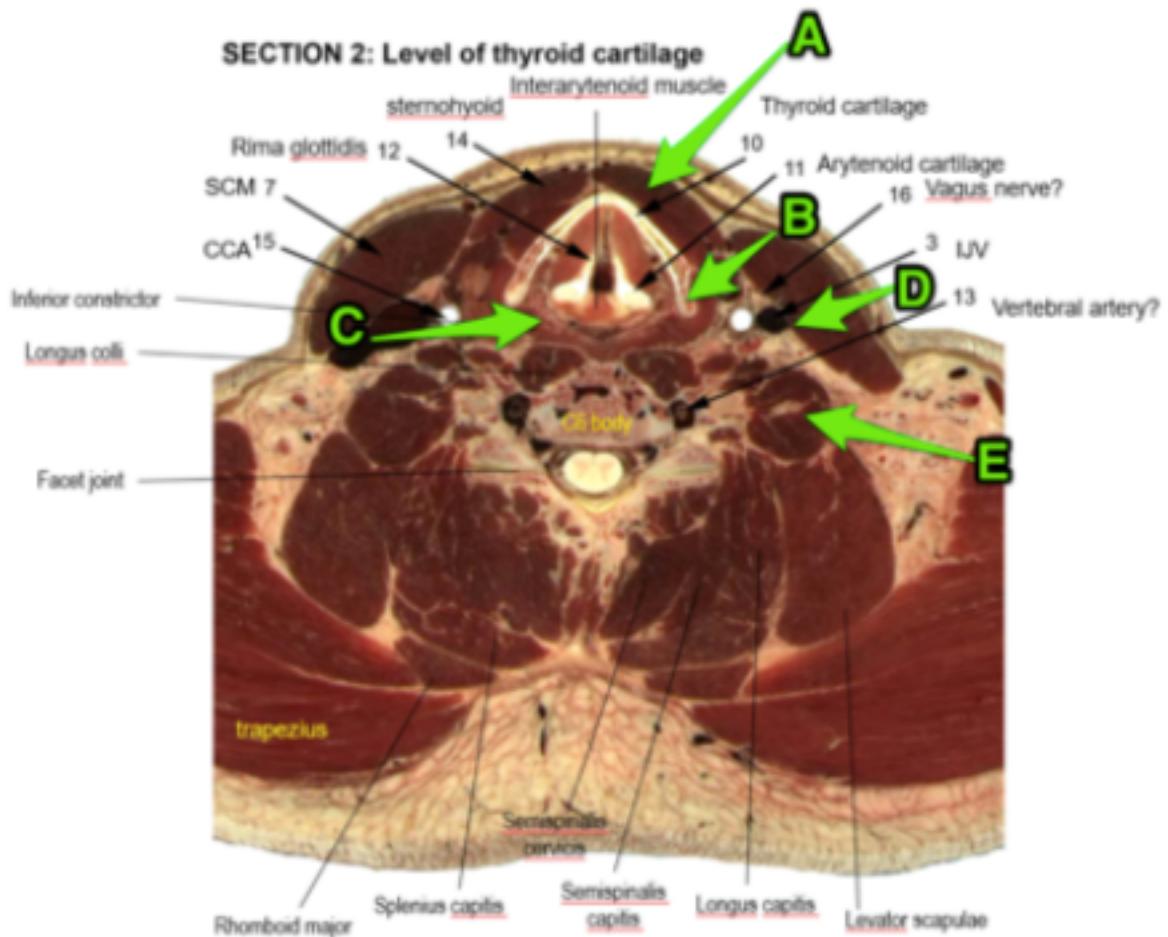
The GP suspects measles and quickly notifies the Infectious Disease Officers. She also takes a throat and nasopharyngeal swabs and sent them to a laboratory. A week later, the GP finds 4 more cases of measles. The patients have no history of recent travel but they do all attend the local high school. Infectious Disease Officers check this outbreak. The GP knows that sometimes disease outbreaks can be false. Which of the following can cause false results?

- a. Rise in population size
- b. Rise in population exposure
- c. Change in population characteristics
- d. Random variations
- e. Change in laboratory protocols

**17. In an RCT studying the effectiveness of group Tai Chi exercise in prevention of hip fracture in patients with previous falls, the rate of hip fracture in the intervention group taking Tai Chi classes was  $11/1345 = 0.8\%$ . The rate of hip fracture in the control group (no exercise class) was  $24/1341 = 1.8\%$ . For this study, which ONE of the following figures is the approximate number needed to treat (NNT) for Tai Chi classes in prevention of hip fracture compared to the control?**

- a. 10 000
- b. 100
- c. 25
- d. 10
- e. 1

18. Identify the following features on a diagram



- a. Common Carotid Artery
- b. Cricothyroid Muscle
- c. Hyoid Bone
- d. Internal Jugular Vein
- e. Laryngopharynx
- f. Sternocleidomastoid
- g. Oesophagus
- h. Scalenus Anterior
- i. Sternothyroid Muscle
- j. Thyroid Lamina

- a) Sternothyroid muscle (i)
- b) Thyroid lamina (j)
- c) Cricothyroid muscle (b)
- d) Internal jugular vein (d)
- e) Scalenus anterior (h)

**19. 3 month old unimmunised girl presents with 4 day history of cough and increased work of breathing. On examination dehydrated, reduced wetness in nappies, crackles in lungs. Older sister was recently in hospital with asthma exacerbation and discharged with inhaled salbutamol and oral roxithromycin. What was most likely cause for 3 month old?**

- a. Whooping cough
- b. Bronchiolitis
- c. Strep pneumonia
- d. Mycoplasma
- e. Asthma

**20. Which one of the following options is MOST CORRECT regarding Dermatophytes?**

- a. It is a skin-related parasitic infestation
- b. They only affect keratinised cells
- c. It predisposes to scabies
- d. Most accurate diagnosis is made by a skin scraping from the centre of the lesion
- e. Sabouraud's agar can be used to isolate single colonies

**21. 55 year old man presents to ED with severe dyspnoea. An investigation of his arterial blood gases was done:**

pH 7.30 (7.35-7.45)  
PCO<sub>2</sub> 50mmHg (35mmHg-45mmHg)  
PO<sub>2</sub> 80mmHg (80mmHg-100mmHg)  
HC0<sub>8</sub> 18mmol/L (22mmol/L-26mmol/L)

**Based on the results of the arterial blood gases, what is the most likely cause of his presentation?**

- a. Anxiety resulting in hyperventilation
- b. Long-standing COPD
- c. End stage chronic kidney disease
- d. Sepsis complicated by ARDS
- e. Pulmonary fibrosis

**22. Regarding SSRIs (Fluoxetine)**

- a. Postural hypotension occurs in the majority of cases
- b. Interactions with other medications are very likely
- c. Block serotonin, dopamine and noradrenaline reuptake
- d. Common side effects include blurred vision and dry mouth
- e. Food restriction (tyramine) to avoid "cheese effect" (applies to MAOIs)

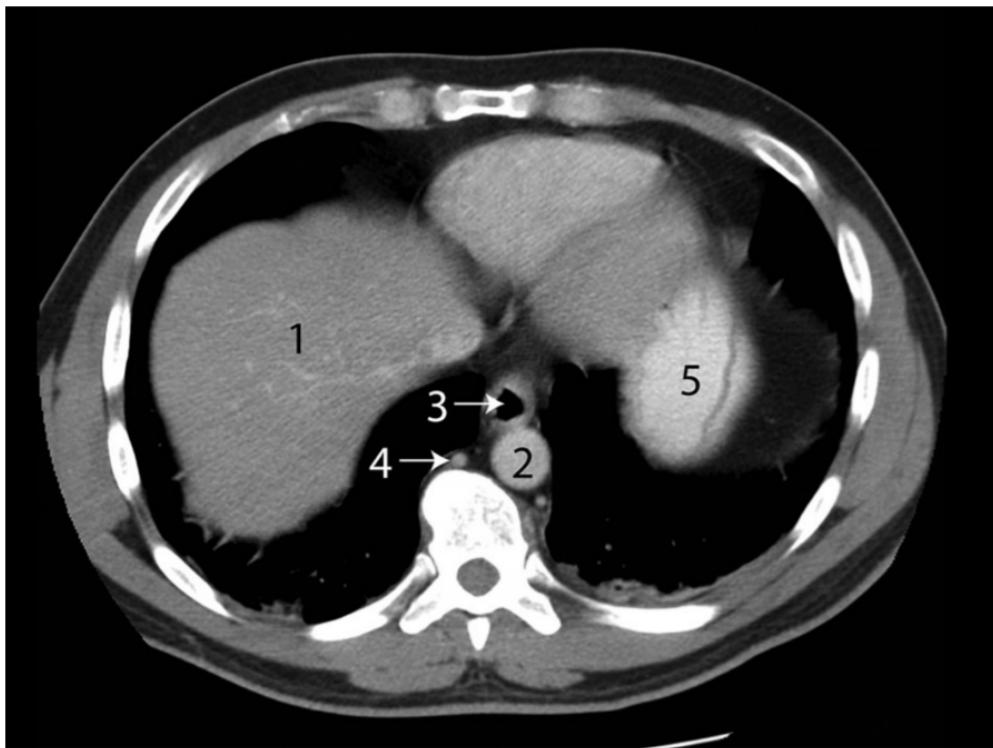
**23. Regarding HIIE (high intensity intermittent exercise) in an obese woman after 3 months. Which is true:**

- a. Her leg muscle mass increased
- b. There was no change in anaerobic capacity after 3 months
- c. Significant increase in insulin sensitivity at 3 months
- d. Decreased fat loss compared to regular bike exercise
- e. No change in maximum oxygen uptake

**24. A series of cases of salmonella are diagnosed within a small town. The local Public Health Unit designs a questionnaire that is distributed to all individuals with laboratory confirmed infection about their food exposures, the questionnaire was also sent to a group of well individuals from the town. Which of the following options best fits the study method used?**

- a. Case control
- b. Case series
- c. Retrospective cohort study
- d. Prospective cohort study
- e. RCT

**25. Abdominal CT within normal parameters:**



- a. Abdominal aorta
- b. Azygous vein
- c. Body of stomach
- d. Fundus of stomach
- e. Inferior vena cava
- f. Hepatic vein
- g. Oesophagus
- h. Left lobe of liver
- i. Right lobe of liver
- j. Spleen

**Answer: 1. Right lobe of liver (i), 2. Abdominal aorta (a), 3. Oesophagus (g), 4. Azygos vein (b), 5. Stomach fundus (d)**

**26. 2-year-old girl presents to emergency, she has had a fever for 24 hours. She has been eating, drinking and playing normally. Has a cough, runny nose and white exudate on tonsils. Tympanic membranes are normal; she is interacting normally. She has bruising on shins, cheek and ear, her parents say they don't know of specific incidents that caused this. Full blood count was normal. What is the most appropriate action in your management?**

- a. Oral penicillin
- b. Oral rehydration
- c. Admit to hospital
- d. Complete the online mandatory notification guide
- e. Parental reassurance

**27. Which one of the following antibiotics targets DNA gyrase?**

- a. Carbapenem
- b. Macrolides
- c. Tetracycline
- d. Quinolones
- e. Aminoglycosides

**28. These spirometry values were taken in the Emergency Department (normal values shown in brackets).**

FEV1: 2.5 L (4.0 L)

FVC: 2.8 L (5.0L)

