

# PTS 3a Mock SBA Series 2020

## Paper 3- [Answers]- Version 1



### Marking instructions:

- Award **1 mark for each question** on the paper
- Multiple 'correct' answers may exist, a mark is awarded for the **single best answer**
- There are **100 marks** in total
- There is **no identified 'pass mark'**

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# Summary of Topics Assessed- Paper 3

<p><b>Paediatrics- 1.5</b></p> <ol style="list-style-type: none"> <li>1. Complications of nephrotic syndrome</li> <li>2. Causes of nephrotic syndrome</li> <li>3. Features of HSP</li> <li>4. Management of GORD</li> <li>5. Management of tonsillitis</li> <li>6. Recognising acute otitis media</li> <li>7. Identifying birth-marks</li> <li>8. Hirschsprung's disease as a cause of constipation</li> <li>9. Faecal impaction treatment</li> <li>10. GORD complications and associations</li> </ol>	<p><b>Paediatrics- 1.6</b></p> <ol style="list-style-type: none"> <li>11. Features of Autism Spectrum Disorder</li> <li>12. ITP treatment</li> <li>13. Management of otitis media</li> <li>14. Causes of bronchiolitis</li> <li>15. Diagnosis Hirschsprung's</li> <li>16. Treatment of Hirschsprung's</li> <li>17. Congenital cardiac – acyanotic vs cyanotic</li> <li>18. Tetralogy of Fallot</li> <li>19. Ventricular septal defect murmurs</li> <li>20. Features of Patau's</li> </ol>	<p><b>Psychiatry- 2.4</b></p> <ol style="list-style-type: none"> <li>21. Treating Wernicke's encephalopathy.</li> <li>22. Differentiating dementia from depression.</li> <li>23. Treatment of Alzheimer's</li> <li>24. Serotonin syndrome.</li> <li>25. Features of generalised anxiety disorder.</li> <li>26. Risk factors for generalised anxiety disorder.</li> <li>27. Identifying delirium.</li> <li>28. Management of paracetamol overdose.</li> <li>29. Alcohol withdrawal.</li> <li>30. Frontotemporal dementia.</li> </ol>
<p><b>Psychiatry- 2.99</b></p> <ol style="list-style-type: none"> <li>31. Management of delirium tremens</li> <li>32. Diagnosis of borderline personality disorder</li> <li>33. Diagnosis of pseudodementia secondary to depression</li> <li>34. Management of mild depression</li> <li>35. Management of opioid overdose</li> <li>36. Diagnosis of histrionic personality disorder</li> <li>37. Management of borderline personality disorder</li> <li>38. Gender dysphoria</li> <li>39. Discontinuation of medication for depression</li> <li>40. Symptoms of cocaine withdrawal</li> </ol>	<p><b>Obs&amp;Gynae- 3.5</b></p> <ol style="list-style-type: none"> <li>41. Features of pre-eclampsia</li> <li>42. Antenatal screening of anaemia</li> <li>43. Investigating potentially sensitising events</li> <li>44. CTG foetal monitoring</li> <li>45. Management of pre-eclampsia</li> <li>46. HRT use in menopause</li> <li>47. Benign breast lumps</li> <li>48. Causes of non immune foetal hydrops</li> <li>49. Causes of anaemia in pregnancy</li> <li>50. Risk factors for pre-eclampsia</li> </ol>	<p><b>Obs&amp;Gynae- 3.66</b></p> <ol style="list-style-type: none"> <li>51. Management of heavy menstrual periods</li> <li>52. Management of induction of labour</li> <li>53. Risk factors for obstetric cholestasis</li> <li>54. Medication - essential hypertension in pregnancy</li> <li>55. Management of a breech presentation</li> <li>56. Management of eclampsia</li> <li>57. Aetiology of heavy menstrual bleeding</li> <li>58. Risk factors for placenta accreta</li> <li>59. Management of obstetric cholestasis</li> <li>60. Abnormal lie risk factors</li> </ol>

