

PTS 2a Mock SBA Series 2020

Paper 4- [Questions]- Version 3



Examination instructions

- Time allocated for examination: **2 hours**
- You are **not permitted** to leave the examination hall in the first **90 minutes**.
- Please write your **student number** at the top of the answers page.
- You are permitted to use a Sheffield University approved **calculator** should you wish.
- The use of mobile phones or other **electronic devices is strictly prohibited** in this exam and should be handed in or switched off for the duration of the exam.
- Please complete all **100 questions** provided.
- The paper consists of **100 marks** in total.

Disclaimer:

The following paper has been **written for students by students** and bears no reflection on the real exam. This is a learning tool that has not been reviewed by the University of Sheffield and therefore the use of this paper for learning are at the student's discretion.

Please **do not share** this document on **google drives** or **directly** to **future 2a students**, this takes away from their opportunity to complete the mock SBA in the run up to their exams when it has maximal impact as a revision resource. **This mock paper will be updated and repeated for future years.** Thank you.

Chief Exam Editor

Andrew Maud

SBA Question Contributors

Jack Bardwell

Natalie Chann

Rachel Jones

Mohammad S Khan

Joyce Lim

Kristian Mayland

Lizzie McNamara

Mahad Mohamoud

Sophie Parker

Scarlett Strickland

1. **Which of the following would you expect to see in an individual with COPD?**
 - A. FEV<80% predicted. FEV1/FVC>0.8
 - B. FEV<80% predicted. FEV1/FVC<0.7
 - C. FEV>80% predicted. FEV1/FVC<0.7
 - D. FEV>80% predicted. FEV1/FVC<0.8
 - E. FEV<80% predicted. FEV1/FVC>0.7

2. **Which of the following is not a sign you would expect to find in an asthmatic patient?**
 - A. Decreased air entry
 - B. Dullness to percussion
 - C. Hyper-inflated chest
 - D. Hyper-resonant percussion
 - E. Tachypnoea

3. **According to NICE Guidelines 2020, what is the correct stepwise pharmacological management for an adult diagnosed with asthma?**
 - A. SABA→High ICS→LABA→LTRA→MART→Low ICS→Mod ICS
 - B. SABA→Low ICS→LTRA→LABA→MART→Mod ICS→High ICS
 - C. SABA→ Low ICS→ LABA→MART→Mod ICS→LABA→ High ICS
 - D. LABA→ Low ICS→ LTRA→ SABA→ MART→ Mod ICS → High ICS
 - E. Low ICS→ SABA→ LABA→ LTRA→ MART→ High ICS→ Mod ICS

4. **Which of the following types of lung cancer is associated with asbestos exposure?**
 - A. Adenocarcinoma
 - B. Anaplastic carcinoma
 - C. Large cell carcinoma
 - D. Small cell lung cancer
 - E. Squamous cell carcinoma

5. **Which of the following is not a common site for lung cancer to metastasise to?**
 - A. Adrenal glands
 - B. Bone
 - C. Brain
 - D. Breast
 - E. Liver

6. **Steve is a 55-year-old pilot who has smoked 20 cigarettes a day for as long as he can remember, he has noticed pain and swelling in his right calf for a number of weeks which he has largely ignored, however he is now concerned as he has been feeling some pain in his chest. Which of the following tests would be most definitive in confirming the likely diagnosis?**
 - A. Compression ultrasound
 - B. Chest X Ray
 - C. CT pulmonary angiogram
 - D. D-Dimer
 - E. Doppler ultrasound

- 7. Which of the following causes atypical pneumonia?**
- A. Klebsiella pneumonia
 - B. Haemophilia influenza
 - C. Streptococcus pneumonia
 - D. Mycoplasma pneumonia
 - E. Staphylococcus aureus
- 8. Margaret is a 66-year-old lady admitted to A&E appearing noticeably confused and feverish. Her observations are taken and she has a high temperature of 38.5, pulse of 110, respiratory rate of 35, a saturation of 87% and a blood pressure of 85/65. The nurse taking her obs notices that she has a productive cough and that her sputum is green. Tests show she has urea of 8mmol/L. On examining Margaret, you note dullness to percussion on her left side. Taking all of this into account, what is Margaret's CURB 65 score?**
- A. 2
 - B. 3
 - C. 4
 - D. 5
 - E. 6
- 9. A patient recently diagnosed with TB is started on Ethambutol, which of the following is a potentially significant side effect of this drug?**
- A. Arthralgia
 - B. Nausea
 - C. Neuropathy
 - D. Optic neuritis
 - E. Orange urine
- 10. Cystic fibrosis is an inherited autosomal recessive disease caused by genetic mutations, but which chromosome is affected?**
- A. 6
 - B. 7
 - C. 13
 - D. 14
 - E. 21
- 11. A patient who you have prescribed a drug to has not been taking their medication. Which of the following is an intentional reason for non-adherence?**
- A. Patient cannot pay
 - B. Patient cannot understand the instructions
 - C. Patient has encountered problems during the course of treatment
 - D. Patient has forgotten to take the medication
 - E. Patient preference
- 12. Which of the following is not one of the '5 Moments for Hand Hygiene'?**
- A. After body fluid exposure
 - B. After touching a patient
 - C. After touching a patient's surroundings
 - D. Before body fluid exposure
 - E. Before touching a patient