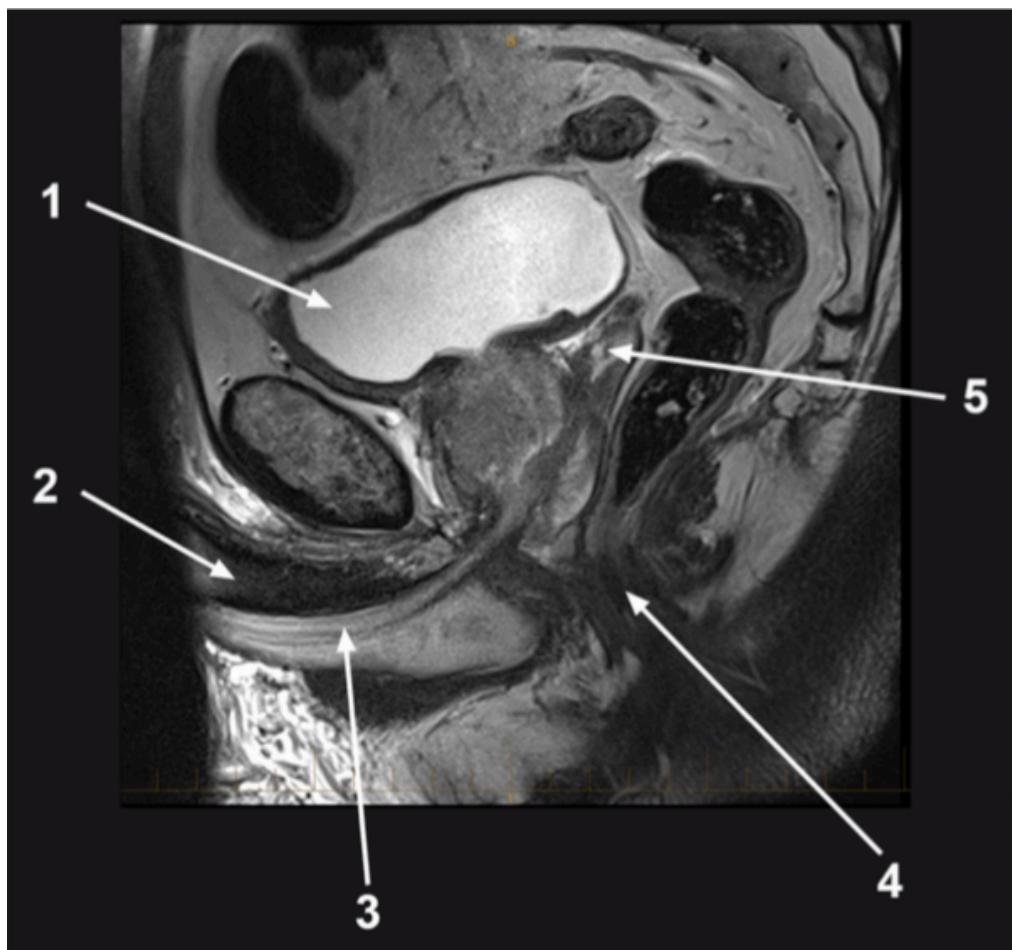
**For which patient do these values best apply?**

- a. Young man with an acute exacerbation of asthma
- b. Long term smoker with recurrent lung infections
- c. Elderly woman with acute pulmonary thromboembolism
- d. Middle-aged miner with pneumoconiosis
- e. Middle-aged man with chronic asthma

**29. A 32-year-old man presents with 3 weeks of red eyes and yellow discharge and is diagnosed with chlamydial conjunctivitis. Which of these treatments is MOST SUITABLE?**

- a. Bacitracin
- b. Gentamicin
- c. Hydrocortisone
- d. Olopatadine
- e. Tetracycline

**30.** Below is a sagittal MRI of the male pelvis, which shows a malignancy in the peripheral zone of the prostate gland. Identify each of the normal structures labelled 1 to 5 in the image above by selecting from the list of alternatives provided.



- a. Bulbourethral gland
- b. Corpus cavernosum
- c. Anal canal
- d. Sigmoid colon
- e. Spongy urethra
- f. Prostate
- g. Seminal vesicle
- h. Bladder

- 1) Bladder (h)
- 2) Corpus Cavernosum (b)
- 3) Spongy Urethra (e)
- 4) Anal Canal (c)
- 5) Seminal Vesicle (g)

**31. A 56-year-old woman with long-standing mitral valve regurgitation presents with palpitations and dyspnoea. On examination her pulse is irregular and she has signs of congestive cardiac failure. An ECG confirms atrial fibrillation. All of the following cardiac auscultatory findings would be expected in this woman, EXCEPT:**

- a. Split second heart sound on inspiration
- b. Soft first heart sound
- c. Third heart sound
- d. Fourth heart sound**
- e. Pansystolic murmur at the cardiac apex

**32. Woman comes into ICU, has pseudomonas aeruginosa in sputum**

- a. Piperacillin + tazobactam**
- b. Metronidazole IV
- c. Cephazolin IV
- d. Gentamicin + ampicillin IV
- e. Ampicillin + clavulanic acid IV

**33. Which of these is NOT present in rheumatoid arthritis**

- a. Synovial hyperplasia
- b. Destruction of articular cartilage by neutrophils
- c. Angiogenesis
- d. Infiltration of synovium by monocytes & lymphocytes
- e. Activation of macrophages by IL-1 and TNF**

**34. Which drug statement is MOST CORRECT:**

- a. Naltrexone reduces alcohol induced reward via  $\mu$  opioid receptors**
- b. Acamprosate weak NMDA inhibitor normalise cocaine induced dysregulated neurotransmission
- c. Varenicline antagonist of nicotine receptor that treats nicotine dependence
- d. Clonidine a<sub>2</sub> cholinergic agonist that reduces neurotransmission of the locus ceruleus to treat opioid withdrawal
- e. Buprenorphine neuronal uptake inhibitor of NA and DA to treat nicotine induced withdrawal

**35. Which of the following regarding the trigeminal nerve is MOST CORRECT?**

- a. It innervates the dura mater**
- b. The ophthalmic branch innervates both upper and lower eyelids
- c. The mandibular nerve provides secretomotor innervation to all salivary glands
- d. The maxillary nerve provides innervation for the buccinator
- e. The mandibular nerve travels through the mandibular foramen in the mandible

**36. A new born baby has low tone and poor suck. He was just delivered by emergency caesarean with mother under GA due to him being in the breech position. His mother was a group A+ blood group and had diabetes mellitus during the pregnancy. She was group B strep negative. The baby was 4300g in weight. What investigation would you perform?**

- a. FBC
- b. EUC
- c. Blood glucose
- d. Blood culture
- e. Hip ultrasound

**37. Woman presents with dysuria and discharge. All are common causes of vaginal discharge EXCEPT:**

- a. Chlamydia
- b. Gonorrhoea
- c. Syphilis
- d. Trichomonas vaginalis
- e. Candida

**38. What is the main mechanism behind Type III Hypersensitivity?**

- a. Recruitment of neutrophils
- b. Recruitment of CD8+ Lymphocytes
- c. Antibody interaction with antigens on cell surfaces
- d. Complement activation
- e. Degranulation of mast cells

**39. What is the benefit of an atypical schizophrenia agent over a typical one?**

- a. Better tolerated by patients
- b. It is less likely to cause diabetes
- c. Better at treating negative side of schizophrenia
- d. It affects serotonin, but not dopamine
- e. There are less motor side effects

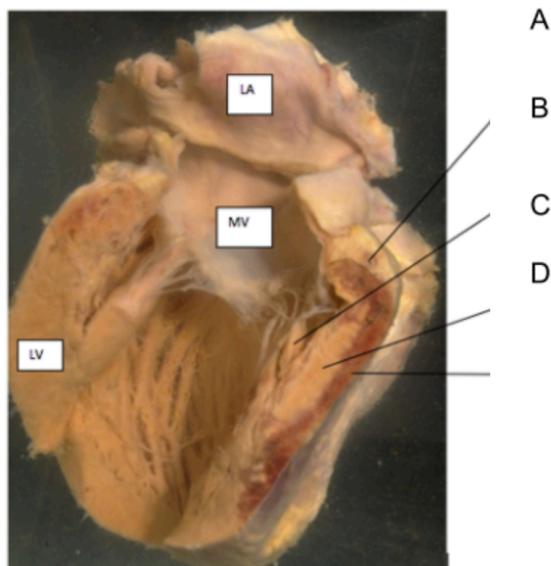
**40. Man comes back from Tanzania in preceding 4 weeks. Symptoms include temperature of 38, jaundice, confusion and anaemia. He was on doxycycline every day but stopped a week after he came back. Cytology smear showed 2.5% parasites. What could have been the cause?**

- a. He has yellow fever so you must isolate him
- b. Doxycycline induced hepatitis
- c. Severe malaria from Plasmodium ovale
- d. Cerebral malaria from Plasmodium Falciparum
- e. Liver flap caused by liver fluke clonorchis sinensis

**41. Regarding *Bordetella pertussis*, which is most true:**

- a. Clinical diagnosis is usually achieved within the first few days of symptom development
- b. The causative organism can be isolated within the first few days of the illness
- c. Full doses of vaccinations in children confers life-long immunity
- d. Whooping cough causes leucocytosis, influx of neutrophils
- e. The causative agent can be cultured on sheep blood agar

**42. A man died suddenly 7 days after his initial presentation. The image shown is a close-up view of part of the left ventricle, as seen at autopsy. Identify the following features:**



- a. Haemorrhage
- b. Necrotic papillary muscle
- c. Granulation tissue
- d. Necrotic left ventricular wall
- e. Occluded coronary artery
- f. Healthy myocardial tissue

- a) Occluded coronary artery (e)
- b) Necrotic papillary muscles (b)
- c) Coagulative necrosis of heart muscle (d)
- d) Haemorrhage/ granulation tissue (a)

**43. What is most correct regarding action of cyclosporin & tacrolimus in organ transplant?**

- a. Prevent graft vs host disease
- b. Suppress host T-cell response by antagonising IL-2 gene expression during induction of immunological response
- c. Down-regulate MHC antigens in graft tissue
- d. Selectively inhibit antibody production by host B lymphocytes
- e. Selectively toxic to activated host T-cells

**44. A 65-year-old man presents with tiredness and shortness of breath. He has hypochromic, microcytic anemia of 85g/L (130-180). He is otherwise asymptomatic and normal on physical examination. Which ONE of the following is the MOST APPROPRIATE initial investigation?**

- a. Upper GI Endoscopy
- b. Abdominal CT
- c. Colonoscopy
- d. Flexible sigmoidoscopy
- e. Faecal occult blood test

**45. Regarding infective endocarditis, which ONE of the following statements is MOST CORRECT?**

- a. Previous damage to a heart valve is essential for its development
- b. Overall, the most common cause is Enterococcus faecium
- c. Staphylococcus aureus is a common cause in patients with colonic neoplasms
- d. Members of the viridans group of Streptococci are the most common cause in intravenous drug users
- e. Staphylococcus epidermidis is a common cause in patients with artificial heart valves

**46. Regarding the macroscopic image shown below, which ONE of the following statements is MOST CORRECT?**



- a. The lesion appears benign
- b. The lesion appears to be arising from the mucosa of the small intestine
- c. The lesion is most often associated with mutations in the H-RAS tumour suppressor gene
- d. The lesion is associated with migratory thrombophlebitis**
- e. The lesion is unlikely to cause jaundice

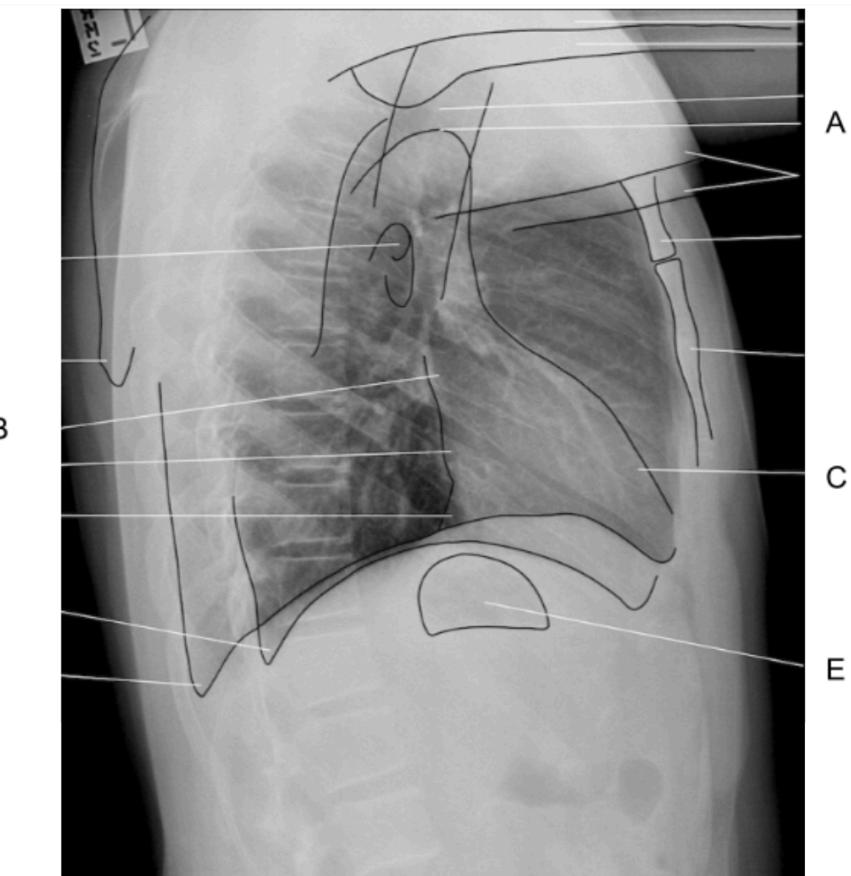
**47. Regarding Quality Use of Medicines, which is part of the National Prescribing Service, what is MOST CORRECT?**

