

PTS 3a Mock SBA Series 2020

Paper 4- [Questions]- Version 1



Examination instructions

- Time allocated for examination: **2 hours 30 minutes**.
- 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.
- This examination is **not negatively marked**.
- 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 3a 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 edited and repeated in future years**. Thank you.

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[Question paper begins on the following page]

1. A 10 year old child presents to your clinic with his mother. He was started on a trial dose of Methylphenidate 6 weeks ago following a diagnosis of ADHD. His mother feels since starting the medication his symptoms have not improved at all. You decide to trial another medication, which of the following is most appropriate?

- A. Dexamfetamine
- B. Lisdexamfetamine
- C. Propranolol
- D. Sertraline
- E. Zopiclone

2. The DSM-V 6 criteria is used to diagnose ADHD, which of the following does not appear in the criterion needed to make a diagnosis?

- A. A 13 year old boy has lost his house keys 8 times in the last 6 months, he has been in trouble at school for forgetting to hand in his homework and remember the correct equipment
- B. A 6 year old child is continuously on the go and struggles to sit down for long periods of time
- C. A 9 year old child often shouts loudly when playing with his toys, his mum reports that he cannot play quietly
- D. A 10 year old often shouts out in class and answers questions before the teacher has finished asking them
- E. A 14 year old struggles to complete her homework and often takes longer than her classmates to finish work

3. An 18 month old child is brought to A&E by his parents, they explain that he has had a cold for 2 days and has developed a high pitched wheeze in the last few hours. On examination, he has a temperature of 37.6 degrees, SpO2 96% on air, RR 30, HR 105 and an audible wheeze. He is happily playing with his toys. You suspect he has an upper respiratory tract infection causing a viral induced wheeze. What is the most appropriate management?

- A. Inhaled Prednisolone
- B. Inhaled Salbutamol
- C. IV Dexamethasone
- D. IV Salbutamol
- E. Reassure the patient's parents and send home with safety netting advice

4. A 15 month old child saw their GP yesterday and was diagnosed with a Viral Induced Wheeze, over the last hour her condition has deteriorated. Which of the following features is most concerning?

- A. Respiratory Rate > 30
- B. The child becomes increasingly clingy to her mother
- C. The child becomes lethargic and floppy
- D. The child develops a cough
- E. The child does not want to finish her bottle

5. Which of the following presentations would you not expect to see in a neonate who had developed Necrotising Enterocolitis (NEC)?

- A. Abdominal Distension
- B. Vomiting
- C. Bloody Stools
- D. Feeding intolerance
- E. Vesicular Rash

6. Which of the following is the most appropriate for making a diagnosis of Necrotising Enterocolitis?

- A. Abdominal Ultrasound
- B. Abdominal X-Ray
- C. Arterial Blood Gas (ABG)
- D. Colonoscopy
- E. Gastroscopy

7. Which of the following is a cause of cyanotic heart disease?

- A. Aortic Stenosis
- B. Atrial Septal Defect
- C. Patent Ductus Arteriosus (PDA)
- D. Transposition of the great arteries
- E. Ventricular Septal Defect

8. A 3 year old child presents to your surgery, he has a history of recurrent ear infections. His mother has noticed that over the last week he is speaking loudly and often asks for the television volume to be turned up. You suspect he has glue ear. Which of the following is a treatment option for glue ear?

- A. Broad Spectrum Antibiotics
- B. Grommets
- C. There is no treatment available, symptom management only
- D. Manual drainage of fluid
- E. Surgery to widen eustachian tubes

9. A 9 month old is referred to the surgical team for repair of an inguinal hernia. Which of the following is an indication of the need to operate urgently?

- A. Significant parental distress
- B. The hernia has become strangulated
- C. The patient is male
- D. The hernia is located on the right side of the groin
- E. The hernia is reducible

10. Which of the following is not associated with cyanotic heart disease?

- A. Down Syndrome
- B. Maternal Rubella during pregnancy
- C. Marfan's Syndrome
- D. Prematurity
- E. William's syndrome

11. A 6-year-old boy, Tom, is brought to Accident and Emergency by his Mother. She states that Tom has been feeling 'tight chested' each of the last 4 nights, which settles before he goes to sleep. She has brought him into hospital because he was not able to talk to her without getting out of breath, which has never happened before. Mum has tried giving him 10 puffs of his salbutamol inhaler which did not help. He has a past medical history of eczema and asthma. You suspect Tom is suffering from an acute exacerbation of asthma. You perform an initial examination revealing (normal ranges in brackets):

- Respiratory rate 32 (18-25)
- SpO2 93% on room air (94-98%)
- Heart rate 105 (75-120)
- Blood pressure 110/75 (100-120/55-80)
- Temperature 37 degrees Celsius (36.5-37.5)
- Alert to voice, responding to questions appropriately but too breathless to complete sentences
- Widespread polyphonic wheeze heard throughout both lungs, equal air entry

What would not be included in your initial management of Tom?

- A. High-flow oxygen
- B. Intravenous aminophylline
- C. Corticosteroids
- D. Nebulised ipratropium
- E. Nebulised salbutamol

12. Karim is a 4 year-year-old boy who presents to the GP with his parents for his asthma review. They state that Karim has been doing okay over the last few months; most nights he goes to bed fine and does not have any symptoms. However, a couple of nights a week he needs his reliever inhaler to help his wheeze settle before he goes to sleep. Karim's parents state that he has just started school and is enjoying it lots, however at lunch-time he is not able to play football with his friends because he gets short of breath and needs his reliever inhaler. Karim's parents ask if there are any changes to his inhalers that might help his symptoms. Karim's repeat prescription is currently a salbutamol inhaler as needed, and a beclomethasone inhaler twice daily. What would be the most appropriate addition to Karim's treatment?

- A. 7-day course of oral prednisolone
- B. Adding inhaled salmeterol
- C. Adding oral montelukast
- D. Increasing his inhaled beclomethasone dose
- E. Increasing his inhaled salbutamol dose

13. Sam, a 7-month-old girl, is brought into A+E by her parents. She has become increasingly drowsy over the last 2 days and is now unresponsive. After stabilising her, the admitting doctors decide to do a septic screen including blood cultures and a lumbar puncture. She has no allergies to any drugs.

