

PTS 2a Mock SBA Series 2020

Paper 3- [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 repeated for future years.** Thank you.

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1. **George, a 55-year-old male, is brought to A&E via ambulance 4 hours after experiencing severe central crushing chest pain sweating and vomiting. The ECG performed by the paramedics shows ST segment elevation in Leads V1-V6. His observations show a raised HR and RR, O2 sats 97% OA, he is afebrile. Which of the following is the most appropriate management for the patient?**
 - A. CT Pulmonary Angiogram
 - B. Fibrinolysis with IV Tenecteplase
 - C. High flow oxygen
 - D. Percutaneous Coronary Intervention
 - E. Prophylactic broad spectrum antibiotics

2. **A 74-year-old female attends General Practice complaining of no longer being able to get comfy in bed. For the past 2 months she has noticed she needs more and more pillows under her head and often wakes up in the middle of the night 'gasping for breath'. On examination, you notice bilateral oedematous legs. Which of the following is the most appropriate first line investigation?**
 - A. Chest X-ray.
 - B. CT chest.
 - C. NT-proBNP (BNP) levels.
 - D. ECG.
 - E. Echocardiogram.

3. **A 54-year-old white male attends General Practice after undergoing ambulatory blood pressure monitoring (ABPM). His average reading was 138/90mmHg. You give relevant lifestyle advice and he re-attends 1 month later with an ABPM of 142/94mmHg. What is the most appropriate management for this patient?**
 - A. Bisoprolol.
 - B. Furosemide.
 - C. Ramipril.
 - D. Amlodipine.
 - E. Nifedipine.

4. **A 63-year-old female presents to the General Practice complaining of chest pain, shortness of breath and a single episode of fainting this week. On examination, the GP hears an ejection systolic murmur, loudest at the 2nd intercostal space, right sternal edge. What is the most likely underlying cause of this murmur?**
 - A. Heart failure.
 - B. Aortic regurgitation.
 - C. Mitral regurgitation.
 - D. Mitral stenosis.
 - E. Aortic stenosis.

5. **A 62-year-old male attends his General Practice complaining on worsening dyspnoea. He has a past medical history of heart failure. The GP wants to investigate him further and orders a chest x-ray. Which of the following is not a sign associated with heart failure on chest x-ray?**
 - A. Interstitial oedema
 - B. Cardiomegaly
 - C. Dilated bronchioles
 - D. Prominent upper lobe vessels.
 - E. Pleural effusion.

6. A 55-year-old male is invited by his local practice to undergo an NHS health check. During the check the healthcare professional uses a risk calculator in order to determine his 10-year probability of suffering from a cardiovascular event. What is the name of this risk calculator?
- A. CHA₂DS₂-VaSc
 - B. QRisk3
 - C. ABCD₂
 - D. Wells' score
 - E. Modified Duke Criteria
7. A 50-year-old female attends General Practice complaining of a dry cough. She mentions it has only started recently. Past medical history includes: Asthma (1985), Diabetes (2015), Hypertension (2020). Her medications include salbutamol inhaler, metformin 500mg OD, ramipril 2.5mg OD. All observations and examinations are normal. What is the most likely cause of this patient's cough?
- A. Infective exacerbation of asthma
 - B. Lung cancer
 - C. Pneumonia
 - D. Ramipril
 - E. Metformin
8. A 67-year-old male is referred to a cardiologist due to detection of a new pansystolic murmur on examination. The cardiologist suspects a diagnosis of mitral regurgitation. What is the most appropriate investigation to confirm the diagnosis?
- A. Echocardiogram
 - B. ECG
 - C. Troponin-T
 - D. NT-proBNP (BNP) levels
 - E. Chest X-ray
9. A 43-year-old female attends A&E complaining of palpitations, shortness of breath and dizziness. On examination the pulse rate is 134bpm and feels irregular. You suspect a diagnosis of atrial fibrillation and request an ECG to confirm this. Which of the following ECG changes is associated with atrial fibrillation?
- A. Sawtooth flutter waves
 - B. Absent P waves
 - C. Delta waves
 - D. Saddle-shaped ST segment elevation
 - E. ST segment depression