# Summary of Topics Assessed- Paper 3

<p><b>Public Health- 6.2</b></p> <ul style="list-style-type: none"> <li>61. Management of hypertension</li> <li>62. Invoking the MHA in hospital</li> <li>63. Anti-D prophylaxis in TOP</li> <li>64. Dynamic and static risk factors in suicide</li> <li>65. Role of the QRISK tool</li> <li>66. Medical errors</li> <li>67. Ethical frameworks (seedhouses's ethical grid)</li> <li>68. Consciousness objections and good medical practice</li> <li>69. Management of malignant hypertension</li> <li>70. Invoking the MHA in public (role of the police)</li> </ul>	<p><b>Neuro- 7.4</b></p> <ul style="list-style-type: none"> <li>71. Huntington's disease recognition</li> <li>72. Bell's palsy lesions</li> <li>73. Temporal arteritis treatment</li> <li>74. Wernicke Korsakoff syndrome vitamin deficiency</li> <li>75. Features of wernicke korsakoff syndrome</li> <li>76. causative agent of guillain barre</li> <li>77. treatment of guillain barre</li> <li>78. Huntington's pathology</li> <li>79. Temporal arteritis associated disease</li> <li>80. Squints common cause</li> </ul>
<p><b>General Medicine- WC3</b></p> <ul style="list-style-type: none"> <li>81. Investigations -chest pain</li> <li>82. COPD Management</li> <li>83. Pharmacology and prescribing of Calcium</li> <li>84. Paracetamol overdose</li> <li>85. Pharmacology and prescribing of Heparin</li> <li>86. Hand signs – rheumatoid arthritis</li> <li>87. Hand signs – clubbing</li> <li>88. Management of a cardiac episode</li> <li>89. Managing a child with acute respiratory distress</li> <li>90. Interpreting results – FBC</li> </ul>	<p><b>General Medicine - TB3</b></p> <ul style="list-style-type: none"> <li>91. Pharmacology of inhalers</li> <li>92. Lung cancer presentation</li> <li>93. Risk scores</li> <li>94. Cardiovascular pharmacology</li> <li>95. GORD risk factors</li> <li>96. Prostate cancer diagnosis</li> <li>97. Coeliac disease diagnosis</li> <li>98. GI cancer presentations</li> <li>99. Pulmonary embolism presentation</li> <li>100. Stroke management</li> </ul>

Question 1- Correct Answer (B)- (hypocholesterolaemia)

*So this child has nephrotic syndrome. Hypercholesterolaemia, not hypocholesterolaemia (B), is a complication of nephrotic syndrome as cholesterol correlates inversely with the serum albumin level. Thrombosis (E) can occur due to urinary losses of antithrombin. Children in relapse are at risk of infection (D) with capsulated bacteria, especially Pneumococcus, due to loss of immunoglobulins. Hypovolaemia (C) can occur during the initial phase of oedema formation as the intravascular compartment may become volume depleted. ½ patients with steroid-sensitive nephrotic syndrome experience frequent relapses, ⅓ experience infrequent relapses and ⅓ experience no relapses at all (A).*

Question 2- Correct Answer (D)- (Minimal change disease)

*Nephrotic syndrome in children is usually caused by minimal change disease (D). A minimal change disease glomerular capillary has fused foot processes. Nephrotic syndrome can be secondary to the other options (A,B, C, E).*

Question 3- Correct Answer (E)- (Skin rash on trunk)

*The rash (E) is the most obvious feature, however the trunk is usually spared! It is symmetrically distributed over the buttocks, the extensor surfaces of the arms & legs and the ankles. The rash is initially urticarial then becomes maculopapular and purpuric. All the other options (A, B, C, D) can be features of HSP. Joint pain (B) occurs in 2/3s of patients, particularly of the knees and ankles. Colicky abdominal pain (A) occurs in many children and if severe, can be treated with corticosteroids. Renal involvement (D) is common but is not usually the first symptom. Fever (C) can also occur.*

Question 4- Correct Answer (C)- (H2 receptor antagonist)

*Priya is experiencing GORD. She has been trialled on a feed thickener (e.g. Carobel) and Gaviscon (which is alginate therapy (A)). As a next step she may be started on ranitidine which is a H2-receptor antagonist (C) which suppresses acid production and can reduce the volume of gastric contents or omeprazole (proton pump inhibitor (E)). Drugs which enhance gastric emptying (e.g. domperidone - D2 antagonist (D)) may be tried too. Surgery is for children with complications or who are resistant to medical treatment. The name of the surgery performed is Nissen fundoplication.*

Question 5- Correct Answer (B)- (Consider a delayed prescription for antibiotics)