The lumbar puncture results come back showing (normal ranges in brackets):

- **White blood cells 600 (<8), neutrophil predominance**
- **Protein 300 (15-45)**
- **Glucose 30 (50-80)**

Blood cultures grow gram-negative diplococci. CSF microscopy reveals the presence of gram-negative diplococci. What treatment would be most appropriate to start immediately?

- A. Intravenous amoxicillin
- B. Intravenous benzylpenicillin
- C. Intravenous cefotaxime
- D. Intravenous dexamethasone
- E. Intravenous aciclovir

14. Sarah is a 4-year-old girl who presents to the GP because her Dad has noticed a rash on her leg. After examination, the GP informs Sarah's dad that she needs to be taken to hospital urgently as she believes the rash may represent Meningococcal septicaemia. Which one of the following features would be least consistent with the classical rash associated with Meningococcal septicaemia?

- A. Beginning anywhere on the body and spreading
- B. Irregular-sized lesions
- C. Non-blanching
- D. Purpuric
- E. Raised, palpable lesions

15. Kit is a 9-year-old boy who comes into the GP with his Mum after school. Mum has noticed a rash which the GP diagnoses as impetigo. Which one of the following statements regarding impetigo is incorrect?

- A. Classical appearance is erythematous macules, which may progress to vesicles, bullae or honey-coloured crusted lesions
- B. It is highly contagious
- C. It is most common on the face, but can occur on the hands and neck
- D. It is most-commonly caused by Staphylococcus aureus
- E. Topical antibiotics are always recommended

16. You are doing a newborn baby assessment (NIPE) on Travis, the day he is born. He was born at 34 weeks as his Mother suffered from severe pre-eclampsia and needed to be induced. As part of your NIPE, you palpate the scrotum to assess for the presence of two testes. You cannot feel Travis' left testis in his scrotum or his groin. Which one of these statements is true?

- A. Orchidectomy is the management option of choice for most cases of cryptorchidism
- B. Travis should undergo hormonal testing and karyotyping
- C. Travis will need referral to a paediatric surgeon
- D. Travis' cryptorchidism is termed 'impalpable'
- E. Travis' prematurity is unlikely to have played a part in his cryptorchidism

17. Emmanuelle is a 13 year-old-girl who is at a restaurant with her family. Mid-way through her meal, her face begins to flush and her lips become swollen. She starts gasping for air and collapses. Her mother administers her a shot from her 'epi-pen' and calls an ambulance. Which one of the following statements regarding anaphylaxis is false?

- A. Intravenous adrenaline is the most important initial pharmacological treatment
- B. Intravenous corticosteroids and antihistamines are given immediately, but work over hours
- C. It is a life-threatening hypersensitivity reaction, characterised by acute onset airway, breathing and circulation problems alongside skin and mucosal changes
- D. It is characterised by mast cell degranulation, leading to the release of histamine and other inflammatory mediators
- E. Prior sensitisation to an allergen is required to cause an anaphylactic reaction

18. James is a 6-month old boy who attends the GP on a same-day appointment with his parents. James' parents are worried about him as over the last three days he has been having episodes of inconsolable crying where he draws his legs up and cannot be calmed. His parents note that his tummy is looking bigger than normal. He has vomited a small amount today; the parents are unable to accurately recall if it was a different colour to normal. They have brought him to the GP urgently because they are finding that it is harder to rouse James over the last hour or so. What is the most likely diagnosis?

- A. Appendicitis
- B. Infantile colic
- C. Intussusception
- D. Pyloric stenosis
- E. Volvulus

19. Abdul is an 18-month-old boy who is brought to the Emergency Department by his parents with abdominal pain. The admitting doctors make a diagnosis of intussusception.

Which of the following is false regarding the investigation and management of intussusception?

- A. A 'target sign' can be seen on the investigation of choice, which confirms the diagnosis
- B. An abdominal X-ray may show distended small bowel
- C. Intravenous fluids are needed
- D. Operative reduction is the management of choice in most patients
- E. The investigation of choice is an abdominal ultrasound scan

20. Rachel is a 9 year-old-girl who is brought to the GP by her parents. Rachel has been suffering from diarrhoea for the last 3 days, accompanied by vomiting, following visiting a restaurant earlier in the week. She appears well in herself and is responding to the GPs questions. Her mouth and tongue is dry and she complains of feeling thirsty and light-headed.

Which one of the following statements regarding Rachel is true?

- A. Her parents should be instructed to purchase loperamide over the counter and use this until Rachel is better
- B. Her parents should be instructed to purchase some oral rehydration solution sachets and feed them to her often and in small amounts
- C. She should be admitted to hospital for intravenous fluids
- D. The GP should prescribe a short course of antibiotics
- E. The GP should take blood for Rachel's electrolytes, kidney function, and blood cultures

21. Which of the following is NOT a sign of lithium toxicity?

- A. Coarse tremor of extremities
- B. Gastrointestinal upset
- C. Hyper-reflexia
- D. Hypo-reflexia
- E. Polyuria

22. Which of the following is NOT used as a mood stabiliser in the long term management of bipolar disorder?

- A. Carbamazepine
- B. Chlorpromazine
- C. Lithium
- D. Olanzapine
- E. Sodium Valproate

23. Mr Snellen, a 75 year old male comes into A&E with his wife who is worried that he seems confused. His PMH includes hypertension, type 2 diabetes mellitus, osteoarthritis and depression. He has no known allergies, doesn't smoke and drinks 4 cans of beer over the weekends. He denies the use of any illicit drugs. He is currently taking Amlodipine, Ramipril, Metformin, Co-codamol and Sertraline. On examination he seems drowsy and confused, scoring 7/10 on the abbreviated mental test. His FBC comes back as normal and his U&Es are as follows -

Na+: 125 (133–146 mmol/L)
K+: 4.4 (3.5–5.3 mmol/L)
Ca²⁺(adjusted): 2.4 (2.2-2.6 mmol/L)
Mg²⁺: 0.9 (0.7–1.0 mmol/L)
Urea: 4.0 (2.5 – 7.8 mmol/L)
Creatinine: 75 (59–104 µmol/L)

Which medication is most likely to have contributed to the changes in his U&Es?