- 13. Mrs Zince, a 29-year-old lady, presents to your GUM clinic with a painless genital ulcer. She has had unprotected sex with a new sexual partner in the last 6 months. You carry out some tests and the EIA IgM test is positive for syphilis. Mrs Zince has no allergies and she is not currently pregnant. What is the first line treatment for confirmed syphilis in this case?**
- A. Azithromycin
 - B. Benzathine penicillin
 - C. Ceftriaxone
 - D. Doxycycline
 - E. Erythromycin
- 14. Mr Yoman is a 50-year-old male who presents to your GP clinic. He has been complaining of colour changes in his fingers for the last 2 years which occur in short episodes from time to time. He has noticed that his fingers occasionally go white in colour, then blue, then red. He has also noticed some tingling and numbness throughout all fingers which has also developed, and he has found his hands are more weak than normal, meaning he has been struggling to pick up objects. When speaking to Mr Yoman, it is apparent that he works on a building site and often uses a hammer drill. What is the most likely diagnosis?**
- A. Carpel Tunnel Syndrome
 - B. Dupuytren's contracture
 - C. Hand arm vibration syndrome
 - D. Repetitive strain injury
 - E. Systemic lupus erythematosus
- 15. Which of these conditions is not a complication of obesity?**
- A. GORD
 - B. Hashimoto's disease
 - C. Obstructive sleep apnoea
 - D. Osteoarthritis
 - E. Pancreatitis
- 16. Jack, a 21-year-old male, presents to A&E with their housemate. He is complaining of vomiting and a severe headache and leg pain. His observations show that he is tachycardic, tachypnoeic, hypotensive and has a temperature of 39.4. After a thorough examination you document in the notes the presence of a non-blanching purpuric rash on their back. You suspect meningococcal meningitis and you treat appropriately. You report the case to Public Health England and decide that you should give prophylactic medication to their housemate. Which medication would you give to their housemate?**
- A. Amoxicillin
 - B. Benzylpenicillin
 - C. Ceftriaxone
 - D. Ciprofloxacin
 - E. Clarithromycin

17. Which group of conditions are the most common cause of work-related ill health in the UK workforce?

- A. Cancer
- B. Musculoskeletal conditions
- C. Occupational lung disease
- D. Noise-induced sensorineural hearing loss
- E. Stress, anxiety and depression

18. What is the definition of sensitivity?

- A. The proportion of patients who have the disease and test positive
- B. The proportion of patients who don't have the disease and test negative
- C. The proportion of patients who test positive who have the condition
- D. The proportion of patients who test negative who don't have the condition
- E. How well the screening test works

19. Which of the following is an example of secondary prevention?

- A. Diabetic eye screening
- B. Long term antiplatelet therapy following a myocardial infarction
- C. NHS health check
- D. Statin use in people with a QRISK > 10%
- E. Immunisation programmes

20. Which of the following is not a screening programme in the UK?

- A. Abdominal aortic aneurysm programme
- B. Breast screening programme
- C. Cervical screening programme
- D. Newborn and Infant Physical Examination screening programme
- E. Prostate screening programme

21. Tom is a 65-year-old gentleman who presented with a 12hr history of sudden headache and difficulty walking due to problems with his balance. He describes feeling nauseated and has vomited twice. When taking a history the junior doctor also noted that Tom's speech was slurred. What is the most likely diagnosis?

- A. Cerebellar stroke
- B. CNVII Palsy
- C. Postural Hypotension
- D. SAH
- E. TIA

22. You are an A&E doctor and attend to Mary at 12.30pm who has presents with stroke symptoms. She recalls that the symptoms started when she went out to get groceries at 10am. What is the immediate course of action for this Pt?

- A. Carry out ABCD2 risk assessment
- B. Order a CT to be done within 1hr
- C. Order an MRI to be done within 1hr
- D. Start her on aspirin
- E. Start her on tissue plasminogen activator (alteplase)

- 23. Betty is a 74-year-old war veteran who presents in your clinic complaining that she feels quite depressed recently. When you ask more about this, she tells you that she can't do the things used to do as it takes longer for her to "get going". You notice while she is speaking to you her right hand seems to be shaking as its resting on her knee. What is the most likely diagnosis?**
- A. Depression
 - B. GBS
 - C. Huntington's disease
 - D. Myasthenia Gravis
 - E. Parkinson's disease
- 24. Rob is a 45-year-old construction worker who has been brought in by his wife as he is having trouble with his walking. In his own words his "right side is not as powerful as it once was". He has been a smoker all his life and smokes 20 cigarettes a day. His father died of prostatic cancer and his mother was diagnosed with breast cancer when she was 50-years-old. What is your most likely diagnosis?**
- A. Diabetic neuropathy
 - B. Glioblastoma multiforme
 - C. Lung cancer
 - D. Secondary brain tumour
 - E. Stroke
- 25. Molly is a 22-year-old lady who has come in for her GP appointment with her sister. She recently recovered from a viral infection and is feeling better now. However, she complains that when she goes for a walk on flat land she slows down after a while and needs to rest. This has been an ongoing situation and she is becoming concerned about it. When speaking to her she tells you that she has Coeliac disease. Her sister also mentioned that Molly finds it difficult to have a conversation as her voice tends to struggle to finish her sentences. What is that most likely diagnosis?**
- A. Brain tumour
 - B. Charcot Marie Tooth
 - C. GBS
 - D. Multiple Sclerosis
 - E. Myasthenia Gravis
- 26. Victor has come into A&E complaining of headache that as he says, "is just not going away". Upon further enquiry he remembers that he was shaving and that started the headache. He goes on to say that he had breakfast after which aggravated the pain. He then decided to take paracetamol but that did not help. What is the most likely diagnosis?**
- A. Cluster headache
 - B. Headache caused by Stress
 - C. Migraine
 - D. Temporal Arteritis
 - E. Tension headache