- a. It does not address cost-effectiveness
- b. It does not include non-pharmacological interventions e.g. physiotherapy**
- c. It was introduced in order to reduce costs associated with the PBS
- d. It is concerned primarily with GPs
- e. It includes complementary medicines

**48. 67-year-old lady presents with 48-hour history of cramps in the perumbilical region. No signs of local or generalised peritonitis. Most likely cause:**

- a. Biliary colic
- b. Large bowel obstruction**
- c. Small bowel ischemia
- d. Perforated Viscus
- e. Peptic ulcer

**49. Identify the labelled features on the following lateral chest x-ray:**



- a. Arch of aorta
- b. Liver, right atrium
- c. Right ventricle
- d. Left atrium
- e. Right dome of the diaphragm
- f. Stomach fundus bubble
- g. Spleen

- a) Arch of aorta (a)
- b) Left atrium (d)
- c) Right ventricle (c)
- d) Stomach fundus bubble (f)

**50. Which one of the following antibiotics is most appropriate for the treatment of infection with penicillinase-producing *Staphylococcus aureus*?**

- a. Amoxicillin
- b. Flucloxacillin
- c. Ticarcillin
- d. Vancomycin
- e. Clarithromycin

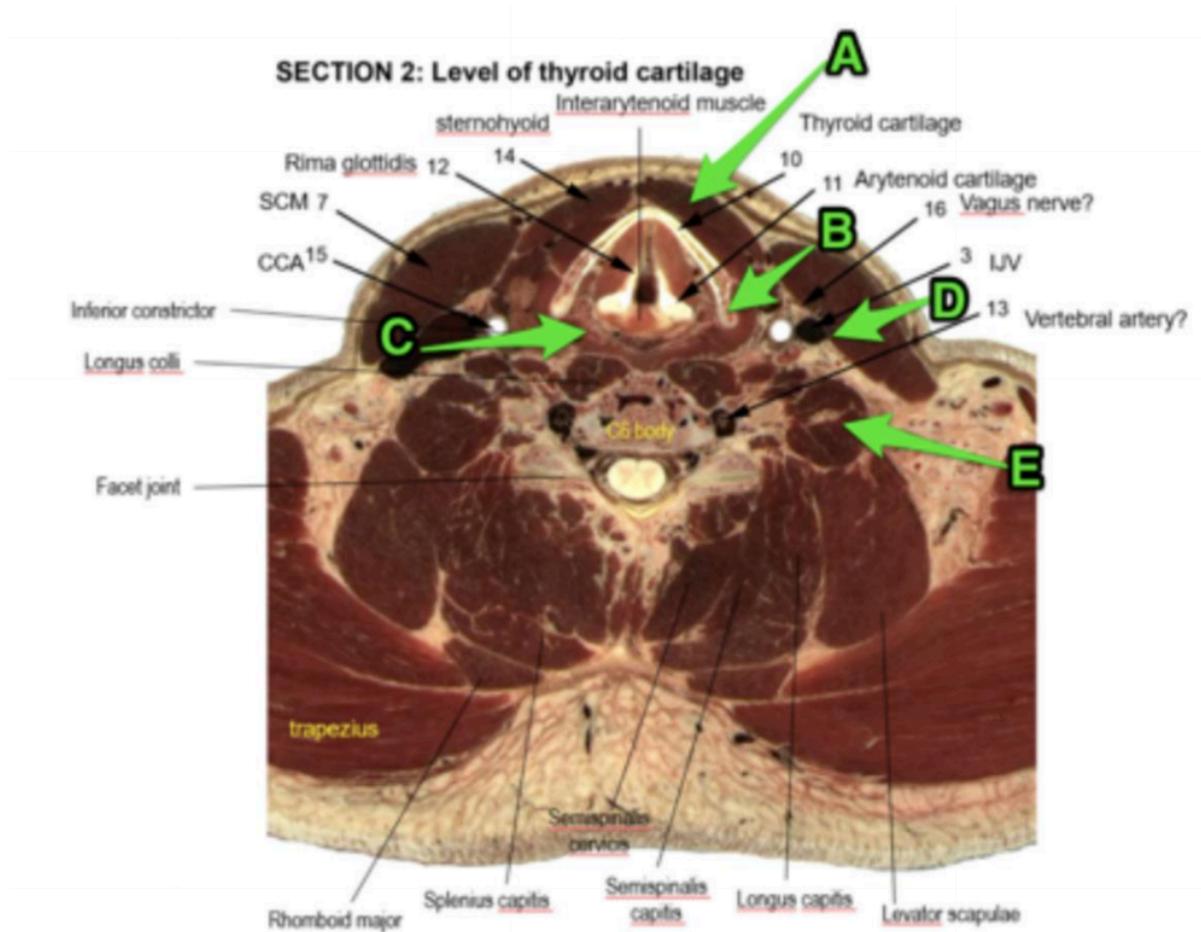
**51. All of the following are consistent with peripheral neuropathy of the lower limb, EXCEPT?**

- a. Muscle wasting
- b. Muscle weakness
- c. Depressed ankle reflex
- d. Impaired pain, touch and temperature
- e. Intact proprioception and vibration

**52. What's the best combination for hypertension in a man who has had myocardial infarction**

- a. Ace-inhibitor/angiotensin receptor blocker +  $\beta$ -blocker
- b. Thiazide + Diltiazem
- c. Ca-channel blocker +  $\beta$ -blocker
- d. ACE inhibitor and clonidine
- e. Verapamil +  $\beta$ -blocker

1. Label below



- a. Common Carotid Artery
- b. Cricothyroid Muscle
- c. Hyoid Bone
- d. Internal Jugular Vein
- e. Laryngopharynx
- f. Sternocleidomastoid
- g. Oesophagus
- h. Scalenus Anterior,
- i. Sternothyroid Muscle
- j. Thyroid Lamina

- A) Sternothyroid muscle (i)
- B) Thyroid lamina (j)
- C) Cricothyroid muscle (b)
- D) Internal jugular vein (d)
- E) Scalenus anterior (h)

- 2. Man comes in, reduced right chest expansion, dullness on percussion, has crackles, increased vocal resonance in the right lower lobe.**
- a. Right lower lobe collapse
  - b. Right lobe pneumonia
  - c. Right pleural effusion
  - d. Spontaneous pneumothorax
  - e. Left sided something obviously wrong
- 3. Central focus of population health ethics is:**
- a. Implement health policy and delivery that targets specific groups that are vulnerable
  - b. Achieve greatest good for the greatest number
  - c. Reduce cost of healthcare through any measure
  - d. Protect autonomy and individual freedom
  - e. Provide a clearer societal definition of harm
- 4. All of the following can cause be a cause of culture negative endocarditis EXCEPT:**
- a. Giving antibiotics before taking bloods for culture
  - b. Nutritionally variant Strep. Viridans
  - c. Noninfectious thrombotic endocarditis
  - d. Not taking adequate blood samples
  - e. Infection from a member of the HACEK group
- 5. A 55 year old man presents to ED with severe dyspnoea. An investigation of his arterial blood gases was done:**
- pH 7.30 (7.35-7.45)  
PCO<sub>2</sub> 50 mmHg (35 mmHg - 45 mmHg)  
PO<sub>2</sub> 80 mmHg (80 mmHg - 100 mmHg)  
HC08 18 mmol/L (22 mmol/L-26 mmol/L)
- a. Anxiety resulting in hyperventilation
  - b. Long-standing COPD
  - c. End stage chronic kidney disease
  - d. Sepsis complicated by ARDS
  - e. Pulmonary fibrosis

**6. Thrombolytic drugs are used in the acute treatment of stroke. Which one of the following best explains the mechanism of action of this class of Drugs?**

- a. They convert fibrinogen to soluble fibrin via the removal of fibrinogen peptide A
- b. They convert plasminogen into plasmin, which then cleaves insoluble fibrin into soluble fibrin monomers**
- c. They bind to the active site of plasmin preventing the cleavage of insoluble fibrin into soluble fibrin monomers
- d. They prevent the formation of insoluble fibrin via the inhibition of the coagulation pathway
- e. They bind to the lysine-binding site of plasmin preventing binding and cleavage of insoluble fibrin into soluble fibrin monomers

**7. In isovolumetric contraction, the mitral valves are \_\_\_\_\_ and the aortic valves are \_\_\_\_\_**

- a. Open, closed.
- b. Closed, open.
- c. Closed, closed.**
- d. Open, open.
- e. Half-open, half-closed.

**8. A 46 year-old woman presents to her GP for a routine pap smear. She is well and has no significant past medical history. She mentions that her maternal aunt aged 76 years was recently diagnosed with stage III colorectal cancer.**

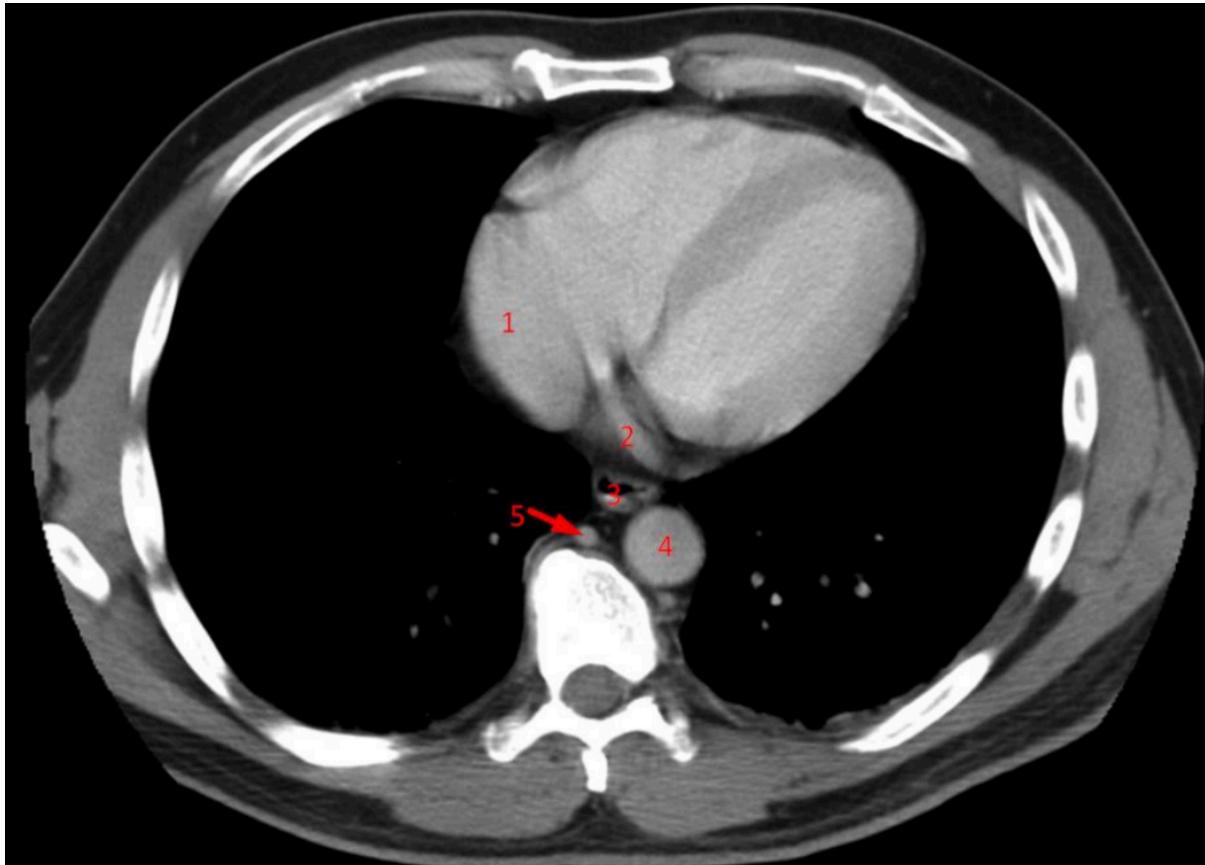
**Which ONE of the following screening tests should be recommended?**

- a. Faecal occult blood test
- b. Colonoscopy
- c. Fasting Lipids**
- d. Mammogram
- e. Urinalysis

**9. With regards to accuracy of diagnostic tests, which combination is MOST useful?**

- a. LR+ 10.0 and LR- 0.1**
- b. LR+ 6 and LR- 0.2
- c. LR+ 4 and LR- 0.4
- d. LR+ 2 and LR- 0.5
- e. LR+ 1 and LR +1