- A. Amlodipine
- B. Co-codamol
- C. Metformin
- D. Ramipril
- E. Sertraline

24. John, a 90 year old male who was admitted for pneumonia has started becoming increasingly agitated over the past 2 days and frequently wanders off the wards. The healthcare assistants say his appetite has reduced significantly. He is currently on piperacillin with tazobactam (initiated in hospital) and PRN oxycodone (initiated in hospital), clopidogrel, isosorbide mononitrate and amlodipine. He usually lives in a care home and has smoked 40 pack years and doesn't drink alcohol. What would be the first line management for John?

- A. Haloperidol
- B. Lorazepam
- C. Nasogastric tube insertion
- D. No action
- E. Orientation, reassurance and a quiet environment

25. A 24 year old female presents to the A&E having cut herself. On inspection she has numerous cuts on her forearms. On taking a history she uses inappropriate language and tells you that she "just wants to die". On further probing you discover she has recently split up with her boyfriend; she mentions her previous 4 relationships have ended badly too. She is very angry and says that the hospital service is "useless". Her PMH includes 3 previous attendances to A&E for paracetamol overdoses and cutting. Her medical notes mention she has had to move foster homes twice having suffered sexual abuse at both instances. The medical staff in A&E respond to her professionally and with care and the acute crisis is now over. After this, which of the following would be an appropriate treatment option for this lady?

- A. Counselling
- B. Dialectical behavioural therapy
- C. Family therapy
- D. Olanzapine
- E. Sertraline

26. Mr Nair, a 57 year old male has recently undergone successful withdrawal from alcohol and is currently managing to stay alcohol free. He is worried about relapsing as he is having a reunion party with his university friends this weekend. He wants help to remain abstinent from alcohol and wonders whether there is any medication which will put him off from drinking if he drinks a bit of alcohol due to peer pressure. What would be the most appropriate treatment for him in this case?

- A. Acamprosate
- B. Chlordiazepoxide
- C. Disulfiram
- D. Lorazepam
- E. Naltrexone

27. Bob, an 89 year old male who was admitted to the hospital for community acquired pneumonia 4 days ago now seems very sleepy and lethargic. You try to take a history form him but he sleeps in between questions. You find out from his notes that he had been agitated and aggressive 2 days ago but has since calmed down. He has a PMH of HTN, MI, dementia, hearing impairment, transurethral resection of the prostate (TURP) and osteoarthritis. He is currently on piperacillin with tazobactam (initiated in hospital), PRN oxycodone (initiated in hospital), clopidogrel, isosorbide mononitrate, amlodipine, oxybutynin and morphine oral solution. He is reported to have decreased food and water intake and the healthcare assistants mention he hasn't opened his bowels since he was admitted. The only abnormalities on examination are his drowsiness and fecal impaction on PR exam. He usually lives in a care home and has smoked 30 pack years and drinks 2 cans of lager every weekend. What is the most likely diagnosis and which medications have contributed to his constipation?

- A. Depression; oxycodone, isosorbide mononitrate and morphine
- B. Hyperactive delirium; oxycodone, isosorbide mononitrate and morphine
- C. Hypoactive delirium; oxycodone, isosorbide mononitrate and morphine
- D. Hyperactive delirium; oxycodone, oxybutynin and morphine
- E. Hypoactive delirium; oxycodone, oxybutynin and morphine

28. Which of the following tests used to regularly monitor a patient taking long-term lithium?

- A. Clotting profile and LFT
- B. FBC and U&Es and eGFR
- C. LFT and U&Es and eGFR
- D. TFT and LFT
- E. TFT and U&Es and eGFR

29. A 27 year old homeless man presents to the hospital after having had an episode of a tonic-clonic seizure. You find out he consumes a bottle of whisky a day. He says he is sick of living like this and tried to stop drinking 2 days ago. What would be the most appropriate management plan to help him stop drinking?

- A. Behavioural couples therapy
- B. Cognitive behavioural therapy
- C. Community-based assisted withdrawal with chlordiazepoxide
- D. Inpatient assisted withdrawal with chlordiazepoxide
- E. Inpatient assisted withdrawal with disulfiram

30. Jack, a 52 year old male, presents to A&E as he doesn't quite feel right. He appears agitated and confused, is shivering and sweaty, and has a tremor in his hands. On examination he has a heart rate of 110, blood pressure of 130/85, respiratory rate of 13, oxygen saturation of 99% on air and a temperature of 38.9 degrees celsius. His PMH includes hypertension and depression. He is currently on ramipril and sertraline. He smokes 20 cigarettes a day and has since he was 17. He drinks 2 cans of lager a day and admits to having recently started using cocaine. What is the most likely diagnosis for his presentation?

- A. Delirium tremens
- B. Hyponatraemia
- C. Korsakoff's syndrome
- D. Neuroleptic malignant syndrome
- E. Serotonin syndrome

31. What is the most common form of dementia?

- A. Alzheimer's disease
- B. Creutzfeldt Jakob disease
- C. Frontotemporal dementia
- D. Lewy body dementia
- E. Vascular dementia

32. Which of these is not a feature consistent with an early diagnosis of Alzheimer's disease?

- A. Anxiety
- B. Faecal incontinence
- C. Forgetting name of family member
- D. Lack of orientation to surroundings
- E. Short term memory loss

33. Which of these should not be used in the long-term management of generalised anxiety disorder?

- A. Citalopram
- B. Cognitive behavioural therapy
- C. Duloxetine
- D. Lorazepam
- E. Propranolol

34. Which of these investigations are not performed to exclude organic causes of generalised anxiety disorder?

- A. 24-hour urine metanephrines
- B. Electrocardiogram
- C. Full blood count and iron studies
- D. Syphilis serology
- E. Thyroid function tests

35. What type of hallucination is most suggestive of delirium tremens?

- A. Extracampine
- B. Gustatory
- C. Lilliputian
- D. Olfactory
- E. Passivity phenomenon

36. An 18-year-old girl with a history of depression takes an overdose of her antidepressants to end her life. She is suspected of having serotonin syndrome on admission. What combination of drugs is most likely to cause serotonin syndrome in this case?