10. A 19-year-old male collapses whilst playing a football match for his local team. Paramedics arrive rapidly and find him in cardiac arrest and attempt to defibrillate him. His brother who was playing football with him tells you that he's normally fit and well but for the past few months he had been experiencing some chest pain, palpitations and unexplained syncope. His brother also mentions that their dad died at a young age due to "some heart problems". What is the most likely cause of this patient's cardiac arrest?
- A. Atrial fibrillation.
 - B. Aortic stenosis.
 - C. ST elevation myocardial infarction (STEMI).
 - D. Non-ST elevation myocardial infarction (NSTEMI).
 - E. Hypertrophic cardiomyopathy.
11. A 58-year-old Afro-Caribbean male is known to have essential hypertension, he has been on Amlodipine for 3 months, but his blood pressure remains at 145/95, what is the next appropriate step in managing this patient's hypertension?
- A. Percutaneous Coronary Intervention
 - B. Prescribe Atenolol
 - C. Prescribe Candesartan and withdraw Amlodipine
 - D. Prescribe Bendroflumethiazide in addition to Amlodipine
 - E. Prescribe Rampiril in addition to Amlodipine
12. Jim, a 20-year-old male, with known type 1 diabetes presents to A&E with abdominal pain and increased thirst. He is breathing deeply and quickly and there is a smell of 'pear-drops' on his breath. He tells you he ran out of insulin 3 days ago and hasn't had chance to go to the GP to collect some more. His ABG shows a metabolic acidosis and his blood glucose is significantly raised. Which of the following is least likely to be seen on Jim's ECG?
- A. Absent P waves
 - B. Long PR interval
 - C. Wide QRS complex
 - D. Tall Tented T waves
 - E. U waves
13. Which of the following is a type of cardiomyopathy?
- A. Vasoconstricted
 - B. Infective
 - C. Idiopathic
 - D. Dilated
 - E. Congenital
14. Earlier today Betty, a 67-year-old lady, had a fall. She was sitting in her chair for most of the morning but on standing up she immediately collapsed to the floor. She did not lose consciousness but did hit her head. She is brought to A&E where a reassuring CT scan shows no abnormalities or bleed. You perform a lying and standing blood pressure, diagnose postural hypotension and appropriately reduce some of her anti-hypertensive medications. Which of the following BP results reflect those recorded in Bettys notes?
- A. Lying 118/82, standing 138/98
 - B. Lying 120/110, standing 107/93
 - C. Lying 137/103, standing 109/88
 - D. Lying 147/99, standing 137/96
 - E. Lying 150/102, standing 140/9

- 15. Tony, a 45-year-old male presents to A&E with central chest pain that radiates to his jaw and arm. Which of the following aspects elicited from Tony's history is most relevant in diagnosing his condition?**
- A. His grandad had a myocardial infarction when they were 80
 - B. He smoke 20 cigarettes a day and has done for the last 10 years
 - C. He had surgery for a fractured femur when he was 36
 - D. He has a family history of Thyroid disorders
 - E. He is allergic to penicillin
- 16. Which of the following signs is most likely to indicate that a patient is in septic shock?**
- A. Apyrexial
 - B. Bradycardia
 - C. Bounding Pulse
 - D. Reduced airway entry
 - E. Paraesthesia
- 17. Which of the following is least likely to cause hypovolaemic shock?**
- A. Gastrointestinal Bleed
 - B. Severe Diarrhoea and Vomiting Secondary to Gastroenteritis
 - C. A 3rd degree burn to the torso
 - D. Pancreatitis
 - E. Pulmonary Embolism
- 18. A 70-year-old male presents to A&E with a pain that he describes as 'tearing into his back'. He has a past medical history of acute coronary syndrome and recently suffered a 2nd NSTEMI. Which of the following is the most likely diagnosis for the patient?**
- A. Aortic Dissection
 - B. Myocardial Infarction
 - C. Cardiac Tamponade
 - D. Pulmonary embolism
 - E. Infective Exacerbation of COPD
- 19. Which of the following is a symptom most reflective of Pericarditis?**
- A. 'Crushing' chest pain
 - B. Epigastric pain that radiates to the back
 - C. Pleuritic, sharp chest pain
 - D. Generalised sharp chest pain
 - E. Haemoptysis
- 20. An 84-year-old lady is rushed into A&E with sudden onset epigastric pain which radiates to the back. Vital signs: HR: 112, BP: 92/63, RR: 36, O2: 89%, Temperature: 37C. Her hands are cold and clammy. What investigation is it important to do first?**
- A. Chest Xray
 - B. Coagulation screen
 - C. MRI
 - D. Troponin I
 - E. Ultrasound scan

- 21. Which of the following is not a typical symptom of a patient with hyperthyroid disease?**
- A. Diarrhoea
 - B. Polyuria
 - C. Increased appetite
 - D. Irritability
 - E. Weight loss
- 22. Mrs Andrews, a 56-year-old lady, comes into your GP surgery complaining of vision problems. She has noticed that she's had double vision and painful sore eyes. She feels well in herself and in fact is quite happy because she's lost quite a lot of weight in the past month without even really trying.. What is the most likely diagnosis?**
- A. De Quervain's thyroiditis
 - B. Graves' disease
 - C. Peri-orbital cellulitis
 - D. Thyroid Cancer
 - E. Thyrotoxicosis
- 23. A 38-year-old lady has noticed that she has become increasingly tired, put on 6kg of weight in the last month and is feeling depressed. Which of the following Thyroid Function Tests would most likely fit with this patient's clinical picture?**
- A. High TSH, Low T3 and Low T4
 - B. High TSH, High T3 and Low T4
 - C. Low TSH, High T3 and High T4
 - D. Low TSH, Low T3 and Low T4
 - E. Normal TSH, Normal T3 and Normal T4
- 24. Which of the following tests is the Gold Standard test for Acromegaly?**
- A. ECG
 - B. Oral Glucose Tolerance test
 - C. IGF-1 test
 - D. MRI scan of pituitary
 - E. GH levels
- 25. What is the most common cause of secondary hypoadrenalism?**
- A. Autoimmune disorder
 - B. Cessation of corticosteroid treatment
 - C. Long term corticosteroid usage
 - D. Pituitary Surgery
 - E. TB