**10. Label the following diagram:**



- a. Right atrium
- b. Left atrium
- c. Coronary sinus
- d. Left ventricle
- e. Oesophagus
- f. Descending aorta
- g. Azygos vein
- h. Superior vena cava
- i. Thoracic duct

- 1) Right atrium (a)
- 2) Coronary sinus (c)
- 3) Oesophagus (e)
- 4) Descending aorta (f)
- 5) Azygos vein (g)

**11. A 46-year-old woman presents with 24 hour history of RUQ abdominal pain with temp 38.5, BP 120/60, PR (lol) 90bpm. She has localised RUQ tenderness and positive Murphy's sign. What is the most USEFUL investigation for Dx?**

- a. Abdominal CT
- b. Abdominal X-ray
- c. Chest X-ray
- d. Radionuclide scan
- e. Upper Abdominal U/S

**12. Ethically, which of the following is most accurate about the consequentialism/utilitarianism approach to public health/ population health issues.**

- a. The consequentialism/utilitarianism approach rarely achieves the aims and goals of public health
- b. The consequentialism/utilitarianism framework addresses inequalities, social justice and inequities
- c. The consequentialism/utilitarianism framework is best for society-wide issues
- d. The libertarianism approach envisages unlimited freedom for individuals
- e. Prioritising the majority can cause a disadvantage and forsake the needs and preferences of individuals, minority groups and disadvantaged

**13. Regarding scabies, all of the following are correct EXCEPT:**

- a. A female mite can live on human skin for 2 months
- b. It can be treated by benzyl benzoate
- c. The first sites of infection are the wrist and fingers
- d. It is caused by sarcoptes scabiei
- e. It can be diagnosed via an enzyme-linked immunoassay

**14. These spirometry values were taken in the Emergency Department**

FEV1: 2.5 L (4.0 L)

FVC: 2.8 L (5.0L)

- a. Young man with an acute exacerbation of asthma
- b. Long term smoker with recurrent lung infections
- c. Elderly woman with acute pulmonary thromboembolism
- d. Middle-aged miner with pneumoconiosis
- e. Middle-aged man with chronic asthma

**15. Which of the following regarding opioid dependence is most correct?**

- a. Methadone is good for maintenance therapy as it has a long half life and low bioavailability
- b. Clonidine is an alpha-1 agonist that reduces withdrawal symptoms by inhibiting adrenergic neurotransmission
- c. Use of opioid antagonist causes decreased opioid receptor expression increasing risk of overdose should be increased opioid receptor expression due to lower activation
- d. Diamorphine (heroin) is a prodrug that must be metabolised to become active
- e. Bupropion is a partial agonist that may be used in withdrawal

**16. Woman commences HIIE cycling. Which of the following is correct after 3 months**

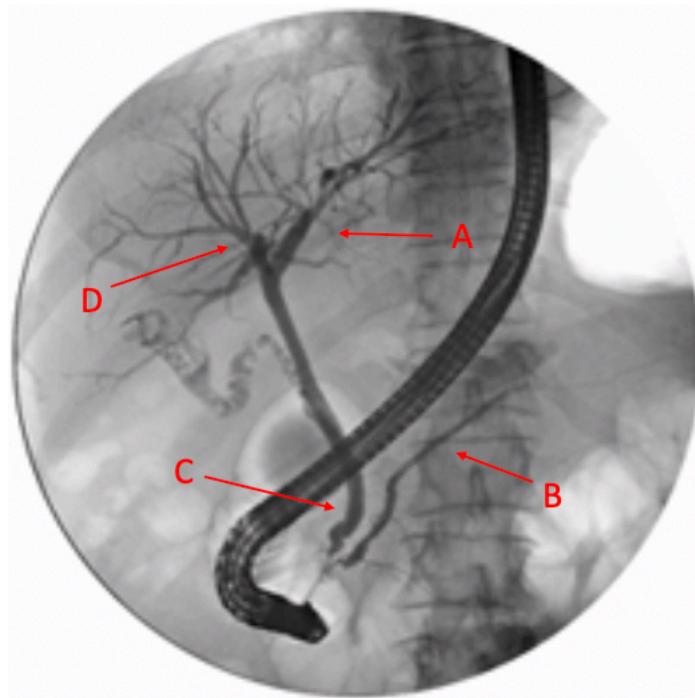
- a. Increase in leg muscle mass
- b. There is no change in anaerobic capacity
- c. There is less fat loss compared to steady state cycling exercise
- d. No change in maximum oxygen capacity at 3 months
- e. Significant increase in insulin sensitivity at 3 months

**17. The reason for an artificial increase in cases of an outbreak?**

- a. Change in lab protocols
- b. Population increase
- c. Random variation
- d. Population more susceptible

**18. Regarding barriers to implementation of clinical practice guidelines, which one of the following is MOST correct?**

- a. Staff workload does not play a big role in preventing implementation of guideline
- b. Patient's beliefs don't prevent implementation of guideline
- c. Cost of implementation is taken into account at ward level
- d. The perceived burden of illness does not affect the level of implementation
- e. Targeted training of specific guideline can markedly improve the implementation



**19. Please label the above ERCP**

- a. Left hepatic duct
- b. Right hepatic duct
- c. Main pancreatic duct
- d. Hepatopancreatic ampulla
- e. Splenic vein
- f. Neck of gallbladder
- g. Common bile duct

A (a), B (c), C (g), D (b)

**20. A 65-year-old man presents with tiredness and shortness of breath. He has hypochromic, microcytic anemia of 85g/L (130-180). He is otherwise asymptomatic and normal on physical examination. Which ONE of the following is the MOST APPROPRIATE initial investigation?**

- a. Upper GI Endoscopy
- b. Abdominal CT
- c. Colonoscopy
- d. Flexible sigmoidoscopy
- e. Faecal occult blood test

**21. 42 year old man comes to you with a 3 day history of high fever, abdominal pain, chills, and a 2 day history of mild diarrhoea after spending 3 weeks in India. He admits to eating from food stalls several times during his time in India. On examination, his abdomen is diffusely tender and there is a red maculopapular rash on his chest.**

- a. Dengue Fever
- b. Malaria
- c. Typhoid Fever
- d. Cholera
- e. Tuberculosis

**22. A 55 year-old man presents with cough, productive of yellowish-white sputum, and breathlessness. He has been a smoker (approximately 20 cigarettes/day) for over 30 years and on further questioning acknowledges that his breathlessness has been present for "many months or even years" and has been getting steadily worse. Which ONE of the following mechanisms is MOST LIKELY to be underlying his dyspnoea?**

- a. Bronchospasm associated with eosinophilic inflammation in the bronchi
- b. Goblet cell hyperplasia with mucus plugging of the bronchi
- c. Chronic inflammation of the bronchi with mucous gland hypertrophy
- d. Peribronchiolar inflammation and fibrosis
- e. Progressive centriacinar destruction of alveolar walls

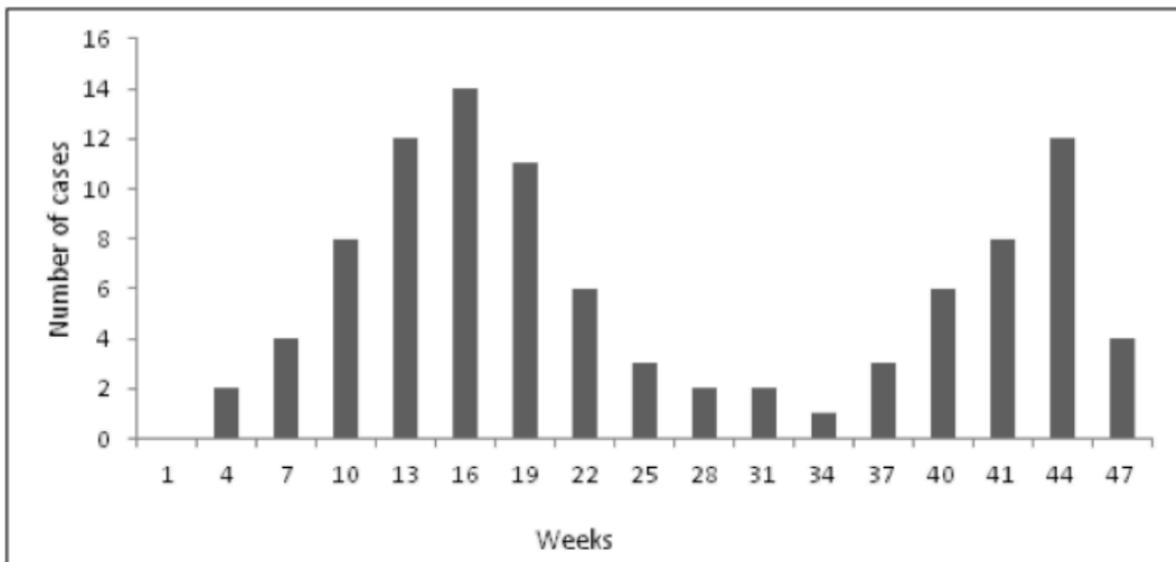
**23. Which of the following regarding treatment for COPD is MOST CORRECT:**

- a. Beta-2 adrenergic antagonists are used for the treatment of mild COPD
- b. Ipratropium antagonises bronchial constriction caused by sympathetic stimulation
- c. Glucocorticoids inhibit formation of arachidonic acid, inhibiting synthesis of lipocortin
- d. Alpha-2 proteinase inhibitors are used in the treatment of chronic bronchitis
- e. Steroidal anti-inflammatories can result in significantly increased FEV1 in responsive patients

**24. All of the following may occur in stroke, EXCEPT:**

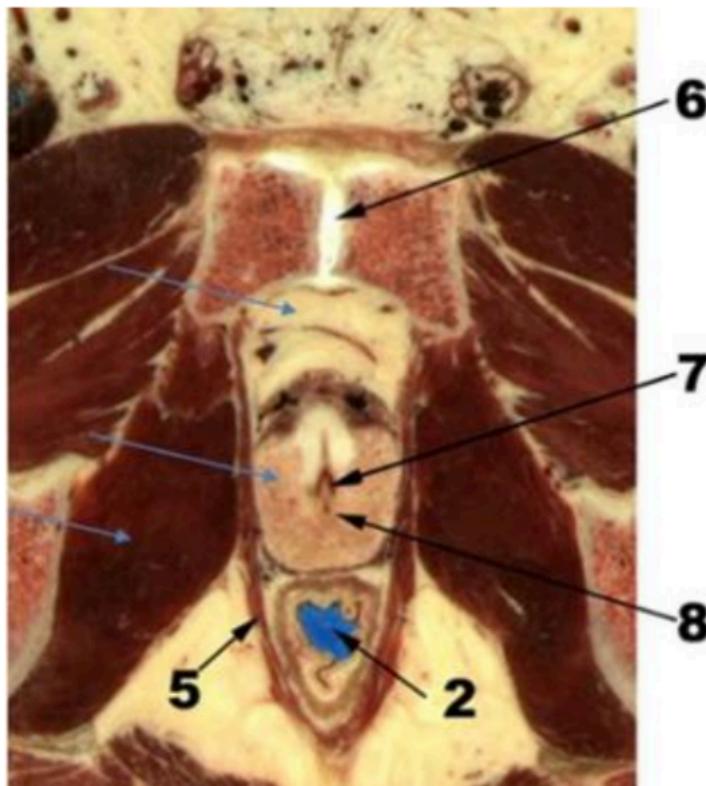
- a. Loss of one visual field while retaining the other
- b. Loss of the ability to recognise faces but retained ability to read
- c. Loss of ability to see objects in motion but retention of ability to recognise them
- d. Retained ability to differentiate red from green but loss of ability to differentiate red from blue
- e. Loss of ability to read, retained ability to see objects in motion

**25. What type of outbreak is represented by the epidemic curve in the graph below?**



- a. Point source
- b. Intermittent common source
- c. Continuous common source
- d. Propagated
- e. The curve is not indicative of an outbreak

**26. Axial section of male pelvis**



- a. Bladder
- b. Obturator internus
- c. Obturator externus
- d. Prostate gland
- e. Prostatic urethra
- f. Ejaculatory duct
- g. Colliculus seminalis
- h. Levator ani
- i. Piriformis muscle