- A. Amitriptyline and lithium
- B. Fluoxetine and phenelzine
- C. Lorazepam and citalopram
- D. Olanzapine and haloperidol
- E. Phenelzine and cheese

37. A 33-year old man is brought into A&E by paramedics with reduced consciousness, needle track marks on his legs, and pinpoint pupils. You suspect a drug overdose. What is the single best antidote to his likely drug overdose?

- A. Acetylcysteine
- B. Cyproheptadine
- C. Flumazenil
- D. Naloxone
- E. Naltrexone

38. A 35-year old man with bipolar disorder takes an overdose of one of his medications. He attends A&E with diarrhoea, vomiting, dysarthria, and dizziness but can't remember which of his medications he took. On examination he has a coarse tremor. What is he likely to have overdosed on?

- A. Lamotrigine
- B. Lithium
- C. Lorazepam
- D. Olanzapine
- E. Sodium valproate

39. Wernicke's encephalopathy is characterised by which triad of symptoms?

- A. Bradykinesia, resting tremor, postural instability
- B. Confabulation, amnesia, loss of insight
- C. Ophthalmoplegia, gait disturbance, confusion
- D. Scanning speech, intention tremor, nystagmus
- E. Urinary incontinence, dementia, gait disturbance

40. Wernicke's encephalopathy is caused by a deficiency in which vitamin?

- A. B1
- B. B12
- C. B6
- D. C
- E. D

41. Emily, a 15 year old girl, presents to you in your GP surgery as she is worried that all of her friends have started their periods and she hasn't. On examination she is in the 5th percentile of height and you notice that her neck is slightly webbed. With the diagnosis in mind, what associated condition would you most expect to find?

- A. ASD
- B. Bicuspid aortic valve
- C. Bicuspid mitral valve
- D. Tetralogy of Fallot
- E. VSD

42. Janice, a 32 year old woman, presents to your GP clinic with an 8 month gap since her last menstrual period. She previously had regular periods which recently were becoming slightly more spaced out, with menarche at 13. She is worried about this, as she would like to start trying to have a baby with her partner. She is not currently pregnant. When asking a little further, she tells you that she's also had difficulty concentrating, and finds that sometimes she gets very hot and occasionally wakes in the middle of the night sweating. You decide to run some blood tests to investigate these symptoms further. Which of the following would you expect to see in this condition?

- A. High FSH and LH
- B. Low FSH and LH, low T3/T4
- C. Low FSH and LH, low GnRH, high prolactin
- D. Normal FSH and LH
- E. Normal FSH and high LH

43. Rachel has just given birth to a healthy baby weighing 4kg through a vaginal birth. During the delivery the midwife noted that she had a perineal tear, which extended into the muscles of the perineum but did not reach the anal sphincter. Which of the following best describes the tear?

- A. First degree
- B. Second degree
- C. Third degree (a)
- D. Third degree (b)
- E. Fourth degree

44. The consultant has just delivered Julie's 4.8kg baby which was complicated by shoulder dystocia. The baby now has Erb's palsy. Which nerve roots are involved in this condition?

- A. C5-C6
- B. C5-T1
- C. C6-C7
- D. C7-C8
- E. C8-T1

45. Phoebe is a 26-year-old woman who would like to discuss options for termination of her pregnancy. Her gestation is 6 weeks. With her gestational age in mind, which is the most appropriate management?

- A. Dilatation and evacuation
- B. Mifepristone and misoprostol
- C. Mifepristone only
- D. Misoprostol only
- E. Suction curettage

46. Monica is currently in hospital to enable staff to monitor her pre-eclampsia. Her partner has just informed the midwife that she has just been to the bathroom and they saw dark urine. He also tells the midwife that she has been having some pain just above her bump. The midwife asks you to review her blood test results – which would you not likely see?

- A. Elevated liver enzymes
- B. High platelet count
- C. Low haemoglobin
- D. Low fibrinogen
- E. Raised lactic dehydrogenase

47. Carol is a 32 year old women who has presented at 21 weeks gestation with suspected preterm labour. This is her first child, and she has never had any cervical surgery. A transvaginal ultrasound shows her cervical length to be 21mm. What is the most appropriate management?

- A. Betamethasone
- B. Cervical cerclage
- C. Magnesium sulphate
- D. Nifedipine
- E. Vaginal progesterone

48. Susan would like a termination of her pregnancy. Which of the following is not a grounds for a TOP in England?

- A. Continuation of pregnancy would involve risks to the pregnant woman greater than if pregnancy terminated
- B. Pregnancy is <24 weeks and would involve risk (greater than if pregnancy terminated) of injury to physical or mental health of pregnant woman
- C. Pregnancy is <24 weeks and would involve risk (greater than if pregnancy terminated) of injury to physical or mental health of pregnant woman's partner
- D. Termination necessary to prevent grave permanent injury to physical or mental health of pregnant woman
- E. Substantial risk that child would be born with such physical or mental abnormalities to be seriously handicapped

49. Janine has presented to A&E at 33 weeks gestation in her first pregnancy with sudden onset of painful bleeding. On examination, you note her abdomen is woody to palpate. What is your diagnosis?

- A. Miscarriage
- B. Placental abruption
- C. Placenta accreta
- D. Placenta praevia
- E. Vasa praevia

50. Kathy is a 31-year-old woman attending your GP surgery. She would like to get pregnant, but she was with her friend when she had an antepartum haemorrhage, and is scared that she may also get placenta praevia like her friend did. She wants to know if she has any risk factors for the same condition. Which of these is not a risk factor for placenta praevia?

- A. Increased age
- B. IVF
- C. Maternal smoking
- D. Multiple pregnancy
- E. Previous caesarean section

51. You are reviewing a patient with a history of infertility. You wish to arrange a blood test for progesterone. Assuming that she has a 35-day menstrual cycle, at what day in the cycle should the blood test be taken?