*Jay's FeverPAIN score is 2 (he scores points for having purulent tonsils and for attending the GP within 3 days or less of his symptoms starting) so you would consider a delayed prescription for antibiotics (B). He should be advised to use the prescription if there is no improvement in his symptoms in 3 to 5 days or if his symptoms worsen. If someone scores a FeverPAIN of 4 or 5 you would consider an immediate antibiotic prescription or a back-up antibiotic prescription. Phenoxymethylpenicillin (D) is often prescribed for tonsillitis. Amoxicillin (C) is best avoided as it may cause a widespread maculopapular rash if the tonsillitis is due to infectious mononucleosis. In severe cases, children may require hospital admission (A) for IV fluid administration & analgesia if they are unable to swallow liquids and solids, but Jay is still managing to eat and drink. Always remember to safety net!*

Question 6- Correct Answer (B)- (Acute otitis media)

*This is most likely to be acute otitis media (B). In acute suppurative otitis media (C), there would be mucopurulent discharge. In otitis media with effusion (E), you would see a grey tympanic membrane, loss of cone of light reflex, visible fluid level behind the tympanic membrane. Options A & D are complications of otitis media and are serious! Be aware of option A and how to manage it. The presence of a tender boggy swelling behind the pinna with loss of the post-auricular sulcus & auricular proptosis suggests acute mastoiditis (A).*

Question 7- Correct Answer (E)- (Naevus flammeus)

*Naevus flammeus (E) = port-wine stain. It is present from birth and grows with the infant. Conversely, cavernous haemangioma (A) (strawberry naevus) is often not present at birth, but appears in the first month of life. No treatment is indicated unless the lesion interferes with vision or the airway. Milia (C) are white pimples on the nose and cheeks. Erythema toxicum (B) (neonatal urticaria) is a common rash appearing at 2-3 days of age, consisting of white pinpoint papules at the centre of an erythematous base, concentrated on the trunk. Mongolian blue spots (D) = blue/black macular discolouration at the base of the spine and on the buttocks. These can be misdiagnosed as bruises.*

Question 8- Correct Answer (E)- (Suction rectal biopsy)

*Hirschsprung's disease can be diagnosed by a full thickness rectal biopsy (E) and management is surgical. The other options are suitable for other paediatric gastrointestinal disorders. For example, pyloric stenosis can be diagnosed by abdominal ultrasound scan (A).*

Question 9- Correct Answer (C)- (Macrogol laxative)

*In faecal impaction, the overloaded rectum needs to be cleared. A disimpaction regimen involves a macrogol laxative (C) e.g. polyethylene glycol and electrolytes (Movicol Paediatric Plain). If this doesn't work, a stimulant laxative (E) e.g. senna can be added. If the macrogol laxative is not tolerated, an osmotic laxative e.g. lactulose (D) can be used instead. Diet alone (B) is unlikely to be able to resolve faecal impaction. Bulk-forming laxatives (A) are of value in children with small hard stools if fibre cannot be increased in the diet.*

Question 10- Correct Answer (A)- (Bilious vomiting)

*GORD is associated with non-bilious vomiting, not bilious vomiting (A). Recurrent pulmonary aspiration (D) and Sandifer syndrome (E) are complications of GORD. Children with cerebral palsy (B) and Down syndrome (C) are more likely to experience GORD.*

Question 11 - Correct Answer D – Persistent hyperactivity when inappropriate is not a feature of ASD

*D – Persistent hyperactivity when socially inappropriate is a feature of ADHD. These patients will talk excessively, spontaneously leave their seat when they are expected to sit (e.g. during class) and find it difficult to wait their turn.*

*A – Adherence to routine or rituals is a feature of ASD.*

*B – Impaired social interaction and communication is a feature of ASD. Children may often play alone and have a disinterest in other children, leading to social isolation.*

*C – Patients with ASD find it more challenging to interpret non-verbal cues such as eye gazes, gestures and facial expressions.*

*E – Repetitive behaviours and motor mannerisms are a feature of ASD.*

Question 12- Correct Answer D – Safety net and explain it typically runs a benign course and the majority of cases will have resolved spontaneously after 6-8 weeks

*D – The majority of cases of ITP will spontaneously resolve within 6-8 weeks and require no further treatment. Ensure the parents knows to seek further medical advice if spontaneous bleeding occurs.*

*A – NSAIDs and aspirin should be avoided in ITP as these can impair platelet function.*

*B – Contact sports should be avoided until ITP resolves, to reduce the risk of injury and bleeds.*

*C – Prednisolone is the first line treatment for ITP but this should only be commenced if a specialist deems that the platelet count needs to be raised. In the majority of cases in children, no treatment is required.*

*E – A splenectomy should only be considered if there is a case of life-threatening bleeding, or if a child has severe, chronic and unremitting ITP for 12-24 months with severe symptoms.*