Asked for the three arrows, 7 and 8

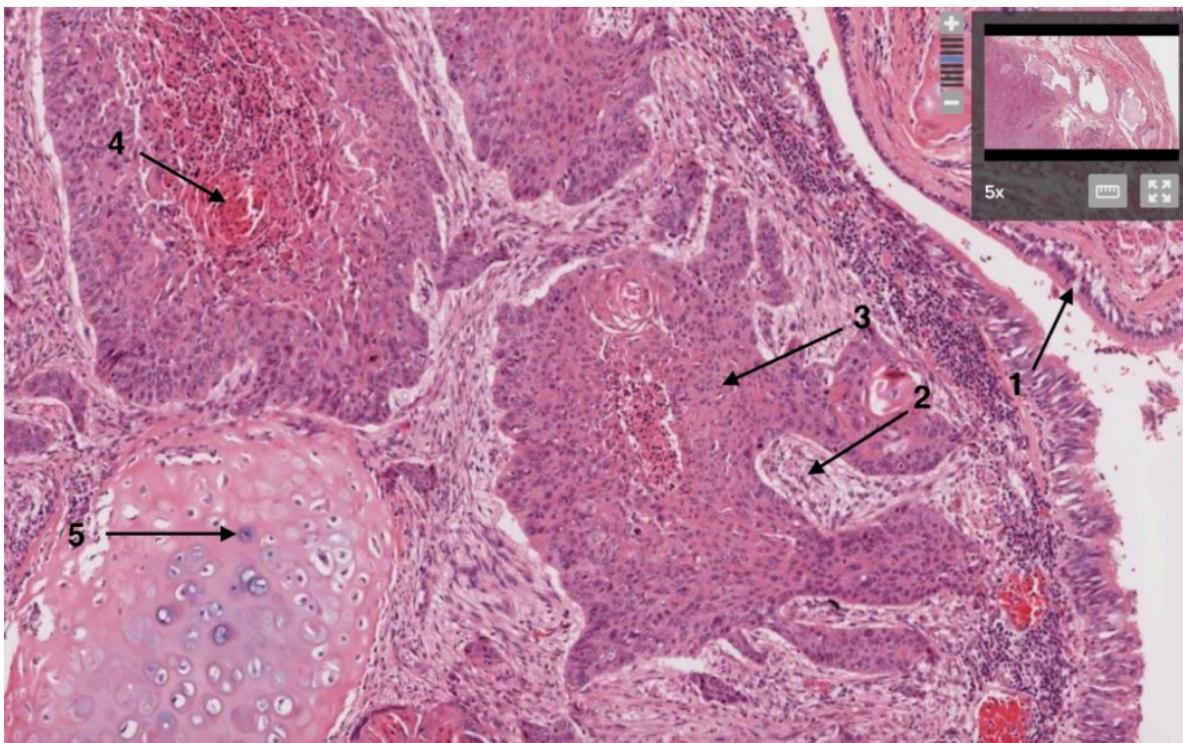
**27. Infant born 1 week ago at 35 weeks presents with a fever and bulging fontanelle. CSF cloudy with increased polymorphonuclear cells. Gram stain showed spherical Gram positive. What was the causative organism?**

- a. E. Coli
- b. Group B Streptococcus**
- c. Haemophilus influenzae
- d. Listeria monocytogenes
- e. Neisseria meningitidis

**28. When the eye is abducted, which of the following elevates the eye?**

- a. Superior rectus
- b. Superior oblique
- c. Inferior oblique
- d. Superior rectus and superior oblique
- e. Superior rectus and inferior oblique

**29. A 54-year old smoker presented with a history of haemoptysis and non-resolving chronic cough. He has had pneumonia 2 times in the last 6 months. A bronchoscopy was done and the biopsy is shown below.**



- a. Adenocarcinoma
- b. Keratin pearls/whorls
- c. Anaplastic cells
- d. Squamous cell carcinoma
- e. Pseudostratified columnar epithelium
- f. Metaplastic squamous epithelium
- g. Chondrocyte
- h. Central necrosis
- i. Desmoplastic change
- j. Inflammatory exudate

- 1) Pseudostratified columnar epithelium (e)
- 2) Desmoplastic change (i)
- 3) Squamous cell carcinoma (d)
- 4) Keratin pearls/whorls (b)
- 5) Chondrocyte (g)

**30. A mother brings her 18 month old to GP with 48h not eating well and 24h vomiting, diarrhoea, low grade fever and dehydration. What is most likely causative organism:**

- a. Campylobacter jejunum
- b. **Rotavirus**
- c. Giardia lamblia
- d. Enterovirus
- e. Salmonella typhimurium

**31. Which of the following agencies is a core component of the National Medicines Policy of Australia?**

- a. NICM
- b. Medicare
- c. Medicines Australia
- d. NPS Medicines Wise
- e. **PBS**

**32. What causes the appendix to be susceptible to gangrene?**

- a. Appendicular vein is obstructed in its drainage to IVC,
- b. It is supplied by lumbar arteries via its attachment to posterior abdominal wall,
- c. Mesoappendix is prone to kinking,
- d. Appendicular artery is prone to atherosclerosis,
- e. **Appendicular artery is an end artery**

**33. Which of these is NOT a finding you would expect in a healthy woman of 20 weeks gestation, compared to her non-pregnant state?**

- a. Reduced haemoglobin concentration
- b. **Reduced red cell mass**
- c. Reduced albumin concentration
- d. Reduced serum creatinine
- e. Increased plasma volume

**34. A 24-year old male who is HIV positive. Doesn't take antiretrovirals. Presents w/ 1/52 Hx diarrhoea, found to be cryptosporidium. What is the MOST LIKELY outcome of this infection?**

- a. Spontaneous resolution in a week
- b. **Chronic diarrhoea**
- c. Bowel perforation
- d. Dissemination of infection
- e. Resolution after treatment with metronidazole

**35. Regarding Hodgkin lymphoma, which one of the following best describes the typical changes in lymph nodes?**

- a. There is diffuse replacement of normal lymphoid tissue
- b. The predominant cellular pattern is of follicular aggregates of precursor B cells
- c. Multinucleate giant cells with abnormal nuclei are widespread
- d. Extensive necrosis is prominent
- e. Bands of fibrosis are prominent

**36. Which of the following surpassed beta-blockers as first line therapy for primary open angle glaucoma?**

- a. Prostaglandin analogue e.g. Latanoprost
- b. B. Muscarinic agonist e.g. pilocarpine
- c. C. Alpha 2 agonist
- d. D. Carbonic anhydrase inhibitor
- e. E. Osmotic agent e.g. IV mannitol

**37. Ureter pain which radiates to the groin and scrotum involves which spinal segment?**

- a. T10
- b. T11
- c. T12
- d. L1
- e. L2

**38. A 55 year old woman with Type 2 diabetes presented with chronic ulcer at the sole of the foot on the 1st metatarsal joint. Which of the following complications are the likely cause?**

- a. Microvascular disease
- b. Macrovascular disease
- c. Peripheral neuropathy
- d. Arthropathy
- e. Osteomyelitis

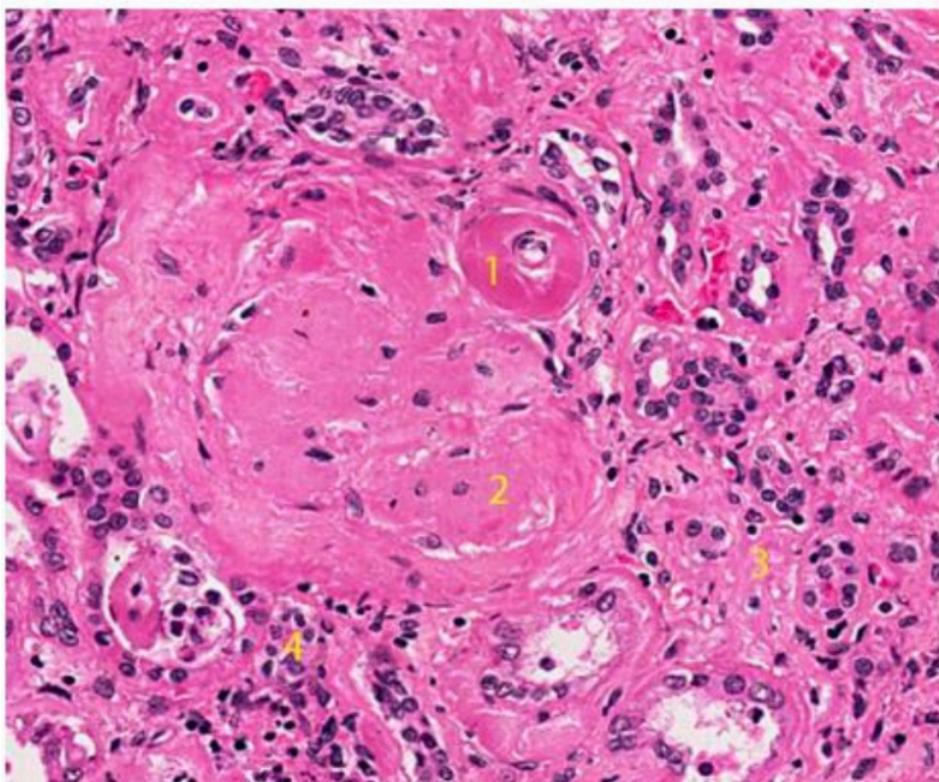
**39. A 21 year old girl comes to see you with PAINFUL ulcers in the genital area (labia) and inguinal lymphadenopathy. Has been sexually active since 15 years old. She is likely to have be infected with:**

- a. Trichomonas vaginalis
- b. Neisseria gonorrhoea
- c. Chlamydia trachomatis
- d. Herpes simplex virus 2
- e. Treponema pallidum

**40. Treatment of IBD**

- a. TNFa inhibitors are equally effective for both UC and Crohns
- b. Early immunosuppression and biological agents can be a useful treatment for both UC and Crohns
- c. Corticosteroids are best for maintaining remission and preventing relapse
- d. Sulfasalazine and mesalazine works better for Crohns than UC
- e. Infliximab is used commonly [Some other drug ... Infliximab?] has equal efficacy in both UC and Crohns.

**41. A 44 year old man with a 30 year history of poorly controlled type 1 diabetes. A renal biopsy was taken. Identify the features in this slide.**



- a. Hyaline arteriolosclerosis
- b. Medial hyperplasia
- c. Interstitial fibrosis
- d. Amylin deposition
- e. Lymphocyte infiltrate
- f. Neutrophil infiltrate
- g. Glomerulosclerosis
- h. Tubular necrosis

- 5) Hyaline arteriosclerosis (a)
- 6) Glomerulosclerosis (g)
- 7) Amylin Deposition (d)
- 8) Lymphocytic infiltrate (e)

**42. Best method for fluid monitoring in a patient with advanced chronic kidney disease**

- a. Weight
- b. Skin turgor
- c. Ankle swelling
- d. BP
- e. JVP

**43. What virulence factors allow Strep pneumoniae to survive in the lungs?**

- a. Polysaccharide capsule
- b. Flagella
- c. Streptokinase
- d. Carbohydrate cell wall
- e. Leukokinin

**44. Regarding prostate carcinoma, which of the following is the most correct?**

- a. It occurs on a background of nodular hyperplasia of the prostate
- b. It most commonly presents with urinary outflow obstruction
- c. Its diagnosis is assisted by alpha fetoprotein
- d. Biopsy shows transitional cell carcinoma
- e. Histopathological grading is of value in prognosis

**45. Which ONE of the following mechanisms best describes the action of benzodiazepines such as diazepam?**

- a. They act as a GABA receptor antagonist in the central nervous system
- b. They inhibit GABA transaminase leading to increased levels of GABA
- c. They block glutamate receptors in the central nervous system
- d. They facilitate GABA-mediated increases in chloride channel conductance
- e. They inhibit glutaminase and the production of glutamate

**46. A 2-year-old girl presents to emergency, she has had a fever for 24 hours. She has been eating, drinking and playing normally. Has a cough, runny nose and white exudate on tonsils. Tympanic membranes are normal; she is interacting normally. She has bruising on shins, cheek and ear, her parents say they don't know of specific incidents that caused this. Full blood count was normal. What is the most appropriate action in your management?**

- a. Oral penicillin
- b. Oral rehydration
- c. Admit to hospital
- d. Complete the online mandatory notification guide
- e. Parental reassurance

**47. All of the following are MAJOR diagnostic criteria for acute rheumatic fever, EXCEPT:**

- a. Migratory arthritis
- b. Carditis
- c. Erythema marginatum
- d. Widening of the PR interval on ECG**
- e. Sydenham's chorea

**48. What is the main mechanism behind Type III Hypersensitivity?**

- a. Recruitment of neutrophils
- b. Recruitment of CD8+ lymphocytes
- c. Antibody interaction with antigens on cell surfaces
- d. Complement activation (via the alternative pathway)**
- e. Degranulation of mast cells