- A. Anytime – the level will be stable throughout the menstrual cycle
- B. Day 7
- C. Day 14
- D. Day 21
- E. Day 28

52. A 26-year old hairdresser presents with secondary amenorrhoea of four months' duration. She has noticed white discharge coming from her breasts. A home urinary pregnancy test was negative.

What blood test would be most helpful in making the diagnosis?

- A. Anti-Müllerian hormone
- B. Beta hCG in serum
- C. LH and FSH
- D. Oestrogen
- E. Prolactin

53. A 31-year old teacher presents with secondary amenorrhoea, of six months' duration. She denies any past medical or gynaecological history.

Her blood test results demonstrate:

LH	1.1 U/L	-
FSH	1.4 U/L	-
Oestradiol	42 pmol/L	(100-500)
TSH	0.8 IU/L	(0.4 – 5.0)
Free T4	6.2 pmol/L	(10-22)

What underlying diagnosis would account for these results?

- A. Anorexia nervosa
- B. Hypothyroidism
- C. Panhypopituitarism
- D. Polycystic ovary syndrome (PCOS)
- E. Premature menopause

54. A 28-year old lady who is 20 days post-partum attends your surgery feeling hot and feverish for the past 2 days and reports a red, swollen, painful left breast. On examination, her temperature is 37.5C, and there is erythema and firmness to the left lower quadrant of the left breast. Given the diagnosis of puerperal mastitis, which of the following represents the best advice to give her?

- A. Admit for intravenous antibiotics
- B. Advise her to continue breastfeeding
- C. Advise her to express and discard the breast milk, and resume when the infection has resolved.
- D. Advise her to stop breastfeeding immediately as the breast milk may transmit infection to her baby.
- E. Prescribe Ciprofloxacin

55. Which of the following is not a presenting feature of ovarian tumours?

- A. Acute abdomen
- B. Amenorrhoea
- C. Galactorrhoea
- D. Hirsutism
- E. Thyrotoxicosis

56. A 28-year old woman presents to her GP with intermenstrual bleeding and dyspareunia. She does not use any hormonal contraceptives. After ruling out a sexually transmitted infection and fibroids, she is referred to colposcopy where she is diagnosed with a grade 1A squamous cell carcinoma of the cervix. She is married and hopes to have children in the future.

Which treatment option is most appropriate for this woman's cancer?

- A. Cisplatin chemotherapy
- B. Cone biopsy
- C. Laser ablation
- D. Radical trachelectomy
- E. Short course of radiotherapy

57. Which of the following is the likely diagnosis in a 15-year old schoolgirl who presents with cyclical pelvic pain, yet has not started menstruating?

- A. Anovulatory cycles
- B. Endometriosis
- C. Haematocolpos
- D. Juvenile type granulosa cell ovarian tumour
- E. Polycystic ovarian syndrome

58. A 71-year old nulliparous woman presents with hirsutism of eight months' duration. She is otherwise well and denies any past medical or gynaecological history. Her periods stopped at the age of 52 years.

LH	44 U/L	-
FSH	61 U/L	-
Oestradiol	21 pmol/L	(100-500)
Testosterone	3.5 nmol/L	(<1.6)

What is the most likely cause of her hirsutism?

- A. Adrenal carcinoma
- B. Menopause
- C. Ovarian hyperthecosis
- D. Panhypopituitarism
- E. Polycystic ovary syndrome

59. A 24-year old woman presents with secondary amenorrhoea of six months' duration. She denies any past medical or gynaecological history. Her blood results demonstrate:

LH	< 0.05 U/L	-
FSH	< 0.05 U/L	-
Oestradiol	44 pmol/L	(100-500)
TSH	3.2 U/L	(<7)
Free T4	14 pmol/L	(10-22)

What underlying diagnosis would account for these results?

- A. Anorexia nervosa
- B. Hypothyroidism
- C. Panhypopituitarism
- D. Polycystic ovary syndrome
- E. Premature menopause

A 31-year old woman who gave birth 2 weeks ago presents for review with her husband. He is worried by her mood as she now seems depressed and is interacting poorly with the baby. He describes her mood three days ago being much different, when she was talking in a rapid and incoherent fashion about the future. The mother denies any hallucinations but states that her child has been brought into a "very bad world". What is the most appropriate management?

- A. Arrange urgent admission
- B. Cognitive behavioural therapy
- C. Reassurance + review by health visitor
- D. Start fluoxetine
- E. Start lithium

61. Which of the following signs would you expect to typically find on a chest X-ray of a patient with heart failure?

- A. Bat wing opacities
- B. Bilateral calcified pleural plaques
- C. Bilateral hilar lymphadenopathy
- D. Pericardial effusion
- E. Tracheal stenosis

62. You are working in general practice when you see a patient whom you suspect to have heart failure. Which of the following investigations would be most useful in determining how you manage this patient?

- A. 12-lead ECG
- B. Blood pressure measurement
- C. Echocardiogram
- D. Serum natriuretic peptide measurement
- E. Troponin measurement

62. The Mental Capacity Act, 2005 provides a test for assessing capacity of a person who has been identified to have an impairment of the mind or brain that affects their ability to make decisions. Which of the following is not a part of the test?

- A. The person is assessed as lacking capacity if they are unable to understand the information relevant to the decision
- B. The person is assessed as lacking capacity if they are unable to communicate their decision by any possible means
- C. The person is assessed as lacking capacity if they can only retain the information for a short period of time
- D. The person is assessed as lacking capacity if they are unable to weigh the information as part of the decision-making process
- E. The person is assessed as lacking capacity if they are unable to retain the information long enough to share their reasoning

64. A 15-year-old girl presents with right iliac fossa pain. She becomes progressively tachycardic and a ruptured ectopic pregnancy is suspected. She is deemed to be mentally competent and will agree to surgery, but asks that her parents are not informed. What should you do?

- A. Consent by proxy on behalf of the underage patient
- B. Consent the patient
- C. Contact the parents to obtain consent
- D. Do not proceed with the treatment
- E. Proceed without consent

65. A 4-year old boy is brought into the GP clinic by his mother with a fever, cough, diarrhoea and runny nose. On examination, you notice some red spots with white centres on the inside of his mouth. His family have recently immigrated to the UK from the Middle East and do not have any health records with them. Which vaccination is the boy unlikely to have received?