- 26. A 22-year-old male presents with dizziness and feeling generally off. He's noticed that most of the time when he stands up he feels like he's going to faint. He's lost 4 kg unintentionally in the last month and has noticed that his skin has a weird tanned appearance to it despite it being winter. What is the most appropriate investigation to diagnosis this patient?**
- A. Blood Glucose
 - B. Blood Salts
 - C. Low dose dexamethasone test
 - D. Synacthen Test
 - E. Thyroid Function Tests (TFTs)
- 27. Which of these is not a cause of Syndrome of Inappropriate secretion of ADH (SIADH)?**
- A. Alcohol withdrawal
 - B. Dehydration
 - C. Head injury
 - D. Pneumonia
 - E. Small cell lung cancer
- 28. What would be your immediate management for a patient with suspected Carcinoid Syndrome?**
- A. Desmopressin
 - B. IV salbutamol
 - C. Oral Sando-K
 - D. Radiotherapy
 - E. Somatostatin Analogue (octreotide)
- 29. A 48-year-old lady comes to see the GP with worsening numbness in her hands and feet and changes in her breathing (more high pitched). When you measure the patient's Blood Pressure you notice that her wrist is flexing. What is the most likely diagnosis?**
- A. Acromegaly
 - B. Hypocalcaemia
 - C. Hypokalaemia
 - D. Obstructive Sleep Apnoea
 - E. SIADH
- 30. A patient presents to A&E due to increasing pain when passing urine. When you enquire more, you find out he's had bad pain in his bones and been feeling increasingly anxious. He is found to have primary hyperparathyroidism. What would you see on his blood work?**
- A. High PTH – Calcium High – Phosphate Low
 - B. High PTH – Calcium Low – Phosphate High
 - C. High PTH – Calcium High – Phosphate High
 - D. Normal PTH – Calcium High – Phosphate Normal
 - E. High PTH- Calcium low – Phosphate Low

- 31. Which of these is not a macroscopic feature of Ulcerative Colitis?**
- A. Circumferential + continuous inflammation
 - B. Inflammation begins at rectum and extends proximally
 - C. Inflammation stops at the ileo-caecal valve
 - D. Non-continuous inflammation seen as "Skip lesions"
 - E. Reddening + inflammation of mucosa
- 32. What is the gold-standard investigation for diagnosis of Crohn's disease?**
- A. Abdominal X-ray
 - B. Colonoscopy and mucosal biopsy
 - C. Faecal calprotectin
 - D. Per rectal examination
 - E. Stool microscopy, culture and sensitivity
- 33. Which of these metaplastic changes would you see in a PT with Barrett's oesophagus?**
- A. Cuboidal to pseudostratified epithelium
 - B. Pseudostratified to simple columnar epithelium
 - C. Simple columnar to stratified squamous epithelium
 - D. Simple squamous to simple columnar epithelium
 - E. Stratified squamous to simple columnar epithelium
- 34. A serious complication of peptic ulcers is erosion into nearby vessels causing intra-abdominal bleeding. Which vessel would be mostly likely to bleed as a result of a duodenal wall eroding posteriorly?**
- A. Gastroduodenal artery
 - B. Left gastric artery
 - C. Short gastric artery
 - D. Superior mesenteric artery
 - E. Superior pancreaticoduodenal artery
- 35. In a patient with appendicitis, where is the initial pain usually felt?**
- A. Left iliac region
 - B. McBurney's point
 - C. Peri-umbilical region
 - D. Right hypochondrium
 - E. Right lumbar region/flank
- 36. Which of these would you not generally see in a patient with Coeliac disease?**
- A. Angular stomatitis
 - B. Aphthous ulcers
 - C. Loss of appetite
 - D. Steatorrhoea
 - E. Unintentional weight loss

37. Jane, a 49-year-old lady, has recently been diagnosed with gastro-oesophageal reflux disease and has come to see the GP for a review of her medications. She is otherwise fit and well. Which of the following medications is least likely to be prescribed to alleviate her symptoms?

- A. Alginates
- B. Antacids
- C. Antibiotics
- D. Histamine receptor antagonists
- E. Proton-pump inhibitors

38. What is the most common cause of small bowel obstruction?

- A. Malignant tumours
- B. Meckel's diverticulum
- C. Strictures from Crohn's disease
- D. Surgical adhesions
- E. Volvulus

39. Which of these clinical features would not affect a patient with oesophageal carcinoma?

- A. Enlarged Virchow's node
- B. Lymphadenopathy
- C. Progressive dysphagia
- D. Retrosternal chest pain
- E. Weight loss

40. Which of these is an example of a first-line treatment for mild ulcerative colitis?

- A. Colectomy
- B. IV hydrocortisone
- C. Mesalazine
- D. NSAIDs e.g. Ibuprofen
- E. Oral Prednisolone

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

- A. Alcohol excess
- B. Bone Marrow infiltration
- C. B12/Folate deficiency
- D. Chronic disease
- E. Hypothyroidism

42. What is the 1st line treatment for the most common form of anaemia?

- A. Blood transfusion
- B. Folic acid
- C. Hydroxycarbamide
- D. Oral iron supplements
- E. Pyridoxine

43. A 73-year-old lady presents to you complaining of recent fatigue and unexplained weight loss. In her records you see she has visited the GP 3 times in the past month with infections and been prescribed various antibiotics. On examination you note that her arms are covered in bruises, owing to your concern you order several investigations.