- 27. Tanya, a 25-year-old lady, has present to your clinic with symptoms of carpal tunnel syndrome. Which of the following nerve roots are responsible for this condition?**
- A. C5/6
 - B. C5-T1
 - C. C6/7
 - D. C7/8
 - E. T1/2
- 28. Roger is given a diagnosis of epilepsy and is concerned about his job as he is a taxi driver. He is told by the neurologist that he won't be able to drive and would need to inform the DVLA about his condition. For how long does Roger need to be seizure free in order to have his license reinstated to drive again?**
- A. 6 months
 - B. 9 months
 - C. 12 months
 - D. 18 months
 - E. 24 months
- 29. Joanna has been referred by her GP to the neurological clinic. She comes to the GP with her partner who describes a recent episode Joanna suffered on her behalf because she cannot recall anything. The partner recalls that Joanna was sitting on the sofa when both her limbs became stiff and she subsequently started to shake uncontrollably. He said her eyes were open and as he kept calling her name she was not responding to his words. Joanna mentions that she remembers that her tongue was quite sore and she was quite confused after what had happened. From the history what is the most likely diagnosis?**
- A. Focal seizure of the frontal lobe
 - B. Generalised tonic-clonic seizure
 - C. Myoclonic seizure
 - D. Secondary generalised seizure
 - E. Tonic seizure
- 30. Jason, a 34-year-old builder, has been brought to A&E by his friend. Jason developed sudden intense back pain while he was at work and subsequently developed weakness and sensory loss in both of his legs. Which of the following diagnoses does his history point to?**
- A. Muscle spasm
 - B. Spinal cord compression
 - C. Peripheral neuropathy
 - D. Prostatic cancer
 - E. Vertebral fracture

- 31. Susan, a 63-year-old female, attends a General Practice appointment complaining of joint pain. She describes that she has morning stiffness for about 20 minutes, knee pain and has noticed difficulty getting in and out of cars. The GP refers her for a hip and knee X-ray. Which of the following is unlikely to be seen on X-Ray?**
- A. Bone erosions
 - B. Loss of joint space
 - C. Osteophytes
 - D. Subchondral cysts
 - E. Subarticular sclerosis
- 32. Gareth, a 78-year-old male, attends General Practice complaining of a swollen joint. On examination the GP notices a hot, erythematous, swollen metatarsophalangeal joint of the patient's left big toe. The GP suspects a diagnosis of gout and orders investigations. Which of the following is likely to be seen with joint fluid aspiration and microscopy?**
- A. Needle shaped crystals, negative birefringence under polarised light
 - B. Needle shaped crystals, no birefringence under polarised light
 - C. Needle shaped crystals, positive birefringence under polarised light
 - D. Rhomboid shaped crystals, negative birefringence under polarised light
 - E. Rhomboid shaped crystals, positive birefringence under polarised light
- 33. Josie, a 52-year-old female, attends General Practice complaining of severe back pain. The GP saw her patient 2 weeks ago for mechanical back pain and it hasn't gotten better since. The GP decides to prescribe a stronger painkiller, Naproxen. What is the mode of action of Naproxen?**
- A. Inhibits enzyme dihydrofolate reductase
 - B. Inhibits osteoclasts-mediated bone resorption
 - C. Non-selective inhibitors of COX1 + COX2 enzymes
 - D. Selective inhibitor of COX1 enzyme
 - E. Selective inhibitor of COX2 enzyme
- 34. Eric, a 19-year-old male, attends General Practice complaining of back stiffness. He mentions that this pain improves with exercise and worsens with rest. On examination he has limited lumbar spine mobility. The GP suspects a diagnosis of ankylosing spondylitis, which is associated with HLA-B27. Ankylosing spondylitis constitutes one of many "seronegative spondyloarthropathies" due to its associated with HLA-B27. Which of the following is not considered a seronegative spondyloarthropathy?**
- A. Inflammatory bowel disease (IBD) associated arthritis
 - B. Juvenile idiopathic arthritis
 - C. Psoriatic arthritis
 - D. Reactive arthritis
 - E. Septic arthritis

- 35. Mayra, a 34-year-old female, attends General Practice complaining of hand stiffness. She has noticed recently that her hands are stiff for at least an hour in the morning, making it difficult for her to do up the buttons on her work shirt. She mentions that this eases after she's "warmed up a bit". Which of the following signs would you be least likely to see on her hands?**
- A. Bouchard nodes
 - B. Boutonnière deformity of thumb
 - C. Swan neck deformity
 - D. Symmetrical swollen joints
 - E. Ulnar deviation
- 36. Lynne, a 53-year-old female, attends A&E with a painful arm. She explains that she accidentally walked into her door and was overcome with intense pain. On examination, the arm looks deformed and swollen. An x-ray confirms a Colles' fracture and so the patient is referred for a DEXA bone scan. Which of the following T-scores corresponds to a diagnosis of osteoporosis?**
- A. $1 \leq T < 2.5$
 - B. $-1 < T$
 - C. $-2.5 < T < -1$
 - D. $T \leq -2$
 - E. $T \leq -2.5$
- 37. Raj, a 20-year-old male, attends General Practice complaining of joint pain. He mentions that he has been experiencing this for the past week and that it started suddenly. He also mentions some pain whilst urinating but has recently had a new sexual partner after a year without intercourse and so has attributed it to that. On a separate note, he asks for some eye drops as his eyes have been "gunky" in the mornings like when he was a child. What is the most likely cause of his symptoms?**
- A. Psoriatic arthritis
 - B. Urethritis
 - C. Conjunctivitis
 - D. Reactive arthritis
 - E. Septic arthritis
- 38. Clive, a 64-year-old male, develops osteomyelitis after a total knee replacement. A culture is sent to the microbiologists. The causative organism is purple and circular on gram stain, produces bubbles on a catalase test and is positive for coagulase. What is the causative organism?**
- A. Escherichia coli
 - B. Haemophilus influenzae
 - C. Salmonella
 - D. Staphylococcus aureus
 - E. Streptococcus pneumoniae