- A. DTaP
- B. Hib
- C. MenB
- D. MMR
- E. Rotavirus

66. A 23-year old man presents to his GP with a 2-month history of low mood and fatigue. What is the most appropriate next step in the management of this patient?

- A. Ask him to fill out the PHQ-9 questionnaire
- B. Do a full blood count and thyroid function tests
- C. Prescribe oral Sertraline 50mg OD
- D. Refer him for cognitive behavioural therapy
- E. Referral to a psychiatrist

67. A 3-year old girl is registered with the GP surgery as a temporary resident. She is brought in by her mother with a three-day history of fever, cough, a runny nose and red eyes. This morning her mother noticed that she had developed a rash. On examination, you notice a maculopapular rash on her forehead and neck, and Koplik's spots on the inside of her mouth. She does not have any previous health records as her family recently moved to the UK from a war-torn country. She was born at home. What is the most appropriate next step in the management of this patient?

- A. Arrange for her to be admitted to hospital
- B. Do a full blood count and check the inflammatory markers
- C. Notify Public Health England
- D. Prescribe a 10-day course of azithromycin
- E. Wait for the results of a salivary swab before deciding the best course of action

68. A 19-year old patient with a three-year old child attends the GP surgery for a routine appointment. You notice that the patient has unusual bruising on her cheek. She initially says that this was a result of a fall, but later discloses that her partner had pushed her during an argument, and she had fallen. She tells you that her partner has a quick temper and that similar incidents have occurred in the past. What is the most appropriate course of action?

- A. Call the police
- B. Discuss your concerns regarding her child's safety and seek consent to disclose their information to social services
- C. Document what the mother has said in her notes so that other healthcare professionals are aware that they need to look out for signs of abuse on the mother or child in the future
- D. Give her a leaflet for the domestic abuse helpline
- E. Tell her that it's a private matter between her and her partner, and carry on with the routine appointment

69. A 32-year old woman attends the GP surgery with her husband to discuss a worsening of her dysmenorrhoea. Whilst examining her abdomen, you notice some unusual marks near her groin. The woman doesn't speak English very well so her husband explains that she dropped some hot soup on her. You don't think that explains the marks but carry on your consultation. Later in the consultation, you notice that the woman mouths "help!" when her husband is not looking. What is the most appropriate course of action?

- A. Ask the patient's husband if he could wait outside for a few minutes
- B. Ask the patient if everything is okay
- C. Book the patient in for a repeat appointment in a week and hope that she finds a way to come by herself
- D. Excuse yourself from the consultation room so you can go outside and call the police
- E. Send her home as you probably misunderstood her

70. A 43-year old man presents to his GP with a 12-hour history of nausea and severe anxiety. On examination, he appears to be sweating a lot and has a coarse peripheral tremor. On further questioning, he reveals that his partner had threatened to leave him if he did not “sort out his drinking problem” and so he had stopped consuming alcohol a day ago. What is the most appropriate next step in the management of this patient?

- A. Arrange for him to be admitted to hospital
- B. Assess his AUDIT score
- C. Assess his risk of suicide
- D. Give him information about the local Alcoholics Anonymous group
- E. Prescribe 25mg oral naltrexone hydrochloride

71. John, a 40 year old male, presents to the emergency department with severe pain behind his right eye for the last 30 minutes. He states that his right eye has also been ‘watering excessively’ for the last hour or so. The patient has a past medical history of coronary artery disease. John has had similar episodes like this over the last few weeks, but this time the pain is significantly worse which has prompted him to present to the emergency department. Physical examination, neurological examination, CT head and bloods are normal. Ophthalmic examination demonstrates conjunctival injection and miosis of the right pupil. Which of the following is the most appropriate treatment for this patient?

- A. Carbamazepine
- B. High flow oxygen
- C. Propranolol
- D. Sumatriptan
- E. Verapamil

72. A patient with known epilepsy on the neurological ward starts to have a grand-mal seizure. Over 5 minutes passes and the patient’s seizure has not ended. The neurological team intervene. What is the most appropriate initial management?

- A. Buccal midazolam
- B. CT head
- C. EEG
- D. IV Lorazepam
- E. Sodium valproate

73. Adam is a 60-year-old male presenting with a collapse. The collapse was witnessed by his wife. The primary diagnosis made is syncope. Which of the following features of the clinical history, if present, makes the diagnosis of a seizure more likely than syncope?

- A. Confusion after recovery
- B. Dehydration prior to fall
- C. Looking pale prior to fall
- D. Intense exertion prior to fall
- E. Mild jerking of upper limbs for 15 seconds during fall

74. A 26-year-old female patient with known focal epilepsy comes to see you in your GP practice as she has started to develop an allergic reaction towards her carbamazepine medication – normally

used to control her epilepsy. Which anti-epileptic drug would be the preferred alternative medication?

- A. Sodium Valproate
- B. Phenytoin
- C. Propranolol
- D. Lamotrigine
- E. Lorazepam

75. A 50-year-old woman presents to your clinic referred by her GP with breathlessness that has been going on for many years. Her friends have also noted that she slurs her speech if she talks for any extended period of time. Her symptoms are usually worse at the end of the day. She has a significant smoking history. You request spirometry and the results are FEV1= 1.73 (55% predicted), FVC= 2.27 (55% predicted) and FEV1/FVC= 80%. A CT chest, abdomen and pelvis reveals a large anterior mediastinal mass. What is the most likely diagnosis?

- A. Congestive heart failure
- B. COPD
- C. Interstitial lung disease
- D. Lung cancer
- E. Myasthenia Gravis

76. Mr Johnston is a 70-year-old male who presents with a one-year history of progressive ataxia, urinary incontinence and memory loss. He is otherwise asymptomatic. He has no significant past medical history and is not on any medication. What is the most likely diagnosis?