The results are as follows:

- > **Hb – 85g/L (115-160g/L)**
- > **MCV – 79fL (76-96fL)**
- > **Platelets – $90 \times 10^9/L$ (150-400 $\times 10^9/L$)**
- > **WCC – $25 \times 10^9/L$ (4-11 $\times 10^9/L$)**

Bone marrow biopsy shows significant numbers of blast cells with Auer rods.

What is the diagnosis?

- A. Acute lymphoblastic leukaemia
- B. Acute myeloid leukaemia
- C. Chronic lymphocytic leukaemia
- D. Chronic myeloid leukaemia
- E. Hodgkin's lymphoma

44. Which of the following is a characteristic cytogenic finding in Chronic Myeloid Leukaemia?

- A. Bite cells
- B. Philadelphia chromosome
- C. Roth spots
- D. Schistocytes
- E. Xanthoma

45. Monoclonal Gammopathy of Undetermined Significance (MGUS) is a condition which carries a risk of developing into which condition?

- A. Acute Myeloid Leukaemia
- B. Chronic Lymphocytic leukaemia
- C. Myeloma/Multiple Myeloma
- D. Burkitt's Lymphoma
- E. Sickle Cell anaemia

46. Thomas Jones, a 17-year-old male, presents to his GP with a large, non-tender lump on his neck. He is referred to a haematologist and diagnosed with Hodgkin's Lymphoma. Which of the following is least likely to be found in a patient with Hodgkin's Lymphoma?

- A. Anaemia
- B. Hepatosplenomegaly
- C. Pruritis (itching)
- D. Raised white cell count
- E. Reed-Sternberg cells on blood film

47. A 70-year-old man presents with chronic back ache, constipation, renal stone and weight loss. His GP ordered some investigations and referred him to hospital.

The investigation results are as follows:

- > **Hb - 84g/L (130-180g/L)** (Male range)
- > **MCV – 77fL (76-96fL)**
- > **ESR – 150 (45)** (Male and Age appropriate range)
- > **Creatine – 170 (70-100)**
- > **Urea – 7.3mmol/L (2.5-6.7 mmol/L)**
- > **Ca²⁺ - 2.5mmol/L (1.0-1.5mmol/L)**

Urine Electrophoresis showed Bence Jones proteins. Blood films showed Rouleaux formation. What is the diagnosis?

- A. Acute Lymphoblastic Leukaemia
- B. Bronchial carcinoma
- C. Chronic Myeloid Leukaemia
- D. Follicular Lymphoma
- E. Multiple Myeloma

48. An 80-year-old lady is diagnosed with polycythaemia rubra vera and is treated with hydroxycarbamide and aspirin. Which of the following is not an identified feature or complication of PCV?

- A. Dizziness
- B. Itching
- C. Haemorrhage
- D. Weight Loss
- E. Thrombosis

49. Which of the following is not a risk factor for deep vein thrombosis?

- A. Immobility
- B. Malignancy
- C. Surgery
- D. Trauma
- E. Tay-Sachs disease

50. A 25-year-old lady presents with menorrhagia and tiredness. On investigation she is found to have Iron-deficiency anaemia. Which of the following will not be found on her blood film?

- A. Abnormally shaped red blood cells (Poikilocytosis)
- B. Heinz bodies
- C. Pale (hypochromic) red blood cells.
- D. Red blood cells of varying size (anisocytosis)
- E. Small (microcytic) red blood cells.

51. Which of the following is not a sign of chronic liver failure?

- A. Asterixis
- B. Spider Naevi
- C. Gynaecomastia
- D. Kussmaul Breathing
- E. Jaundice

- 52. Which of the following is not part of the definition for acute liver failure?**
- A. INR greater than 1.5
 - B. Onset of less than 26 weeks duration
 - C. Low albumin levels
 - D. Mental alteration without pre-existing cirrhosis
 - E. No previous liver disease
- 53. Mohammed, a 64-year-old gentleman, has presented to A&E complaining of gradually worsening abdominal pain for the past 2 days. He rates it today as a 9/10 pain located in the centre of his abdomen, although it also feels like it goes through to his back. On examination he is pale, vomiting, and sweating profusely. In addition, he notes bruising around his periumbilical and flank region. He is a heavy drinker, who normally drinks 60 units of alcohol/week. What is the most likely diagnosis?**
- A. Acute pancreatitis
 - B. Ischaemic colitis
 - C. Pancreatic cancer
 - D. Perforated peptic ulcer
 - E. Ruptured abdominal aortic aneurysm
- 54. Abdul, a 72-year-old gentleman, is admitted to the ward from surgical outpatients. For the last 3 months, he has noticed a progressively deepening yellow discolouration of the skin. He denies any abdominal pain although he notes his clothes have become looser. He has also noticed that his stools have become pale and his urine has become darker. His stools are difficult to flush. What is the most likely diagnosis?**
- A. Acute pancreatitis
 - B. Cancer of the pancreatic head
 - C. Cholangiocarcinoma
 - D. Chronic Liver Failure
 - E. Hepatocellular carcinoma
- 55. Which of the following is not a risk factor for liver cancer?**
- A. Hepatitis B infection
 - B. Chronic alcohol use
 - C. Aflatoxin exposure
 - D. Benzene exposure
 - E. Non-alcoholic Fatty Liver Disease
- 56. What is the gold standard investigation to diagnose Wilson's disease?**
- A. Serum caeruloplasmin level
 - B. 24hr urinary copper excretion measurement
 - C. Serum copper level
 - D. Liver biopsy
 - E. Ferritin levels