39. Daisy, a 63-year-old female, presents to General Practice concerned about her risk of developing osteoporosis. She mentions that her mother had very weak bones and wants to know what her chances of having this are. The GP explains that they are able to work out the 10-year probability of having an osteoporotic fracture. What is the name of this risk assessment tool?
- A. ABCD₂
 - B. FRAX
 - C. Glasgow-Blatchford score
 - D. QRisk3 score
 - E. Well's score
40. Frank, a 64-year-old male, attends GP after receiving treatment for gout. The patient has had previous episodes of gout and so the GP wants to start a medication that will help prevent the patient from having further episodes. This drug targets an enzyme which converts hypoxanthine into xanthine during uric acid metabolism. What drug does the GP want to prescribe?
- A. Allopurinol
 - B. Colchicine
 - C. Diclofenac
 - D. Hydroxychloroquine
 - E. Ibuprofen
41. A 50-year-old woman presents to the A&E department with a 5-day history of jaundice and right upper quadrant pain, associated with dark urine and pale stools. She drinks 5 units of alcohol/week and denies any weight loss. Based on presentation and liver function test results below what is the most likely diagnosis?
- > Bilirubin 40 [3-17]
 - > ALT 40 [3-40]
 - > AST 48 [3-30]
 - > ALP 350 [30-100]
- A. Alcoholic hepatitis
 - B. Autoimmune hepatitis
 - C. Carcinoma of head of pancreas
 - D. Gallstones
 - E. Viral hepatitis
42. Mr Simons, 52-year-old homeless man presents with suspected alcoholic liver disease. His liver function test results are as follows:
- > Bilirubin 38 [3-17]
 - > AST 168 [3-30]
 - > ALT 78 [3-40]
 - > ALP 101 [30-100]
- Which of the following would support a diagnosis of alcoholic liver disease?
- A. Low Mean Corpuscular Haemoglobin (MCH)
 - B. Low Mean Corpuscular Volume (MCV)
 - C. Normal Mean Corpuscular Haemoglobin (MCH)
 - D. Normal Mean Corpuscular Volume (MCV)
 - E. Raised Mean Corpuscular Volume (MCV)

- 43. Charlie, a 19-year-old student, returns from his gap year backpacking in India. He presents to his GP 2 weeks later after noticing the whites of his eyes turning yellow. He is otherwise well. He smokes 5 cigarettes a day and drinks occasionally. He denies any intravenous drug use. The GP suspects that he has hepatitis. Which of the following is most likely?**
- A. Hepatitis A
 - B. Hepatitis B
 - C. Hepatitis C
 - D. Hepatitis D
 - E. Hepatitis E
- 44. Bob, a 48-year-old man, presents to the GP with a swelling in his groin. He noticed increasing discomfort and pain for the past few days. On examination, there is a lump superior and medial to the pubic tubercle on the left side which is partially irreducible. There is no erythema of the overlying skin. Cough impulse is present. His observations are: temperature 37°C, respiratory rate 12, pulse 85, BP 125/80. What is the most appropriate management?**
- A. Reassure the patient and ask to review in clinic in 4 weeks' time
 - B. Request for an ultrasound scan and review the patient with the results
 - C. Routine referral to secondary care and consider surgery
 - D. Take bloods and check for signs of infection
 - E. Urgent referral to secondary care
- 45. A 43-year-old woman presents with malaise, joint pain and jaundice for the past 2 months. A hepatitis screen is performed and the results are:
Hepatitis B surface antigen (HBsAg)- positive
Hepatitis B 'e' antigen (HBeAg) – positive
Hepatitis B core antibody (HBcAb) – positive
Which of the following is the most likely diagnosis?**
- A. Acute hepatitis B infection
 - B. Chronic hepatitis B infection
 - C. Hepatitis B immunity following previous infection
 - D. Hepatitis B immunity following previous vaccination
 - E. No hepatitis B infection
- 46. Mrs Barnes, a 65-year-old lady, presents to the GP with abdominal pain and weight loss. She has also noticed that her abdomen is increasing in girth. Examination reveals shifting dullness and fluid thrill. Blood tests reveal Hb 102 [135-180], MCV 84 [82-100], White blood cells 8.0 [4-11], Platelets 360 [150-400], CA 19-9 400 [0-37]. What is the most likely diagnosis?**
- A. Acute pancreatitis
 - B. Heart failure
 - C. Hypoalbuminaemia
 - D. Malignancy
 - E. Meigs' syndrome

47. Miss Mitchell, a 38-year-old lady, presents to A&E with abdominal pain which is worse in the right upper quadrant. She has vomited twice before coming to the hospital and has a temperature of 38 degrees. She previously had intermittent pain in the same region, which resolved spontaneously. She has a BMI of 35 and smokes 20 cigarettes a day. She drinks 10 units of alcohol a week. Her drug history includes the oral contraceptive pill and paracetamol. She has 2 children. On examination there is tenderness at the right upper quadrant and Murphy's sign is positive. Which of the following is not a risk factor for her condition?
- A. Age
 - B. Alcohol
 - C. Gender
 - D. Obesity
 - E. Oral contraceptive pill
48. A 56-year-old man with a history of alcohol abuse presents to his GP because he cannot fully extend his ring finger on his left hand. He can no longer place his hand flat on a flat surface since the finger is permanently partially flexed. Which of the following is the most likely diagnosis?
- A. Asterixis
 - B. Clubbing
 - C. Dupuytren contracture
 - D. Palmar erythema
 - E. Xanthelasma
49. A 55-year-old man with a long history of alcohol abuse presents to A&E with abdominal pain. On examination he has a distended abdomen with shifting dullness. His temperature is 38.5 degrees. He feels generally unwell. What is the most likely diagnosis?
- A. Bowel obstruction
 - B. Hepatocellular carcinoma
 - C. Liver cirrhosis
 - D. Perforated appendix
 - E. Spontaneous bacterial peritonitis (SBP)
50. A 45-year-old woman presents to the emergency department with a 4-week history of intermittent right upper quadrant pain. The pain is sharp in nature and radiates to the back. On examination there is no jaundice, no hepatomegaly and she is afebrile. Liver function tests are normal. Given the likely diagnosis, what is the first line investigation?
- A. Abdominal X Ray
 - B. CT scan of the abdomen
 - C. Exploratory laparotomy
 - D. Magnetic resonance cholangiopancreatography (MRCP)
 - E. Ultrasound scan of the gallbladder