- A. Alzheimer's disease
- B. Cauda equina syndrome
- C. Cerebellar lesion
- D. Normal pressure hydrocephalus
- E. Viral encephalitis

77. Aidan, an 8-year old boy, is brought to A&E after playing and falling off the living room sofa and hitting his head on a table. His Mum tells you that his arms started to twitch for a few seconds, but he did not lose consciousness. Which of the following best describes this event?

- A. Absence seizure
- B. Atonic seizure
- C. Clonic seizure
- D. Myoclonic seizure
- E. Tonic seizure

78. A 75-year-old woman is brought to the emergency department because of progressive headache and lethargy for the past five days. Her husband reports that for the past month she has been progressively more withdrawn. CT scan of the head shows marked dilatation of both lateral ventricles. The 3rd and 4th ventricles are normal in size. Her condition is most likely due to occlusion of which of the following structures?

- A. Arachnoid granulations
- B. Cerebral aqueduct
- C. Foramen of Magendie
- D. Foramina of Luschka
- E. Foramina of Monro

79. A female patient arrives in the emergency department via ambulance following an epileptic seizure in the high street. On examination, she opens her eyes when her trapezius muscle is squeezed but not to voice. Furthermore, she flexes her arm in response to the pain being applied but is not able to adequately localise. She is making verbal incomprehensible sounds. What is her GCS score?

- A. 6
- B. 7
- C. 8
- D. 9
- E. 10

80. A 32-year-old lady who suffers from multiple sclerosis presents to clinic for review, she describes remission of her symptoms, however, describes mild paresthesia in her right hand only while bathing. Which of the following best describes this phenomenon?

- A. Brudzinski's sign
- B. Charcot's neurological triad
- C. Kernig's sign
- D. Lhermitte's sign
- E. Uhthoff's phenomenon
- F.

81. A 70 year old man has suffered from very frequent loose watery stools over the past 3 days. He feels weak, dizzy and slightly confused. He has Type 2 diabetes mellitus and was discharged from the hospital 4 days ago after being admitted for community-acquired pneumonia. He does not smoke, drinks 10 units of alcohol a week, and has not travelled abroad recently. His temperature is 38.0 degrees C, HR 100bpm, BP 95/50 mm/Hg. His abdomen is soft with epigastric tenderness. A DRE shows an empty rectum. What is the single most appropriate course of action?

- A. CT abdomen
- B. Flexible sigmoidoscopy
- C. Nasogastric tube insertion
- D. Intravenous fluids
- E. Loperamide

82. A 58 year old woman has felt increasingly lethargic over the past 11 months. Her husband pointed out that her eyes look yellow. She has been recently diagnosed with hypothyroidism, for which she takes Levothyroxine. She is usually fit and well otherwise with no significant other past medical history. Which single autoantibody is most consistent with the likely diagnosis?

- A. Anti-centromere
- B. Anti-double stranded DNA
- C. Anti-mitochondrial
- D. Anti-phospholipid
- E. Anti-smooth muscle

83. A 21 year old man has gained 7kg in weight over the past 1 month. His face has become very puffy, especially around the eyes. His legs are visibly oedematous upon examination, and his socks leave imprints in his ankles at the end of the day. Urine dipstick shows protein 3+ . Given the likely diagnosis, what is not a complication of his condition?

- A. Acute kidney injury
- B. Deep vein thrombosis
- C. Hyperlipidaemia
- D. Pleural effusion
- E. Spontaneous bacterial peritonitis

84. A 41 year old woman comes into A&E looking unkempt and smelling strongly of alcohol. She is confused and agitated, shouting about seeing little green men on the walls and floor. She also has a marked tremor and is getting increasingly agitated after being told to wait to be seen. Given the likely diagnosis, what is the single best pharmacological management for her condition?

- A. Acamprosate
- B. Buprenorphine
- C. Clozapine
- D. Haloperidol
- E. Lorazepam

85. A 25 year old woman comes to her GP as she feels like her heart has been beating very quickly. Upon examination, her pulse is irregularly irregular. She said that she noticed her trousers have been looser recently and she has felt more irritable and 'stressed' over the past few months. There is a fine tremor in both hands. Given the likely diagnosis, what would be the single most appropriate drug to manage her symptoms?

- A. Carbimazole
- B. Levothyroxine
- C. Nifedipine
- D. Propylthiouracil
- E. Propranolol

86. A 31 year old man presents at his GP with a single genital lesion at the tip of his penis. He does not complain of any pain and does not suffer with any urinary symptoms. He does not have a regular sexual partner and has had 5 new sexual partners in the past 2 months. Given the likely diagnosis, what is likely to be seen under dark field microscopy?

- A. Flagellated protozoa
- B. Gram positive cocci in chains
- C. Gram negative diplococci
- D. Pseudohyphae
- E. Spirochaete

87. A 19 year old man visits his GP for a regular checkup as he has a past medical history of Type 1 Diabetes Mellitus. Upon examination, the GP discovers that he has a jerky pulse and a harsh ejection systolic murmur on auscultation. The patient only takes insulin for his diabetes and is otherwise fit and well. However, he mentioned that his uncle and grandfather passed away from a heart attack at 22 and 25 years old respectively. What is the likely cause of the murmur?

- A. Aortic regurgitation
- B. Aortic stenosis
- C. Cardiac myxoma
- D. Hypertrophic cardiomyopathy
- E. Mitral regurgitation

88. A 24 year old girl presents to A&E with 3 days of crampy abdominal pain. She reports ongoing bloody diarrhoea where she has been going to the toilet 7 times a day. She is pale and her abdomen is distended upon examination. She is generally fit and well and is a non-smoker. Her observations show:

Temp. 38.1 degrees Celsius, HR 100 bpm, RR 14, BP 100/80, O2 98% OA. Given the likely diagnosis, what is the most appropriate next step in management?

- A. IV Hydrocortisone
- B. IV Mesalazine
- C. Oral Azathioprine
- D. Oral Prednisolone
- E. Rectal Sulfasalazine

89. A 18 month old boy is rushed into A&E as he has developed a high fever of 39.1 degrees Celsius overnight. He is distressed and irritable and he has refused to feed. He cries when you try to examine his neck. His mum said that he had a runny nose and cough 5 days before the fever began. His CSF film shows gram positive cocci. Given the likely diagnosis, what is the causative organism?