57. A 56-year-old man, diagnosed with emphysema, presents with a one-month history of jaundice and ascites. Your registrar suspects that this patient may have liver disease secondary to α 1-antitrypsin deficiency. What is the correct type of inheritance for this condition?
- A. X-linked dominant
 - B. X-linked recessive
 - C. Autosomal recessive
 - D. Polygenic
 - E. Mitochondrial
58. Julia, a 30-year-old lady, presents to A&E with profuse watery diarrhoea. She says she came on very suddenly and describes the diarrhoea as colourless. When asking about her work she informs you she co-ordinates volunteers for the charity Oxfam and returned to the UK yesterday from a 2-week project delivering aid in Haiti. Her observations show an elevated heart rate of 120bpm. What is the most appropriate treatment?
- A. Rehydration with oral rehydration solutions
 - B. Rehydration with IV fluids
 - C. Rehydration with oral rehydration fluids with metronidazole
 - D. Codeine phosphate
 - E. Oral azithromycin
59. An anxious mum has brought her 3-year-old son to Sheffield Children's Hospital A&E. His mum says that he has been poorly the last few days, with vomiting and watery diarrhoea. There is no blood in his stools. When you see him, he is crying and looks miserable. His mum mentions that he went for a party a couple of days ago and the children who attended also complain of similar symptoms. You diagnose infective diarrhoea. What is the most likely etiological agent for the diarrhoea?
- A. Adenovirus
 - B. E.coli
 - C. Rotavirus
 - D. Norovirus
 - E. Campylobacter jejuni
60. Miles, a 45-year-old gentleman, presents to his GP with his wife complaining that for the past month he has been feeling particularly tired. He is also concerned that he's recently had pain in his joints and been needing to go for a wee far more frequently than usual. Miles is a little embarrassed when his wife mentions that he has had difficulty getting an erection and is worried about it affecting their relationship. On examination you note several signs indicative of chronic liver disease. At the end of the consultation his wife jokingly complains that her husband must be going on secret holidays without her because he seems to have caught a 'lovely new tan'. What is the most likely diagnosis?
- A. Wilson's Disease
 - B. Haemochromatosis
 - C. Addison's Disease
 - D. Renal cell carcinoma
 - E. Type 2 Diabetes Mellitus

- 61. A 54-year-old male attends your GP practice complaining of 3 days of productive cough, bringing up rusty coloured sputum. He describes feeling achy in his joints and has had headaches for the last week. He reports no haemoptysis, recent weight loss or night sweats. He states that he frequently visits Valencia for work and was last there two weeks ago. On examination he has a temperature of 37.9 degrees and crackles in the right lung base. What is the most likely causative organism?**
- A. Chlamydomphila psittacia
 - B. E. coli
 - C. Legionella pneumophila
 - D. Mycoplasma tuberculosis
 - E. Strep. Pneumoniae
- 62. A GP is called on a home visit to a young family with an unwell 2-year-old. On arrival you see that the boy is pale, mottled and floppy. The mother thinks that they are very unwell. They have a non-blanching petechial rash on the left thigh. What antibiotic should the GP administer immediately to this child?**
- A. Amoxicillin
 - B. Benzylpenicillin
 - C. Cefotaxime
 - D. Doxycycline
 - E. Erythromycin
- 63. Which of the following organisms is a beta-haemolytic gram-positive streptococcus with Lancefield grouping A?**
- A. Strep. Agalactiae
 - B. Strep. Mutans
 - C. Strep. Pneumoniae
 - D. Strep. Pyogenes
 - E. Strep. Viridans
- 64. A 27-year-old woman in her 1st trimester of pregnancy presents to the GP with dysuria, frequency of micturition, supra-pubic pain and offensive smelling urine. She has a mildly raised temperature, on inspection of the urine it is cloudy and dark yellow. Urinalysis shows raised protein, nitrites and leukocytes. What is the most appropriate antibiotic therapy given the likely causative organism?**
- A. Amoxicillin
 - B. Ciprofloxacin
 - C. Doxycycline
 - D. Nitrofurantoin
 - E. Trimethoprim