51. Which of the following is not a cause of neutrophilia?

- A. AIDS infection
- B. Appendicitis
- C. Chronic Myeloid Leukaemia
- D. Myocardial Infarction
- E. Strep pyogenes infection

52. In which of the following conditions would you find Reed Sternberg cell?

- A. Acute lymphoblastic leukaemia
- B. Acute myeloid leukaemia
- C. Hodgkin's lymphoma
- D. Myeloma
- E. Non- Hodgkin's lymphoma

53. Pauline is a 58-year-old lady attending your GP clinic. She complains of becoming increasingly tired over the past few years and has lost 2 stone. Pauline initially put these symptoms down to the menopause but has come to see you after experiencing more symptoms, including mouth ulcers and pins and needles in her feet. You notice Pauline's skin has a slight yellow tinge. Which of the following would be the most appropriate first line treatment given the likely diagnosis?

- A. Blood transfusion
- B. Chemotherapy
- C. Ferrous sulphate
- D. Venesection
- E. Vitamin B12 injections

54. Which of the following is not a cause of macrocytic anaemia?

- A. B12/folate deficiency
- B. Bone marrow failure
- C. Hypothyroidism
- D. Iron deficiency
- E. Liver disease

55. Lucy is a 7-year-old girl with a known haematological malignancy receiving outpatient treatment. Over the weekend, her parents bring her to A&E as she is red in the face and the veins of her chest are dilated. You also notice Lucy has facial features, including a small chin, slanted eyes and drooping of the left side of her face. Which haematological malignancy is Lucy likely to have?

- A. Acute Lymphoblastic Leukaemia
- B. Acute Myeloid Leukaemia
- C. Chronic Lymphocytic Leukaemia
- D. Chronic Myeloid Leukaemia
- E. Hodgkin's Lymphoma

- 56. Mary is a 62-year-old lady presenting to your GP clinic to discuss symptomatic relief for menopause. Lately, she has felt tired and has lost her appetite. Her bowel movements have increased in frequency. During her visit, you do a routine health check, including a full blood count which shows microcytic, hypochromic red blood cells. Which of the following is the most appropriate next step?**
- A. Begin Ferrous sulphate tablets and review in 3 months
 - B. Give dietary advice regarding iron and fibre
 - C. Refer to Gynaecology
 - D. Refer urgently for a colonoscopy
 - E. Refer routinely for a colonoscopy
- 57. Robert is a 6-year-old boy being investigated for recurrent nosebleeds. He is found to have Haemophilia B. Which clotting factor is deficient in Haemophilia B?**
- A. Factor 6
 - B. Factor 7
 - C. Factor 8
 - D. Factor 9
 - E. Factor 10
- 58. Bill is a 56-year-old. He is overweight and has smoked 30 cigarettes a day since the age of 14. He has a past medical history of COPD and hypertension. He presents to A&E with a swollen red calf and is diagnosed with a DVT. You notice he also has red palms and soles. Which of the following conditions is most likely to be the cause of Bill's DVT?**
- A. Disseminated intravascular coagulation
 - B. Immune thrombocytopaenia
 - C. Polycythaemia rubra vera
 - D. Secondary polycythaemia
 - E. Von Willebrand disease
- 59. Joshua is a 14-year-old with known sickle cell disease. He is brought into A&E experiencing intense pain in his legs. Which of the following is most likely to have triggered his sickle cell crisis?**
- A. Anti-malarial medication
 - B. Green beans
 - C. Hepatitis B vaccine
 - D. Influenza vaccine
 - E. Parvovirus B19

60. Robert is a 73-year-old gentleman who presents to your GP clinic with back pain. He describes an aching pain that wakes him at night and has been worsening for 3 months. His blood results show the following:

- > **Hb 78g/dL (130-180)**
- > **WCC 7.6×10^9 /L (4×10^9 - 11×10^9)**
- > **Platelets 317×10^9 (150×10^9 – 450×10^9)**
- > **Creatinine 220umol/L (60-110)**
- > **Sodium 141mmol/L (135-145)**
- > **Calcium 3.1mmol/L (2.1-2.6)**

Which of the following is Robert least likely to be prescribed, given the likely diagnosis?

- A. Bisphosphonates
- B. Calcium gluconate
- C. Dexamethasone
- D. Radiotherapy
- E. Thalidomide

61. A 28-year-old gentleman presents to A&E with severe 9/10 intermittent abdominal pain. The pain woke him from sleep last night around midnight and is felt on his right side as well as in his testicles. When he went to the toilet he also noticed his urine was red. He is a non-smoker and on observations he does not have a fever. Which investigation will be diagnostic for this patient?