**49. Regarding the management of Bipolar disorder, which is Correct?**

- a. Sexual dysfunction is a side effect of lithium
- b. Carbamazepine is 1st line treatment for bipolar
- c. Antidepressants should not be used alone as they may induce mania and cycling**
- d. Tricyclic antidepressants are good for long term use because they help prevent breakthrough depression
- e. Lithium has a wide therapeutic index

**50. In a person with multiple injuries in the Emergency Department what is the EARLIEST DETECTABLE sign of haemorrhage?**

- a. Tachycardia**
- b. Narrowed pulse pressure
- c. Decreased central venous pressure
- d. Decreased urinary output
- e. Hypotension

**51. Which antibiotic inhibits DNA gyrase**

- a. Macrolides
- b. Carbapenem
- c. Tetracycline
- d. Quinolones**
- e. Aminoglycosides

**52. The following is found in Acute Lymphoblastic Leukemia, EXCEPT**

- a. Neutropenia
- b. Anaemia
- c. Thrombocytopenia
- d. Massive splenomegaly**
- e. Presence of blasts in the bloodstream

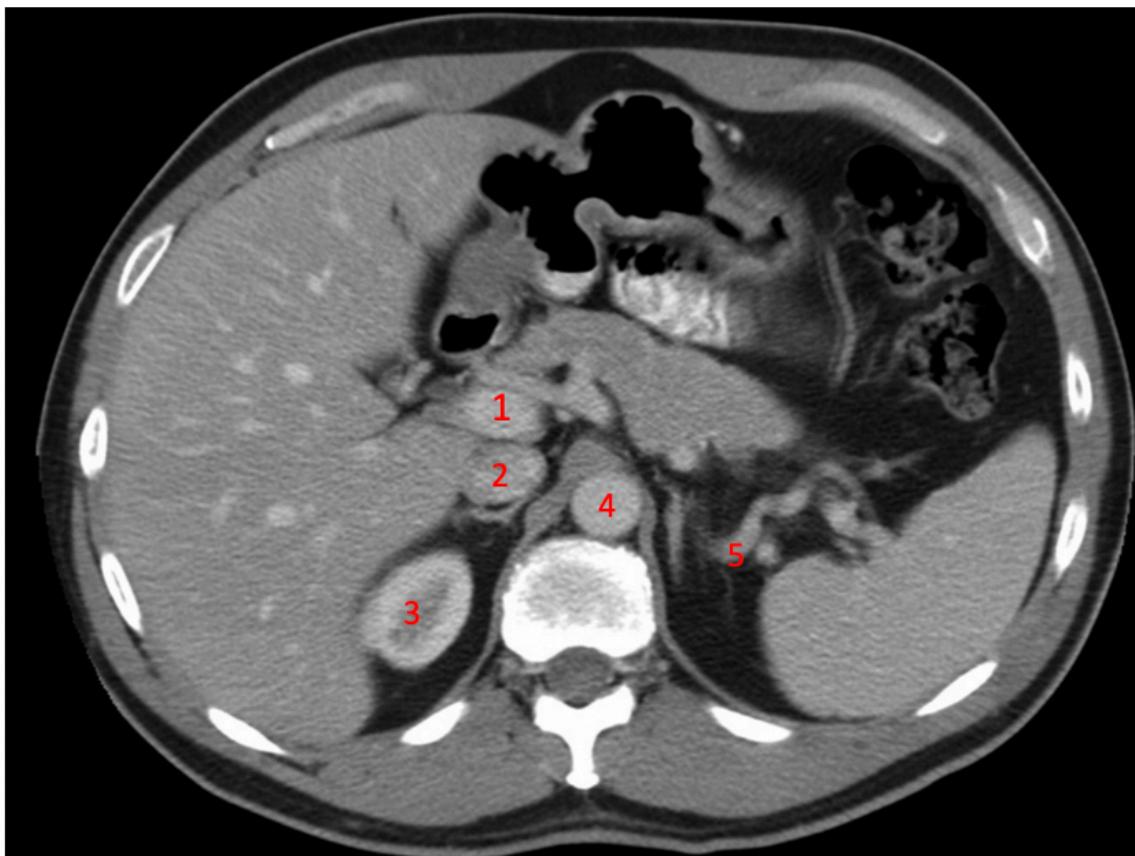
**53. Why NSAIDS increase MI risk**

- a. Reduced synthesis of PGE2
- b. Inhibition of the peroxidase action of COX-2
- c. Membrane Phospholipase A2
- d. Reduced synthesis of prostacyclin
- e. Increased synthesis of thromboxane A2

## 2018 Memorandum

Write your name down for a question and let's make sure we get all questions covered!!

**1. Identify the features 1-5 on the below image**



- a. Splenic vein
- b. Inferior vena cava
- c. Renal hilum
- d. Renal medulla
- e. Splenic artery
- f. Descending aorta
- g. Portal vein
- h. Celiac artery
- i. Inferior mesenteric vein

- 1. Portal vein (g)
- 2. IVC (b)
- 3. Renal medulla (d)
- 4. Descending aorta (f)
- 5. Splenic artery (e)

**2. A protrusion at the space between L5 and S1 would result in a lesion of which spinal root?**

- a. L3
- b. L4
- c. L5
- d. S1
- e. S2

**3. Central focus of population health ethics is**

- a. Implement health policy and delivery that targets specific groups that are vulnerable
- b. Achieve greatest good for the greatest number
- c. Reduce cost of healthcare through any measure
- d. Protect autonomy and individual freedom
- e. Provide a clearer societal definition of harm

**4. Which of the following regarding infective endocarditis is MOST CORRECT?**

- a. Enterococcus faecium is the most common cause
- b. Heart valve defect is essential for infection
- c. In IV drug users, *Viridans* is the most common *streptococci* cause
- d. In patients with colonic neoplasm, *streptococcus gallolyticus* is a common cause
- e. Only one set of blood cultures is required for diagnosis

**5. 18 yo presents to ED with acute appendicitis diagnosed. Has appendicectomy. Which potential complication of appendicitis poses the greatest danger to the patient?**

- a. Formation of a periappendicular abscess
- b. Generalised peritonitis + gangrenous perforation
- c. Adhesions to adjacent organs and the abdominal wall
- d. Portal pyemic spread leading to multiple liver abscesses
- e. Formation of a subphrenic abscess

**6. Regarding the treatment of schizophrenia, which is the MOST CORRECT:**

- a. Some adverse effects are linked to muscarinic agonism
- b. Typical agents are more likely to cause weight gain and diabetes compared to atypical agents
- c. The efficacy of anti-schizophrenic action correlates with D1 receptor blockade
- d. Movement disorders can emerge during chronic treatment with antipsychotics
- e. D2 blockade worsens symptoms

- 7. In the isovolumetric phase of left ventricular contraction, the mitral valve is \_\_\_\_\_ and the aortic valve is \_\_\_\_\_**
- Open, closed
  - Closed, open
  - Closed, closed**
  - Open, open
  - Half open, half closed
- 8. A 46 year old woman presents to her GP for a routine pap smear. She is otherwise well with no significant medical history. She mentions that her 78 year old maternal aunt was recently diagnosed with stage III colorectal cancer. Which of the following screening tests should you offer her?**
- FOBT
  - Colonoscopy
  - Fasting lipids**
  - Mammogram
  - Urinalysis
- 9. With regards to accuracy of diagnostic tests, which combination is MOST useful?**
- LR+ 10.0 and LR- 0.1**
  - LR+ 6 and LR- 0.2
  - LR+ 4 and LR- 0.4
  - LR+ 2 and LR- 0.5
  - LR+ 1 and LR +1
- 10. Unilateral blockage of a posterior inferior cerebellar artery may lead to all of the following abnormalities, EXCEPT:**
- Loss of pain and sensation on the ipsilateral face
  - Ipsilateral Horner's syndrome
  - Ipsilateral tongue weakness**
  - Nausea and vertigo
  - Hoarseness and dysphagia
- 11. Which ONE of the following is NOT a finding in a healthy pregnancy at 20 weeks gestation, when compared with the non-pregnant state?**
- Reduced haemoglobin concentration
  - Reduced red cell mass**
  - Reduced albumin concentration
  - Reduced serum creatinine
  - Increased plasma volume

**12. Ethically, which of the following is most accurate about the consequentialism/utilitarianism approach to public health/ population health issues?**

- a. The consequentialism/utilitarianism approach rarely achieves the aims and goals of public health
- b. The consequentialism/utilitarianism framework addresses inequalities, social justice and inequities
- c. The consequentialism/utilitarianism framework is best for society-wide issues
- d. The libertarianism approach envisages unlimited freedom for individuals
- e. Prioritising the majority can cause a disadvantage and forsake the needs and preferences of individuals, minority groups and disadvantaged

**13. Regarding scabies, all of the following are correct EXCEPT:**

- a. A female mite can live on human skin for 2 months
- b. It can be treated by benzyl benzoate
- c. The first sites of infection are the wrist and fingers
- d. It is caused by sarcoptes scabiei
- e. It can be diagnosed via an enzyme-linked immunoassay (ELISA)

**14. Which of these is NOT present in Rheumatoid Arthritis?**

- a. Synovial hyperplasia
- b. Destruction of articular cartilage by neutrophils
- c. Angiogenesis
- d. Infiltration of synovium by monocytes & lymphocytes
- e. Activation of macrophages by IL-1 and TNF

**15. All of the following are reasons for the higher prevalence of adverse drug reactions in older people EXCEPT**

- a. Older people are less likely to complain
- b. Relatively high rates of hypnotic drug prescription
- c. Reduced liver function in older people
- d. Taking more medicines
- e. Doses of prescribed medicines are often too high

**16. An obese woman is referred to HIIT exercise for 3 months. Which of the following is mostly likely to occur?**

- a. Her leg muscle mass increased
- b. There was no change in anaerobic capacity after 3 months
- c. Significant increase in insulin sensitivity at 3 months
- d. Decreased fat loss compared to regular bike exercise
- e. No change in maximum oxygen uptake

**17. 20 year old woman presents to GP with malaise, fever. The GP suspects measles and reports to the Public Health Officials, and also takes a throat swab etc.? The results confirm measles, and there are four other lab confirmed cases of measles. None of them have been overseas recently but they are all from the same high school. Which of the following is an artificial cause of a disease outbreak**

- a. Increase in incidence
- b. Increase in population size
- c. Change in population characteristics
- d. Random variation
- e. Change in laboratory protocols

**18. Regarding barriers to implementation of clinical practice guidelines, which one of the following is MOST correct?**

- a. Staff workload does not play a big role in preventing implementation of guideline
- b. Patient's beliefs don't prevent implementation of guideline
- c. Cost implementation is taken into account at ward level
- d. The perceived burden of illness does not affect the level of implementation
- e. Target training of specific guideline can markedly improve the implementation

**19. Which of the following is NOT correct regarding the sentinel lymph node**

- a. It is the first node of spread for a metastatic neoplasm
- b. It can only be found at operation using blue dye
- c. Not finding cancer in the node may be a false negative result
- d. Sentinel node biopsy can determine whether the primary cancer has spread
- e. Blue dye takes 15 mins to spread to regional lymph nodes

**20. What is the evidence based practice for management of chronic non-malignant pain?**

- a. Yoga and gabapentin
- b. Multidisciplinary pain management team
- c. GABA + Core strength exercises (pilates) + online education
- d. SSRIs and meditation and exercise
- e. Opiates and tricyclic antidepressants

**21. All of the following are relevant to treatment for malaria, EXCEPT:**

- a. The species involved
- b. The sex of the patient
- c. Severity of infection
- d. Presence of acquired immunity
- e. History of drug allergies

**22. Which genetic abnormalities is associated with POORER PROGNOSIS in childhood neuroblastoma?**

- a. Amplification of MYCN
- b. Amplification of NKTR (TRKA)
- c. Amplification of HER2
- d. Inhibition of tp53
- e. Inhibition of VEGFR