- 65. A patient arrives at A&E in an ambulance after having a seizure at home. Her mother is with her and informs you that she had been unwell for the previous 2 days with a high temperature, headache and flu like symptoms. On examination the patient is drowsy and confused and has weakness in the right arm. A lumbar puncture demonstrates clear CSF with elevated lymphocytes and normal levels of glucose and protein. What is the most appropriate medication to treat this patient within hospital?**
- A. Acyclovir
 - B. Cefotaxime
 - C. Dexamethasone
 - D. Metronidazole
 - E. Vancomycin
- 66. Which of the following antibiotics does not inhibit nucleic acid synthesis?**
- A. Ciprofloxacin
 - B. Chloramphenicol
 - C. Metronidazole
 - D. Rifampicin
 - E. Trimethoprim
- 67. What nutrient agar is used to grow *Mycobacterium tuberculosis*?**
- A. Blood
 - B. Charcoal
 - C. Chocolate
 - D. Lowenstein-Jensen
 - E. MacConkey
- 68. Which of the following organisms is a non-lactose fermenting aerobic bacillus that gives a positive result on oxidase test?**
- A. *Clostridium difficile*
 - B. *Proteus*
 - C. *Pseudomonas*
 - D. *Salmonella*
 - E. *Shigella*
- 69. Which of the following bacteria is the most common cause of infective endocarditis in adults?**
- A. Lancefield A beta-haemolytic streptococcus
 - B. Lancefield B beta-haemolytic streptococcus
 - C. Non-haemolytic streptococcus
 - D. Optochin resistant alpha-haemolytic streptococcus
 - E. Optochin sensitive alpha-haemolytic streptococcus
- 70. Which test is used to distinguish between staphylococcus and streptococcus?**
- A. Catalase
 - B. Coagulase
 - C. Haemolysis
 - D. Optochin
 - E. Oxidase

- 71. Fred is a 75-year-old gentleman with known COPD. He has recently been seen by his GP due to worsening of his symptoms. Fred notes that he now has to stop to catch his breath when walking 100m on flat to go to the local corner store. The GP is writing a referral to respiratory medicine. On the referral what grade does Fred fall under on the Medicine Research Council (MRC) dyspnoea scale?**
- A. Grade 1
 - B. Grade 2
 - C. Grade 3
 - D. Grade 4
 - E. Grade 5
- 72. You are a FY1 in A&E. A 65-year-old woman presents with shortness of breath that has been getting worse for 3 months. When you go to clerk her in she appears out of breath. Observations include an elevated respiratory rate, oxygen sats 95%, afebrile. Upon further questioning she notes a dry cough over the last 3 months with 5kg of unexplained weight loss. What is the first line investigation?**
- A. Chest x-ray
 - B. CT scan of chest
 - C. Full blood count
 - D. Peak flow
 - E. Spirometry
- 73. A 62-year-old male presents to A&E with worsening shortness of breath. He developed a pneumonia 2 weeks ago, spent 5 days in hospital and has since been recovering at home. On examination the doctor notes a stony dull percussion at the right lung base. A chest x-ray report reads: 'There is blunting of the Right costophrenic angle with a homogenous opacity of the lower zone of the right lung'. What is the most likely diagnosis?**
- A. Bronchiectasis
 - B. COPD
 - C. Lung abscess
 - D. Lung cancer
 - E. Parapneumonic pleural effusion
- 74. Jane, a 45-year-old accountant, was diagnosed with Wegner's Granulomatosis (GPA) following investigation for symptoms of nasal crusting, nose bleeds, shortness of breath and red itchy eyes. Which antibody is most commonly associated with granulomatosis with polyangiitis?**
- A. ANA
 - B. Anti- dsDNA
 - C. Anti- CCP
 - D. C-ANCA
 - E. P-ANCA

75. You are asked to interpret the arterial blood gas results taken on your patient James, a 65-year-old smoker with known COPD. He has been feeling increasingly out of breath after developing a 'chest cold' 3 days ago.

ABG results: pH 7.30 [7.35-7.45] PaO₂ 65 [80-100] PaCO₂ 51 [35-45].

Which of the following best describes the ABG?

- A. Hyperventilation
- B. Pleural effusion
- C. Pneumonia
- D. Type 1 respiratory failure
- E. Type 2 respiratory failure

76. A 40-year-old man presents to hospital with haemoptysis. As part of the coagulation screening test he is diagnosed with Von-Willebrand's disease. What is the pattern of inheritance for this condition?

- A. Autosomal dominant
- B. Autosomal recessive
- C. Translocation of Ch9 and Ch22
- D. X-linked dominant
- E. X-linked recessive

77. Which of the following is an occupational lung disorder?

- A. Atelectasis
- B. Bronchiectasis
- C. Idiopathic pulmonary fibrosis
- D. Sarcoidosis
- E. Silicosis

78. Mr Singh, a 68-year-old gentleman, presents to your GP clinic complaining of breathlessness on exertion and a productive cough for the last 4 months. You assess spirometry revealing FEV₁/FVC of 51% with no reversibility after a 2-week trial of oral steroids. Cardio examinations are all normal. What is the most likely diagnosis?

- A. Asthma
- B. COPD
- C. Left ventricular failure
- D. Lung fibrosis
- E. Sarcoidosis

79. You see a 50-year-old man on the ward who has a bronchiectasis diagnosis. Which of the following on the list is not a cause of bronchiectasis?