- A. Escherichia Coli
- B. Haemophilus Influenzae
- C. Listeria Monocytogenes
- D. Neisseria Meningitidis
- E. Streptococcus Pneumoniae

90. A 17 year old girl comes into the GP very upset as she finds it difficult to lose weight and has struggled with acne since puberty started at 12 years old. She also complains of excess facial hair and her periods have been very irregular. Given the likely diagnosis, what biochemical abnormality is a feature of this condition?

- A. Low testosterone
- B. Low TSH
- C. Raised FSH
- D. Raised LH
- E. Raised sex hormone binding globulin

91. A 45-year old male presents to his GP saying that his husband is fed up of him snoring. He also thinks that his wedding ring and his shoes have become tighter. On inspection, you notice that his jaw and supra-orbital ridge are very prominent. What is your investigation of choice to diagnose this condition?

- A. Growth hormone level
- B. Oral glucose tolerance test
- C. Visual fields testing
- D. Thyroid hormone levels
- E. Random blood glucose

92. A 35-year old female has a temperature of 38 degrees Celsius and is admitted to the respiratory ward with a suspected pneumonia. She has a past medical history of primary adrenal insufficiency, and takes hydrocortisone and fludrocortisone for this. Which of the following changes should be made to her current medication?

- A. Double the doses of fludrocortisone and hydrocortisone
- B. Double the dose of fludrocortisone
- C. Double the dose of hydrocortisone
- D. Half the doses of fludrocortisone and hydrocortisone
- E. Half the dose of hydrocortisone

93. A 25-year-old male, Hassan, presents to the GP with a painless lump in his neck. On further questioning he has also been feeling very hot and sweaty at night, and has lost 3Kg in the last month. You refer him for a lymph node biopsy, which shows Reed-Sternberg cells. What is the likely diagnosis?

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

94. Julie, a 22-year old woman comes to your GP surgery because she thinks she has pulled an abdominal muscle in the gym. She was experiencing generalised lower abdominal pain yesterday, which has now moved to a specific point between the umbilicus and the anterior superior iliac spine. She also feels quite hot and sweaty. A pregnancy test is negative. What is the definitive treatment for this condition?

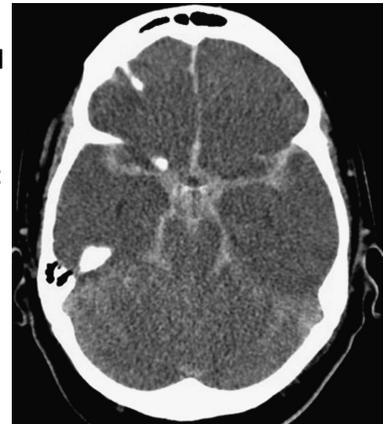
- A. Nil by mouth to rest the bowel
- B. IV fluids
- C. IV antibiotics
- D. Appendicectomy
- E. Hysterectomy

95. Sandra, a 37-year-old female, presents to the GP complaining of “tummy pain”. She has been suffering with this for years, but has only just got the courage to visit the GP. Her pain is associated with abdominal bloating, and gets worse around the time of her period and when she is stressed. It feels better after she has opened her bowels. She has no history of fever, weight loss or blood in stools. What would be the most appropriate medication to prescribe for her?

- A. Buscopan
- B. Metronidazole
- C. Mesalazine
- D. Prednisolone
- E. Morphine

96. Avanti, a 20-year-old female, presents to A&E with a sudden onset severe headache. She is wearing sunglasses and feels sick. Past medical history: Ehlers Danlos syndrome, asthma as a child. Social history: smokes 15 cigarettes per day, 3 bottles of wine per week, recreational cocaine use. Her CT head is shown below. Which of the following is not a risk factor for this condition?

- A. Ehlers Danlos syndrome
- B. Asthma as a child
- C. Smoking history
- D. Alcohol history
- E. Cocaine use



97. Harrison, a 25-year-old male, comes to see you in your GP surgery because of his headaches. His headaches last for about 8 hours and feel like a pulsing pain on the left side of his head. He always feels sick with these headaches. He usually has 2 of these headaches per week. He has had to take time off work because of this and is worried that he will be fired if he continues to take time off work. He has a past medical history of asthma, and, other than his inhalers, he takes no regular medication. What could you prescribe to prevent these headaches from happening?

- A. Paracetamol
- B. Sumatriptan
- C. Propranolol
- D. Topiramate
- E. Ibuprofen

98. Giovanni, a 70-year old male, is brought to A&E by ambulance due to crushing chest pain. He has tried using his GTN spray, but this has not helped. An ECG has already been performed, which shows ST elevation in the inferior leads. He is tachypnoeic and oxygen saturations are 95% on air. Which of the following treatments do you want to start?

- A. Aspirin and clopidogrel
- B. High-flow oxygen
- C. Paracetamol
- D. Warfarin
- E. No treatment needed

99. A 62-year-old male, Justin, presents with fever and pain in his right upper quadrant of his abdomen. He also feels sick. Justin tells you that he has been experiencing this pain in waves for a few days. What factors in Justin's history may further point to cholecystitis as the likely diagnosis?

- A. Previous cholecystectomy
- B. Intrascapular pain
- C. Low CRP
- D. Jaundice
- E. Negative murphy's sign

100. You are an F1 seeing Lizzie, an 85-year old woman who came to hospital following a fall. She states that she felt light headed before she fell. The rhythm strip of her ECG is shown below, what does it show?



- A. Normal ECG
- B. Sinus tachycardia
- C. STEMI
- D. Atrial flutter
- E. Atrial fibrillation

[END OF PAPER 4]

Important note- this mock SBA is meant to be used as a learning tool, it intentionally covers a broad range of topics and asks challenging questions in order to enable you to set future goals for learning and most importantly to learn from the answers and explanations, adding these to your notes.

This is a revision resource and not a reflection of the true exam.

Answers- see separate document: PTS 3a 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. This is found here and on the answer document.

Google form: <https://forms.gle/MtvPPuUEkxF6KXt6A>

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