- A. Amylase
- B. Flexible cystoscopy
- C. Non-contrast CT KUB
- D. Nucleic acid amplification test
- E. PSA

62. A 75-year-old woman with T2DM attends GP for review. Her blood tests show renal impairment. Alongside evidence of kidney damage what is used to define CKD?

- A. eGFR $<15\text{mls}/1.73\text{m}^2 >3$ months
- B. eGFR $30-44\text{mls}/\text{min}/1.73\text{m}^2 >3$ months
- C. eGFR $45-59\text{mls}/\text{min}/1.73\text{m}^2 >3$ months
- D. eGFR $<60\text{mls}/\text{min}/1.73\text{m}^2 >3$ months
- E. eGFR $>90\text{mls}/\text{min}/1.73\text{m}^2 >3$ months

63. Barry, a 74 year-old gentleman was recently started on Tamsulosin for his newly diagnosed benign prostatic hyperplasia. Which of the following is a potential side effect of this drug?

- A. Agranulocytosis
- B. Dry cough
- C. Hypoglycaemia
- D. Ototoxicity
- E. Postural hypotension

64. What is the commonest type of renal cell carcinoma?

- A. Clear cell
- B. Large cell
- C. Papillary cell
- D. Smudge cell
- E. Squamous cell

- 65. Robert, a 76-year-old gentleman, presents to his GP with urinary frequency, haematuria and night sweats. He also reports 2 stone recent weight loss. DRE reveals hard craggy mass. The GP orders bloods and refers him for USS + biopsy on the 2-week wait pathway. The urologist commences him on Goserelin. What class of drug is this?**
- A. 5 alpha reductase inhibitors
 - B. GnRH agonist
 - C. Alpha blocker
 - D. Anticholinergic
 - E. Aromatase inhibitor
- 66. A potential complication of AKI is the development of acute pulmonary oedema. In addition to high flow oxygen, which of the following treatments should you give?**
- A. CPAP
 - B. IV antibiotics
 - C. IV dexamethasone
 - D. IV furosemide
 - E. Nebulised salbutamol
- 67. Jeremy, a 72-year-old gentleman, comes into the GP clinic to discuss his blood pressure medications and the results of a recent CXR in hospital. At the end of the consultation as he is leaving he looks somewhat embarrassed, he tells you he's been having a bit of trouble "getting it up" recently and is worried it is affecting his relationship with his wife. Which of the following risk factors is least associated with erectile dysfunction?**
- A. Life-long history of smoking
 - B. Family history of cardiovascular disease
 - C. Occupational exposure to asbestos
 - D. Past medical history of prostatectomy
 - E. Poor relationship with partner
- 68. Which stimulus and response correctly refers to a function of the kidney?**
- A. Hypoglycaemia- secretion of insulin
 - B. Hypocalcaemia- secretion of parathyroid hormone
 - C. Hypotension- secretion of ADH
 - D. Low RBC- secretion of erythropoietin
 - E. Paracetamol overdose- detoxification
- 69. You've arrived for your first day of placement on the Urology ward and are greeted by the FY1. They tell you there's an interesting history of complicated UTI which you should present to the consultant this afternoon as a Mini-CEX sign off. Unfortunately, the FY1 is then bleeped and has to rush off the ward so you didn't get a chance to ask for the patient's name. Which of the following patients is least likely to be the patient your FY1 was talking about?**
- A. Bed 1- Jim, a 52-year-old male with incidental finding of horseshoe kidney
 - B. Bed 2- Emily, a 73-year-old female with psychosis and delirium
 - C. Bed 3- Johnathan, a 34-year-old male who has had 4 UTIs in the past year
 - D. Bed 4- Lucy, a 6-year-old girl with cystic fibrosis
 - E. Bed 5- Allison, a 32-year-old female in third trimester of her pregnancy

- 70. Jason, a 46-year-old male, presented to A&E this morning with sudden onset thunderclap headache which CT head confirms to be a sub-arachnoid haemorrhage. Jason's past medical history is listed below. Which is most likely to have caused his current admission?**
- A. Acute Kidney Injury
 - B. Autosomal Dominant Polycystic Kidney Disease
 - C. IgA nephropathy
 - D. Prostate cancer
 - E. Varicocele
- 71. A 38-year-old lady visits you during your morning GP clinic. You have met several times in the past but she has not attended for a number of years. She moves slowly into the room and does not make eye contact with you. She is slow to respond to your questions. During the consultation she complains of feeling increasingly tired, cold and lethargic during the day. She also discloses that her normally regular periods have become very heavy and irregular. You arrange some blood tests which show microcytic anaemia and raised thyroid stimulating hormone (TSH). What is the most appropriate first line therapy for this patient?**
- A. Beta blocker
 - B. Carbimazole
 - C. Levothyroxine
 - D. Prednisolone
 - E. Thyroidectomy
- 72. What is the thyroid function test profile found in Graves' disease?**
- A. Low TSH, normal T3 & T4
 - B. Low TSH, raised T3, low T4
 - C. Low TSH, raised T3 & T4
 - D. Raised TSH, low T3 & T4
 - E. Raised TSH, raised T3, low T4
- 73. Which of the following is not a sign or symptom of Graves' disease?**
- A. Exophthalmos
 - B. Increased appetite
 - C. Increased weight
 - D. Lid lag
 - E. Tachycardia
- 74. A 28-year-old woman attends your GP clinic complaining of changes to her menstrual period. On exploration of this change she discloses that her periods have been getting more irregular over the last two years and have now stopped completely, her last period being 3 months ago. She describes this coinciding with decreased libido and lack of interest in her partner. She has stopped wearing her engagement ring as it is causing discomfort and reports that she is increasingly sweaty even when not exercising. What is the initial investigation that should be organised for this woman?**
- A. MRI Brain
 - B. Oral glucose tolerance test
 - C. Random blood glucose
 - D. Serum cortisol
 - E. TFTs