- A. Bronchogenic carcinoma
- B. Cystic fibrosis
- C. Immotile ciliary syndrome
- D. Left ventricular failure
- E. Pneumonia

- 80. An elderly gentleman with known COPD attends clinic with persistent SOB. He has quit smoking and is struggling to manage with his salbutamol inhaler. Spirometry performed earlier today show FEV1 at 65% of predicted value. Oxygen sats are 95% on air, respiratory rate =18 and he is apyrexial. What is the next best step in his management?**
- A. Add a long-acting β 2 agonist inhaler
 - B. Add oral theophylline therapy
 - C. Forty (40) mg daily oral prednisolone for 5 days
 - D. Start inhaled corticosteroid therapy
 - E. Start long-term oxygen therapy
- 81. Which of the following is not a precipitant of asthma?**
- A. Atmospheric pollution
 - B. Cold air
 - C. Drugs e.g. NSAIDS
 - D. Emotions
 - E. Fruit and vegetable rich diet
- 82. Peter has a diagnosis of asthma and comes to see you for a check-up. He has been prescribed salbutamol. He is using his inhaler 3-4 times per week and is wheezing and coughing some nights. What is an appropriate choice of medication to prescribe next?**
- A. Ipratropium
 - B. Methotrexate
 - C. Beclometasone
 - D. Salmeterol
 - E. Tiotropium
- 83. Mary, a 38-year old lady, has had 3 weeks persistent cough, haemoptysis, fever, night sweats and weight loss of 1.5 stone. She used to smoke socially but has now quit. She has recently been away. What is the most likely diagnosis?**
- A. Asthma
 - B. Bronchiectasis
 - C. Cancer
 - D. Pulmonary Embolism
 - E. Tuberculosis
- 84. Which organism is the most common culprit of community acquired pneumonia?**
- A. Chlamydomphila pneumoniae
 - B. E.coli
 - C. Haemophilus influenzae
 - D. Pseudomonas aeruginosa
 - E. Streptococcus pneumoniae
- 85. Which of the following is not a risk factor for pulmonary embolism?**
- A. High testosterone
 - B. Leg fracture
 - C. Obesity
 - D. Polycythaemia
 - E. Smoking

- 86. Sara has been diagnosed with TB and is receiving treatment. She comes back to the doctors and is complaining of red urine. Which antibiotic in the treatment of TB is the likely cause of her side effect?**
- A. Amoxicillin
 - B. Ethambutol
 - C. Isoniazid
 - D. Pyrazinamide
 - E. Rifampicin
- 87. What is the diagnostic investigation for sarcoidosis?**
- A. Bronchoalveolar lavage
 - B. Blood Tests
 - C. Chest X-ray
 - D. Lung function tests
 - E. Tissue biopsy
- 88. Alex, a 21-year-old male, presents to the GP complaining of a productive cough and difficulty breathing. He has noticed his stools have been foul smelling and floating for quite some time. He also mentioned he is unable to get his girlfriend pregnant and they have been trying for a year now. What is the most likely diagnosis?**
- A. Bronchiectasis
 - B. Cystic Fibrosis
 - C. Lung tumour
 - D. Pulmonary fibrosis
 - E. TB infection
- 89. What type of hypersensitivity reaction is hypersensitivity pneumonitis?**
- A. Type 1
 - B. Type 2
 - C. Type 3
 - D. Type 4
 - E. Type 5
- 90. William, a 25-year-old male, present with cough ,fatigue, haemoptysis and bloody, frothy urine. Before this he had symptoms of runny nose, sneezing and fever. What is the most likely diagnosis?**
- A. Cystic fibrosis
 - B. Idiopathic pulmonary hemosiderosis
 - C. Goodpasture's syndrome
 - D. Rheumatoid arthritis
 - E. SLE

- 91. Linda, a 46-year-old lady, presents to A&E with a severe, sudden-onset occipital headache with associated vomiting, photophobia, and neck stiffness. Her past medical history includes refractory hypertension. A CT head is reported to show hyper-attenuated areas in the basal cisterns. What is the most likely diagnosis?**
- A. Extradural haemorrhage
 - B. Ischaemic stroke
 - C. Migraine
 - D. Subarachnoid haemorrhage
 - E. Subdural haemorrhage
- 92. Jeremy, a 60-year old male, is referred to neurology by his GP. He is diagnosed with Parkinson's disease. What is the cardinal clinical triad of symptoms in Parkinson's disease?**
- A. Ataxia, rigidity, weakness
 - B. Bradykinesia, numbness, rigidity
 - C. Bradykinesia, rigidity, tremor
 - D. Dysarthria, weakness, ataxia
 - E. Dysarthria, rigidity, weakness
- 93. A 40-year-old man presents with an acute onset, severe 'stabbing' headache, focussed around his right eye. He says the headache is intermittent, abruptly waking him from his sleep each morning, before stopping an hour later. He describes his right eye being watery and his right nostril being runny at the same time. He is visibly distressed, rocking on the bed in pain. On inspection of the right eye you notice it is red, with a swollen eyelid and a constricted pupil. What is the most likely diagnosis?**
- A. Brain tumour
 - B. Cluster headache
 - C. Migraine
 - D. Tension headache
 - E. Trigeminal neuralgia
- 94. A 14-year-old girl, Anna, presents to A&E. Her mum says she has had a 'seizure' approximately an hour ago. Her mum, who witnessed the incident, says Anna told her she felt 'weird' whilst they were watching TV together. Anna then appeared to stare into the distance and was unresponsive to her mum's voice, whilst picking at her clothes and chewing. Afterwards, Anna was 'confused'. What is the most likely diagnosis?**
- A. Frontal lobe seizure
 - B. Occipital lobe seizure
 - C. Parietal lobe seizure
 - D. Psychogenic non-epileptic attack
 - E. Temporal lobe seizure