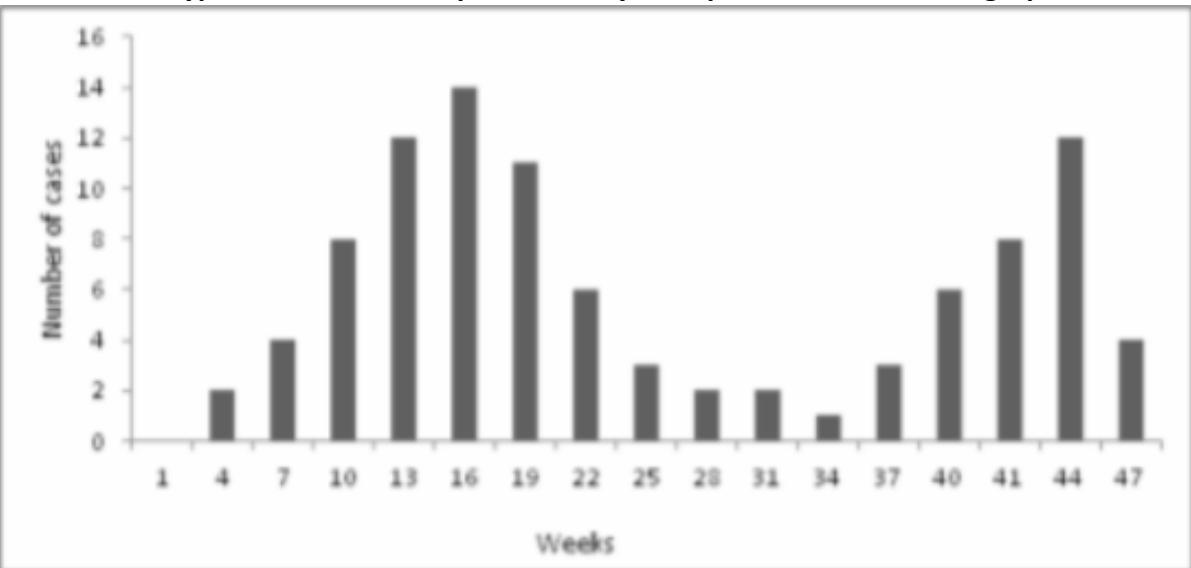
**23. Regarding the proton pump inhibitor omeprazole, which one of the following is correct:**

- a. Reduce parietal cell gastric acid secretion due to irreversible blockage of H+, K+ - ATPase
- b. Accelerates gastric emptying and reduces activity of the lower oesophageal sphincter
- c. Short duration of action thus not clinically useful
- d. Decreases gastric pH but doesn't decrease secretion volume
- e. Rarely used for gastro-oesophageal reflux

**24. All of the following may occur in stroke, EXCEPT:**

- a. Loss of one visual field while retaining the other
- b. Loss of the ability to recognise faces but retained ability to read
- c. Loss of ability to see objects in motion but retention of ability to recognise them
- d. Retained ability to differentiate red from green but loss of ability to differentiate red from blue
- e. Loss of ability to read, retained ability to see objects in motion

**25. What type of outbreak is represented by the epidemic curve in the graph below?**



- a. Point source
- b. Intermittent common source
- c. Continuous common source
- d. Propagated
- e. The curve is not indicative of an outbreak

**26. All of the following are contained within the spermatic cord EXCEPT:**

- a. Ductus deferens artery
- b. Cremasteric artery
- c. Ilioinguinal nerve
- d. Genital branch of the genitofemoral nerve
- e. Pampiniform plexus

**27. An 18-month old child can only say 3 words, can't jump with 2 feet in the air and can't use a spoon. However, he helps with undressing and is able to run with confidence. But he has tantrums and bangs head on floor occasionally. What would you do?**

- a. Reassure the parent that this is normal
- b. Perform a developmental screen
- c. Perform a developmental screen
- d. Refer to the multi-disciplinary early intervention team
- e. Investigate for neglect

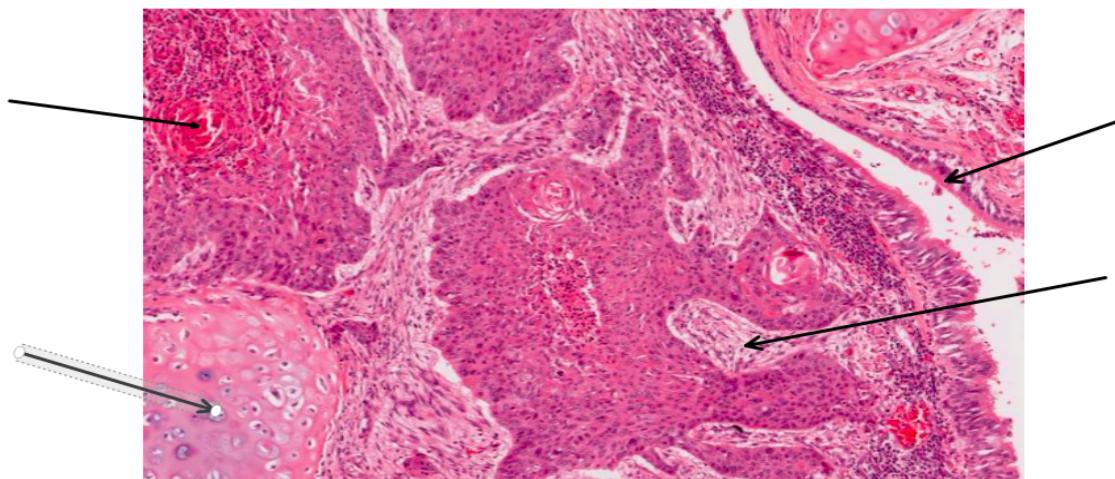
**28. Which drug is indicated in methicillin-resistant staph aureus**

- a. Ampicillin
- b. Flucoxicillin
- c. Ticarcillin
- d. Vancomycin
- e. Clindamycin

**29. Regarding the aminoglycosate anti-inflammatory drug mesalazine, which of these is MOST CORRECT**

- a. Results in better outcomes in Crohn's compared to Ulcerative Colitis
- b. It is not recommended during the remission phase of IBD
- c. **It has less gastrointestinal side effects compared to Sulphasalazine**
- d. It is broken down into 5-aminosalicylic acid and sulfapyridine metabolites in the liver
- e. Its mechanism of action is unrelated to inhibition of synthesis of inflammatory cytokines

**30. Please identify the feature indicated by arrows in the below section**



- A) Squamous cell carcinoma
- B) Desmoplastic change
- C) Chondrocyte
- D) Keratin Pearl

**31. What supplies the superior border of the pancreas?**

- a. Left epiploic artery
- b. Right epiploic artery
- c. Gastroduodenal artery
- d. **Splenic artery**
- e. Superior mesenteric artery

**32. Baby born via Caesarean section, unrousable. Mother blood type A+, gestational diabetes, group B strep negative, baby born decreased suck reflex etc. weight is 4300g. What must you do?**

- a. Blood glucose
- b. FBC
- c. Electrolytes
- d. Blood culture
- e. Cranial CT

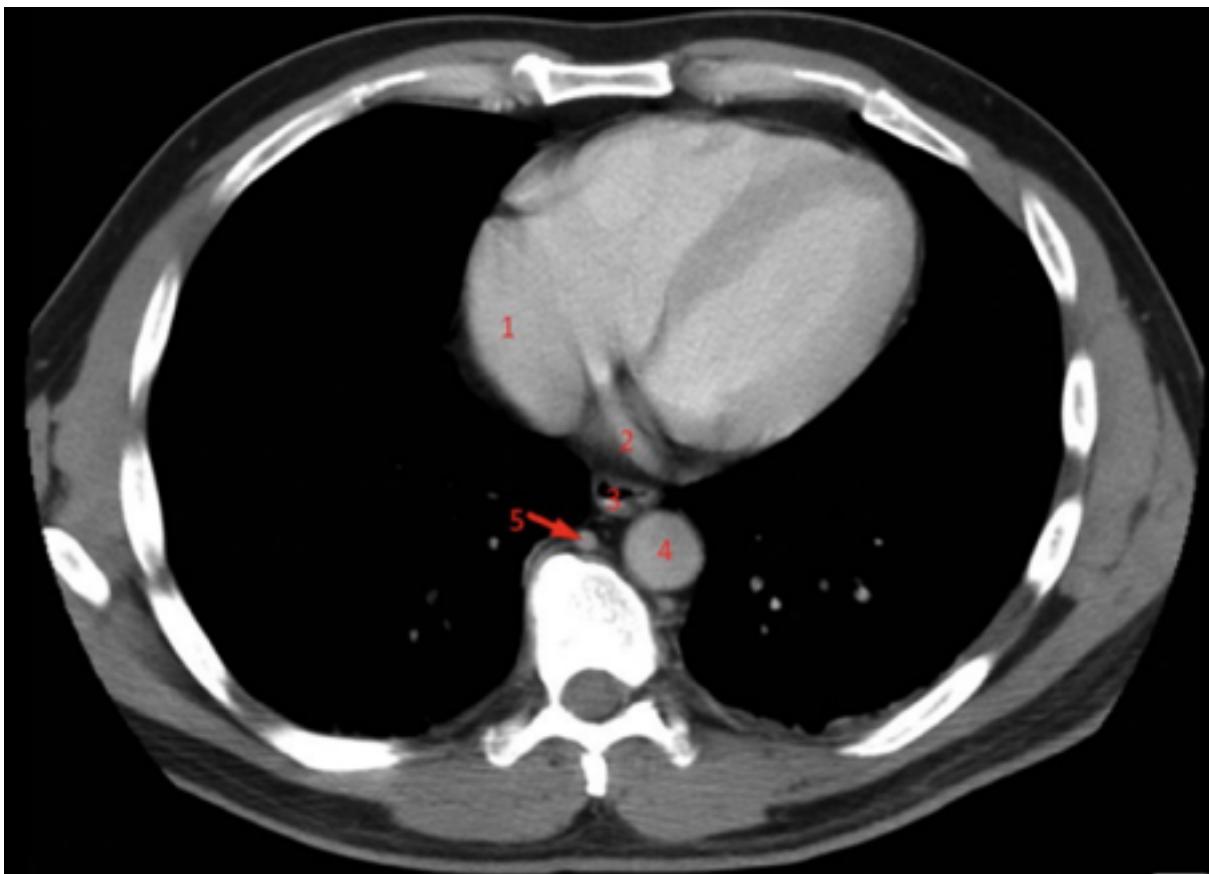
**33. A 50-year old woman presents to her GP complaining of urinary frequency and a burning sensation when passing urine. Given that her symptoms are highly suggestive of a urinary tract infection, the GP decides to treat her with Trimethoprim. Which ONE of the following statements is MOST CORRECT in relation to the mode of action of Trimethoprim?**

- a. It is a competitive inhibitor of dihydrofolate reductase
- b. It is a metabolic analogue of para-aminobenzoic acid which leads to the inhibition of folic acid synthesis
- c. It binds to penicillin-binding proteins and inhibits peptidoglycan cross linking
- d. It is effective against bacteria that require pre-formed folate
- e. It attaches to the 50S ribosome leading to inhibition of protein synthesis

**34. 83 yo female with congestive cardiac failure presents with sudden onset shortness of breath, coughing up a small amount of blood. Her breathing was rapid and shallow and she had sharp chest pain upon inspiration. Her pulse was 88/min and irregular. What is the MOST LIKELY cause of her presentation:**

- a. Acute viral pneumonia associated with pleurisy
- b. Acute necrotising bacterial pneumonia
- c. Decompensated HF following a silent MI
- d. DVT → PE
- e. Atrial thrombosis → PE

**35. Identify the anatomy:**



1. Right atrium
2. Coronary sinus
3. Oesophagus
4. Descending aorta
5. Azygous vein

**36. What is the gold standard test for osteoporosis diagnosis?**

- a. X-Ray
- b. Alkaline Phosphatase
- c. Bone resorptive markers
- d. DEXA bone scan
- e. Vitamin D levels

**37. A 21-year old woman presented to the GP with a 2-week history of painful ulcers on the labia. She has had unprotected sex with multiple partners since she was 15 years old. Physical examination showed labial ulcers and inguinal lymphadenopathy.**

**Which ONE of the FOLLOWING MICROORGANISMS could be responsible for these ulcers?**

- a. *Trichomonas vaginalis*
- b. *Chlamydia trachomatis*
- c. *Neisseria gonorrhoeae*
- d. **Herpes simplex virus 2**
- e. *Treponema pallidum*

**38. 63 yo male with T2DM diagnosed 30 years ago and had microalbumuria 2 years ago. He now presents with tiredness and swelling of his feet and 10kg weight gain. Patient admits he hasn't been very compliant with his medication. What is the MOST LIKELY finding upon investigation of this patient.**

- a. Microscopic haematuria
- b. **24 urine protein > 3.5 grams**
- c. Hypercholesterolaemia
- d. Serum creatinine > 300
- e. Sodium < 120

**39. Clonidine is used in the treatment of opioid dependence because:**

- a. **It reduces withdrawal symptoms of opioid withdrawal including nausea, vomiting, cramps, sweating, tachycardia and hypertension**
- b. It is an  $\alpha_2$  adrenergic agonist which increases neurotransmission from the locus coeruleus
- c. It activates the opioid receptor to reduce withdrawal symptoms
- d. It reduces cravings for opioids and decreases the highs and lows seen with opioid use
- e. It is a partial agonist of the opioid receptor and thus is a competitive antagonist