- 75. Which of the following hormones does the anterior pituitary gland not secrete?**
- A. Corticotropin releasing hormone
 - B. Follicular stimulating hormone
 - C. Growth hormone
 - D. Prolactin
 - E. Thyroid stimulating hormone
- 76. A 54-year-old man attends the GP complaining of aching pain in his both legs and back. You see in his notes he has attended frequently in the last 4 months with worsening low mood, abdominal and flank pain and increasing frequency of micturition. You see in his notes that he has chronic kidney disease stage 3 and has recently been found vitamin D deficient. What would you expect to see when doing a bloods workup?**
- A. Low serum parathyroid hormone, hypocalcaemia and hyperphosphatemia
 - B. Low serum parathyroid hormone, hypercalcaemia and hyperphosphatemia
 - C. Raised serum parathyroid hormone, hypercalcaemia and hypophosphatemia
 - D. Raised serum parathyroid hormone, hypocalcaemia and hyperphosphatemia
 - E. Raised serum parathyroid hormone, hypercalcaemia and hyperphosphatemia
- 77. Which of the following is not part of the immediate management for acute severe hypercalcaemia?**
- A. Bisphosphonates
 - B. IV fluids
 - C. Measure serum U&E/Ca
 - D. Parathyroidectomy
 - E. Prednisolone
- 78. A 36-year-old patient attends A&E with high fever of 41 degrees, HR 150 and in AF. They are hypotensive, vomiting and confused. On speaking to a relative you discover that they stopped taking their regular medications 3 days ago as they forgot to take it with them on a weekend away. This included bisoprolol, atorvastatin, carbimazole and microgynon. What is the most likely diagnosis?**
- A. Cocaine intoxication
 - B. Conn's syndrome
 - C. Hyperthyroid crisis
 - D. Meningitis
 - E. Myxoedema coma
- 79. Which of the following clinical features do patients with Addison's disease not commonly experience?**
- A. Depression
 - B. Hyperpigmentation
 - C. Hypertension
 - D. Vomiting
 - E. Weight loss

80. Which of the following is not a complication of long-term steroid therapy?

- A. Diabetes Mellitus
- B. Immunosuppression
- C. Osteoporosis
- D. Proximal muscle weakness
- E. Thickened skin

81. Cecilia, a 45-year-old lady, attends a GP appointment complaining of feeling her heart skip a beat. She says it is particularly noticeable when she exercises and sometimes feels dizzy. Examination is unremarkable. Pulse is regular HR 75, no abnormal heart sounds heard on auscultation. The GP performs an ECG and suspects Wolff-Parkinson-White syndrome. If their suspicions are correct what should the ECG show?

- A. Wide QRS, short PR, delta wave
- B. Wide QRS, long PR, delta wave
- C. Narrow QRS, long PR, delta wave
- D. Narrow QRS, short PR, delta wave
- E. Dropped QRS, progressively lengthened PR, delta wave

82. What type of arrhythmia is Wolff-Parkinson-White syndrome?

- A. Atrioventricular re-entry tachycardia
- B. Atrioventricular nodal re-entry tachycardia
- C. Narrow complex tachycardia
- D. Broad complex tachycardia
- E. Ventricular tachycardia

83. What is the normal length of the PR interval on an ECG?

- A. 0.012s – 0.020s
- B. 0.08- 0.12s
- C. 0.12- 0.20s
- D. 0.38- 0.42s
- E. 0.42- 0.48s

84. A patient has been admitted to hospital with fast AF. Before the patient is discharged, she needs to be considered for oral anticoagulation therapy. Which of the following risk assessment tools is used to determine their risk of major haemorrhage?

- A. CHA2DS2-VASc
- B. HASBLED
- C. ABCD2
- D. Wells
- E. Q RISK

85. Usman, a 78-year-old gentleman, attends the GP complaining of increasing shortness of breath especially at night. He is using 3 pillows to sleep with and has noticed his legs are swollen. He has a past medical history of hypertension, GORD and a myocardial infarction. On examination you hear an S3 gallop and some bibasal crackles in the lung bases. Given the likely diagnosis, which of the following signs are least likely to be seen on chest x-ray?

- A. Kerley B lines
- B. Cardiothoracic ratio <0.5
- C. Pleural effusion
- D. Alveolar oedema
- E. Dilated upper lobe vessels

- 86. What is the appropriate first line medication to treat a patient with heart failure?**
- A. Ace inhibitor + digoxin
 - B. B blocker + loop diuretic
 - C. B blocker + digoxin
 - D. B blocker + ace inhibitor
 - E. Loop diuretic + digoxin
- 87. Furosemide is often prescribed for patients who are fluid overloaded. Where in the kidney does this drug act?**
- A. Ascending loop of Henle
 - B. Collecting ducts
 - C. Distal convoluted tubule
 - D. Descending loop of Henle
 - E. Foot processes
- 88. Mohit, a 55-year-old man from Rotherham, is brought to NGH A+E with a 4-hour history of central crushing chest pain which radiates to his jaw which has not responded to his GTN spray. He is sweaty, tachycardic and vomiting. He has a past medical history of hypertension, type 2 diabetes and angina. A 12-lead ECG shows ST elevation in leads V1-V6 aVL and I. Which cardiac territory or territories have been affected?**
- A. Anterolateral
 - B. Inferior
 - C. Inferolateral
 - D. Lateral
 - E. Septal
- 89. Two days following an admission with STEMI a patient on the cardiology ward complains of acute breathlessness. A pansystolic murmur is noted on examination and heard loudest at the apex. What has happened to the patient?**
- A. Acute heart failure secondary to aortic stenosis
 - B. Acute heart failure secondary to mitral stenosis
 - C. Pulmonary oedema secondary to aortic regurgitation
 - D. Pulmonary oedema secondary to mitral regurgitation
 - E. They are having another ACS
- 90. Managing heart attacks involves the use of dual antiplatelet therapy for example giving both aspirin and clopidogrel. What is the correct method of action of clopidogrel?**
- A. COX inhibitor
 - B. HMG coA reductase inhibitor
 - C. P2Y12 inhibitor
 - D. Phosphodiesterase 5 inhibitor
 - E. Vitamin K antagonist