95. A 19-year-old man presents to A&E with a fever, headache, vomiting, photophobia, and drowsiness. On examination, neck stiffness and a positive Kernig's sign are elicited. Given the patient's reduced GCS and as a highly proficient FY1, you order a CT head to rule any intracranial pathology / raised ICP before conducting a lumbar puncture. You send both blood and CSF samples to be cultured. After 24 hrs of successful empirical treatment, the lab reports the results of the CSF gram stain: *Gram positive diplococci seen*. Given the most likely diagnosis and the histopathology, which pathogen is most likely responsible for his symptoms?
- A. Coxsackie B virus
 - B. Haemophilus influenzae type B
 - C. Herpes simplex virus
 - D. Neisseria meningitidis
 - E. Streptococcus pneumoniae
96. A 75-year-old woman presents to A&E with new-onset right arm and lower facial weakness. On examination, power in the right upper limb is reduced. Power in the left upper limb and both lower limbs is not substantially affected. Of note, she also has impaired language comprehension, although she is speaking fluently. Which vessel is most likely to be affected?
- A. Basilar artery
 - B. Left anterior cerebral artery
 - C. Left middle cerebral artery
 - D. Right anterior cerebral artery
 - E. Right middle cerebral artery
97. A 75-year-old man presents to his GP two days after right-sided arm and leg weakness. He says he did not seek medical attention at the time as the symptoms resolved after 30 minutes. He has had no other symptoms since this incident. You suspect the patient has had a TIA. As a diligent junior doctor, you refer him to the specialist TIA clinic. What pharmacological therapy should be immediately initiated in the meantime?
- A. Aspirin 300mg daily
 - B. Aspirin 300mg + clopidogrel daily
 - C. Clopidogrel daily
 - D. Dipyridamole daily
 - E. Warfarin daily
98. Graham, a 60-year-old gentleman, presents to A&E with a history of lower back pain and increasing weakness and numbness in both lower limbs. Two days earlier, he had pain shooting down both his legs after moving heavy boxes at home. There was no history of incontinence or impotence. On examination, power in the right lower limb was reduced, power in the left lower limb was normal. Reflexes of the right lower limb were absent but normal on the left. Anal sphincter tone was also reduced. Sensation was broadly reduced on the right side, but normal on the left. What is the most likely diagnosis?
- A. Brown-Sequard syndrome
 - B. Cauda equina syndrome
 - C. Conus medullaris syndrome
 - D. Spinal cord compression at T10
 - E. Syringomyelia

99. Geraldine, a 65-year-old lady, presents to her GP complaining of increasing weakness in her right hand over the last two months. She has particularly noticed her grip strength being affected, struggling to open jars and door handles. More recently, she has also been having difficulty swallowing. On examination, she has reduced power in thumb abduction and flexion of her right hand. She also has wasting of her 1st dorsal interosseus muscle, with intermittent fasciculations in her hand. On examination of her right upper limb, you notice an increase in tone and a brisk biceps reflex. Examination of her mouth reveals fasciculations of the tongue and a brisk jaw jerk. Sensation was normal throughout. What is the most likely diagnosis?

- A. Motor neurone disease
- B. Multiple sclerosis
- C. Myasthenia gravis
- D. Parkinson's disease
- E. Spinal cord compression

100. A 30-year-old man presents with generalised leg weakness and numbness. His weakness has progressed over the last week or so – initially, he noticed his feet felt 'heavy', whereas now he is struggling to walk. On questioning, he states he has no past medical history. He did, however, have a 'stomach upset' a couple of weeks ago after a barbeque. On examination, he is generally weak in both legs, with the muscles of his feet and ankles most affected. His ankle and knee reflexes are not elicitable. His blood glucose was 4.4. Nerve conduction studies reveal multifocal demyelination with reduced conduction velocity. He has a lumbar puncture which shows the following:

	CSF sample	Normal
CSF appearance	'Gin clear'	'Gin clear'
Glucose	3.3	>0.5 * blood glucose
Protein	3	0.15-0.45 g/L
Neutrophils	Nil seen	Nil

Given the above, what is the most likely diagnosis?

- A. Bacterial meningitis
- B. Charcot-Marie Tooth
- C. Chronic inflammatory demyelinating polyneuropathy
- D. Guillain-Barre syndrome
- E. Myasthenia gravis

[END OF PAPER 3]

Answers- see separate document for PTS 2a Mock SBA Series- Paper 3- ANSWERS

Scores/Feedback- When you have marked your paper please complete the Paper 3 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/R2Ti4734oQj3jnyz7>

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