**40. Most likely INITIAL lymphatic spread from carcinoma on tip of tongue**

- a. **Submental?**
- b. Submandibular
- c. **Juguloomohyoid**
- d. Jugulodigastric
- e. Deep parotid

**41. Which of the following is NOT a core component of delirium?**

- a. Acute onset
- b. Poor attention
- c. Poor memory
- d. Alterations in the sleep/wake cycle
- e. Fluctuating course

**42. A mother brings her 18 month old to GP with 48h not eating well and 24h vomiting, diarrhoea, low grade fever and dehydration. What is most likely causative organism:**

- a. *Campylobacter jejuni*
- b. Rotavirus
- c. Giardia lamblia
- d. Enterovirus
- e. *Salmonella typhimurium*

**43. A 55 year old man presents to ED with severe dyspnoea. An investigation of his arterial blood gases was done:**

pH 7.30 (7.35-7.45)  
PCO<sub>2</sub> 50mmHg (35mmHg-45mmHg)  
PO<sub>2</sub> 80mmHg (80mmHg-100mmHg)  
HC0<sub>8</sub> 18mmol/L (22mmol/L-26mmol/L)

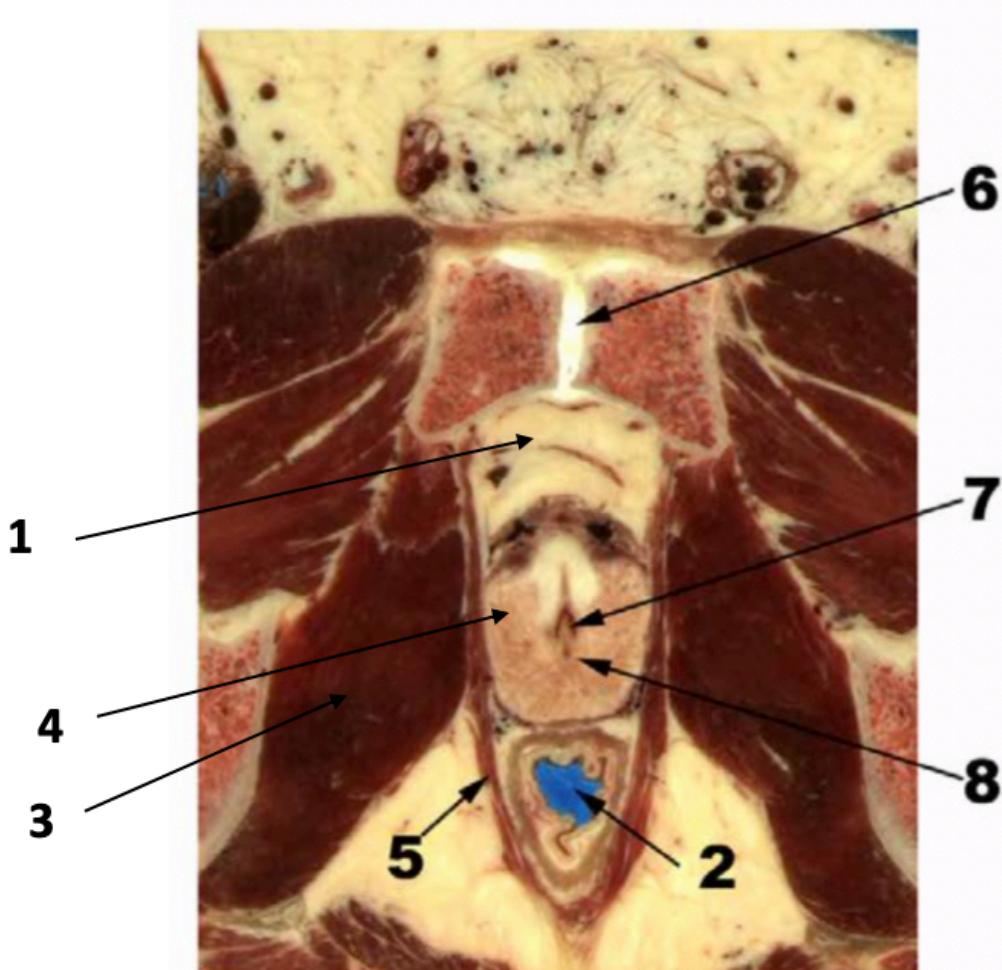
**Based on the results of the arterial blood gases, what is the most likely cause of his presentation?**

- a. Anxiety resulting in hyperventilation
- b. Long-standing COPD
- c. End stage chronic kidney disease
- d. Sepsis complicated by ARDS
- e. Pulmonary fibrosis

**44. Thrombolytic drugs are used in the acute treatment of stroke. Which one of the following best explains the mechanism of action of this class of Drugs?**

- a. They convert fibrinogen to soluble fibrin via the removal of fibrinogen peptide A
- b. They bind to the active site of plasmin preventing the cleavage of insoluble fibrin into soluble fibrin monomers
- c. They convert plasminogen into plasmin, which then cleaves insoluble fibrin into soluble fibrin monomers
- d. They prevent the formation of insoluble fibrin via the inhibition of the coagulation pathway
- e. They bind to the lysine-binding site of plasmin preventing binding and cleavage of insoluble fibrin into soluble fibrin monomers

45. Identify the features indicated by arrows 1, 3, 4, 7 and 8



- 1. Bladder
- 3. Obturator internus
- 4. Prostate gland
- 7. Colliculus Seminalis
- 8. Ejaculatory Duct

46. Woman presents to ED with a 3 day history of jaundice, dark urine and pale stools.

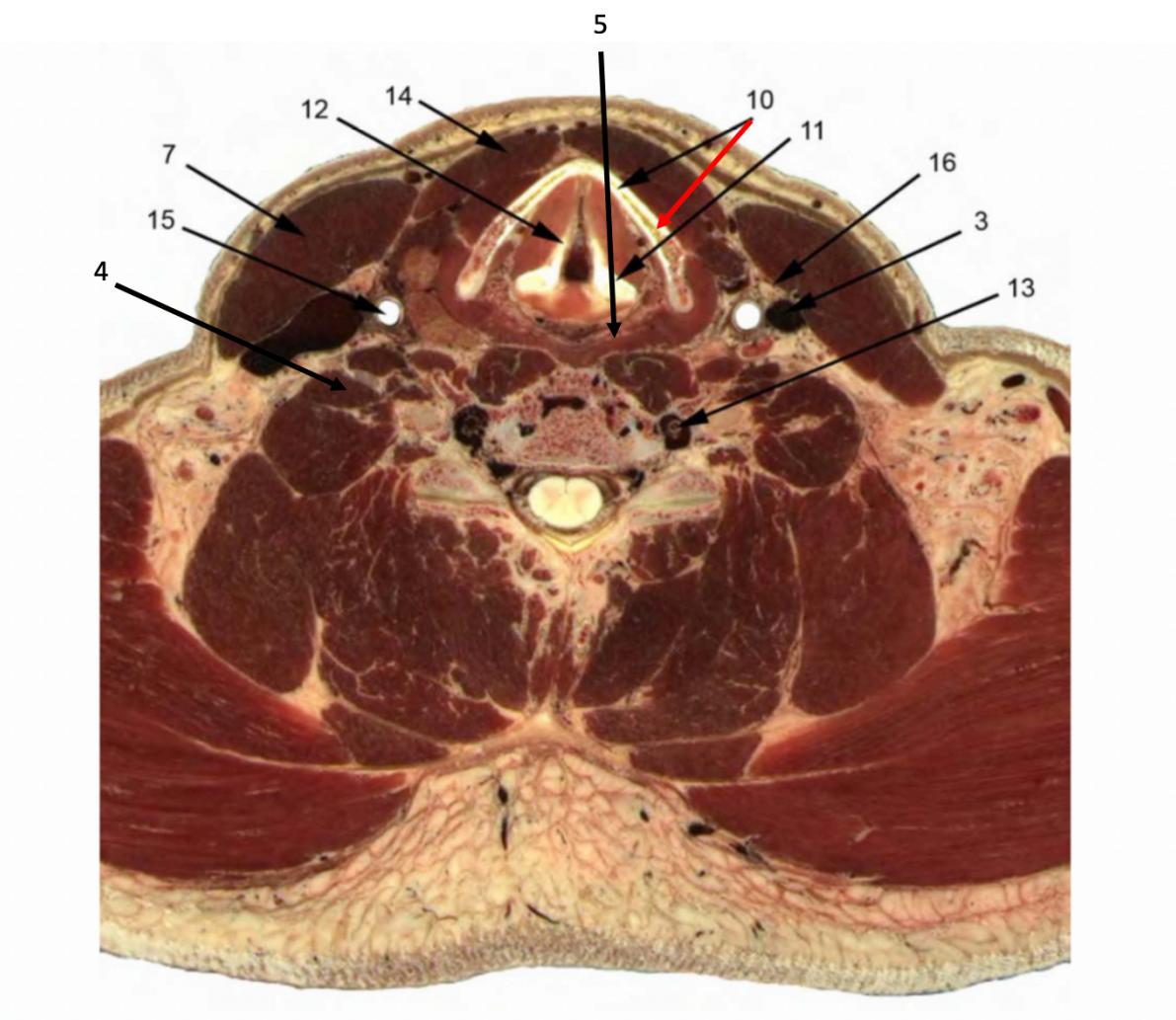
Her temperature was 39.2 and upon palpation there was tenderness in the upper right quadrant of the abdomen. What is the most likely cause?

- a. Bacterial cholangitis
- b. Carcinoma of the pancreatic head
- c. Liver Abscess
- d. Viral hepatitis

**47. Which ONE of the following virulence factors is MOST responsible for the ability of *streptococcus pneumoniae* to survive in the lungs?**

- a. Cell wall carbohydrate
- b. Flagellar protein
- c. Leukocidin
- d. Polysaccharide capsule
- e. Streptokinase

**48. Use the drop down menu to label structures 3, 4, 5, 10 (red) and 14.**



- 3. Internal jugular vein
- 4. Scalenus Anterior
- 5. Cricothyroid muscle
- 10 (red). Thyroid lamina
- 14. Sternothyroid

**49. 65yo male presents with microcytic, hypochromic anaemia 85. He is otherwise asymptomatic and has no other symptoms. Physical examination was unremarkable. What would the most appropriate initial investigation?**

- a. Upper GI endoscopy
- b. Colonoscopy
- c. Flexible sigmoidoscopy
- d. FOBT

**50. MAJOR diagnostic criteria for acute rheumatic fever EXCEPT**

- a. Migratory arthritis
- b. Long PR interval on ECG
- c. Carditis
- d. Erythema marginatum
- e. Sydenham's chorea

**51. A 60 y/o female, arterial line sepsis, hypoxic and dyspneic, most likely cause**

- a. Diffuse alveolar wall injury with pulmonary interstitial oedema
- b. LV decompensation with pulmonary alveolar edema
- c. Diffuse thromboembolic events with multiple pulmonary infarcts
- d. Diffuse bilateral pyogenic bacterial pneumonia
- e. Bronchiole mucus plugging

**52. Why do NSAIDS increase MI risk:**

- a. Reduced synthesis of PGE2
- b. Inhibition of the peroxidase action of COX-2
- c. Membrane Phospholipase A2
- d. Reduced synthesis of prostacyclin
- e. Increased synthesis of thromboxane A2

**53. A 63yo man smoker of 30 years. Breathless for a long time. (no cough, sputum).**

**Diagnosed with COPD – pathogenesis**

- a. Airway wall fibrosis of the bronchioles
- b. Smooth muscle hyperplasia of the bronchioles
- c. Goblet cell hyperplasia in the bronchioles
- d. Chronic inflammation in the major bronchi
- e. Mucus gland hypertrophy in major bronchi

**54. In a person with multiple injuries in the Emergency Department what is the EARLIEST DETECTABLE sign of haemorrhage?**

- a. Tachycardia
- b. Narrowed pulse pressure
- c. Decreased central venous pressure
- d. Decreased urinary output
- e. Hypotension

**55. Which of the following correctly describes the mechanism of action of the benzodiazepine, diazepam?**

- a. They act as a GABA receptor antagonist in the central nervous system
- b. They inhibit GABA transaminase leading to increased levels of GABA
- c. They block glutamate receptors in the central nervous system
- d. **They facilitate GABA-mediated increases in chloride channel conductance**
- e. They inhibit glutaminase and the production of glutamate

**Q56. What is your zID so we can give you feedback?**