- 91. Mr Townsend, a 55-year-old male, comes in with a long-standing history of gastric reflux and chest pain. Previous scans have identified Barrett's Oesophagus. He now complains of dysphagia that came on gradually with solid foods, but now has been having symptoms with liquids as well. What is the single most likely diagnosis?**
- A. Achalasia
 - B. Globus Hystericus
 - C. GORD
 - D. Oesophageal Cancer
 - E. Oesophageal Spasm
- 92. Olivia, a 28-year-old female, presents to her GP with diarrhoea and abdominal pain. She has been having recurrent, chronic diarrhoea for the past 5 months, and claims not to have notice any particular pattern. She thinks that she has lost a little bit of weight as well. Blood tests reveal macrocytic anaemia. The patient is subsequently booked for an endoscopy. Given the likely diagnosis, what is the single most likely pathology to be seen on endoscopy?**
- A. Caseating granulomas
 - B. Crypt Abscesses
 - C. Skip lesions
 - D. Transmural inflammation
 - E. Villous atrophy
- 93. Which of the following extraintestinal symptoms are not usually seen in a patient with Ulcerative Colitis?**
- A. Angular stomatitis
 - B. Arthritis
 - C. Conjunctivitis
 - D. Clubbing
 - E. Pyoderma Gangrenosum
- 94. Gavin, a 42-year-old man, presents to his GP with severe abdominal pain. He complains that this pain comes on episodically and is usually exacerbated by eating. He works as a trader and is currently under a lot of stress from work. You suspect that he has an ulcer and decide to check for H.pylori specifically. What is the first-line investigation for H.pylori?**
- A. Full Blood Count
 - B. IgG serology
 - C. Stool Microscopy and Culture
 - D. Upper GI endoscopy
 - E. Urea Breath Test

- 95. A 37-year-old lady comes in complaining of a chronic cough which has been ongoing for 6 months. She admits that there also has been a burning sensation in her chest that is worse after meals and is relieved slightly by antacids. Given the likely diagnosis, what is your first-line medical treatment for her?**
- A. Aspirin
 - B. Clopidogrel
 - C. Ibuprofen
 - D. Lansoprazole
 - E. Ranitidine
- 96. Duncan, a 65-year-old gentleman, comes in complaining of intermittent rectal bleeding when he goes to the toilet. This has come on recently, but he has been experiencing diarrhoea and a feeling of incomplete bowel emptying for the past 8 months. He has experienced 8kg of weight loss recently as well. Given the likely diagnosis, what is the gold standard investigation?**
- A. Carcinoembryonic antigen (CEA) levels
 - B. Colonoscopy
 - C. CT abdomen
 - D. Faecal calprotectin levels
 - E. MRI full body
- 97. Sophie, a 22-year-old lady, comes into the GP surgery complaining of bloody diarrhoea. She has left-sided abdominal pain as well which had been going on for one month. Recently she has been passing more than 6 bloody stools a day and is feeling very unwell. Upon examination, she is pyrexia, tachycardic and looks pale. Given the likely diagnosis, what is your next step in management?**
- A. Admit to hospital
 - B. Start oral steroids and discharge
 - C. Start oral Mesalazine and discharge
 - D. 2-week referral to Gastroenterology
 - E. Start oral steroids and Mesalazine and discharge
- 98. A 27-year-old female comes into the GP surgery complaining of a 4-month history of crampy abdominal pain and diarrhoea. She smokes 20 cigarettes a day. Cobble stoning and skip lesions are visualised on ileocolonoscopy. What is the most likely diagnosis?**
- A. Coeliac Disease
 - B. Crohn's Disease
 - C. Irritable Bowel Syndrome
 - D. Lynch Syndrome
 - E. Ulcerative Colitis

99. A 24-year-old female comes into the GP surgery with a 7-month history of diarrhoea and abdominal bloating and discomfort that is only relieved by defecation. All blood tests taken are clinically normal. Given the likely diagnosis, which of the following medications would be most suitable for her?

- A. Azathioprine
- B. Lactulose
- C. Loperamide
- D. Prednisolone
- E. Sulfasalazine

100. A 45-year-old male is recovering from abdominal surgery in which a cancerous ileo-cecal section of his bowel was successfully removed. Which is the single most likely supplement the patient should be given following this operation?

- A. Bile salts
- B. Folic acid
- C. Intrinsic factor
- D. Vitamin A and D
- E. Vitamin B12

[END OF PAPER 4]

Answers- see separate document for PTS 2a Mock SBA Series- Paper 4- ANSWERS

Scores/Feedback- When you have marked your paper please complete the Paper 4 Google Form to record your scores and feedback on questions when you have marked your paper.

This is found here and on the answer sheet: <https://forms.gle/wBgRFw3Lom9ZVFhU7>

Thanks again to chief exam editor: *Andrew Maud* and SBA question contributors: *Jack Bardwell, Natalie Chann, Rachel Jones, Mohammad S Khan, Joyce Lim, Kristian Mayland, Lizzie McNamara, Mahad Mohamoud, Sophie Parker, Scarlett Strickland*