Question 13- Correct Answer = B – First line treatment for a patient under 2 years of age with bilateral acute otitis media is a 5-day course of amoxicillin

*B – First line treatment for a patient under 2 years of age with bilateral acute otitis media is a 5-day course of amoxicillin, dependent on the severity of the symptoms. This patient has had a change in behaviour and is eating less, with an associated fever, therefore antibiotics would be indicated.*

*A – Consideration of antibiotics if symptoms have not resolved by day 5 is applicable when there are no indications for immediate antibiotic prescribing (e.g. AOM in only hearing ear, cochlear implant present, AOM in both ears in children <2 and perforated TM).*

*C – Clarithromycin is a second line antibiotic if the patient is allergic to penicillin*

*D – Referral to ENT would be considered if the patient has had more than 6 episodes in 12 months or has persistent otitis media with effusion for >3 months bilaterally or >6 months unilaterally. In this case a referral would not be applicable.*

*E – Watch and wait is suitable for the majority of children as 80% will resolve within 4 days, however this patient is under 2 with bilateral AOM (indication for immediate Abx).*

Question 14- Correct Answer = D – Respiratory Syncytial Virus (RSV) is the most common cause of bronchiolitis.

*D – Respiratory Syncytial Virus (RSV) is the most common cause of bronchiolitis, accounting for 80% of cases.*

*A – Adenovirus is a frequent cause of fevers, URTI and conjunctivitis. It can also cause bronchiolitis, but less commonly than RSV.*

*B – Mycoplasma can cause bronchiolitis, but less commonly than RSV*

*C – Parainfluenza can cause URTI and LRTI, but is less common cause of bronchiolitis*

*E – Rhinovirus is the predominant cause of the common cold*

Question 15- Correct Answer = B – The diagnosis is Hirschsprung’s disease

*B – Hirschsprung’s disease most commonly presents in the neonatal period with a failure to pass meconium within 48 hours. Abdominal distension and vomiting may also be present. A rectal biopsy is the diagnostic test, with tissues usually obtained via a suction biopsy. Histology shows an absence of ganglion cells in the mesenteric plexus.*

*A – Cystic fibrosis is diagnosed on neonatal screening tests. If these screening tests are not performed, the classical presentation is a child with recurrent chest infections and failure to thrive.*

*B – Intussusception usually presents between 3 months and 3 years of age with colicky abdominal pain, sausage shaped mass in the abdomen on palpation and redcurrant jelly stool.*

*D – Meckel’s diverticulum is usually asymptomatic and would not usually be detected in the neonatal period.*

*E – Pyloric stenosis usually presents at 2-7 weeks of age with non-bilious vomiting (can be projectile).*

Question 16- Correct Answer = D – Swenson procedure is the surgical procedure used to treat

Hirschsprung’s *D – Swenson procedure is used to remove the section of affected bowel and anastomose the remaining bowel together. It is the only effective long-term solution for Hirschsprung’s, and many children have a normal bowel function afterwards.*

*A – Laparotomy is the name of the procedure to treat severe cases of necrotising enterocolitis. If this procedure is needed, it is indicative of a poor prognosis.*

*B – Orchidopexy is a procedure for undescended testes that have persisted past 6 months of age.*

*C – Ramstedt pyloromyotomy is a treatment for pyloric stenosis where excessive muscle is removed.*

*E – Wedge excision is used for treatment of Meckel’s diverticulum – if symptomatic patient.*

Question 17- Correct Answer = D – Tetralogy of fallot is not acyanotic, it is cyanotic.

*D- Tetralogy of fallot is cyanotic. It is the most common cause of cyanotic heart disease and has a right to left shunt. This condition is cyanotic due to the right ventricular outflow obstruction causing reduced blood flow to the lungs.*

*A – Atrial septal defect is a acyanotic heart condition that has a left to right shunt. There are 2 types of ASD – Secundum ASD and Partial AVSD.*

*B –Coarctation of the aorta is a acyanotic congenital heart defect where there is narrowing of the aorta in the region of the ductus arteriosus. This can either be narrowing proximal, distal or at the ductus arteriosus.*

*C – Patent ductus arteriosus is an acyanotic congenital heart defect, where there is persistence of the connection between the aorta and pulmonary artery which would normally close physiologically after birth.*

*E – Ventricular septal defect is the commonest congenital heart disease and is acyanotic. There is a malformation of the ventricular septal wall which produces a loud, hard systolic murmur best heard at the lower left sternal border.*

Question 18- Correct Answer = B – Narrowing proximal to the ductus arteriosus is not a feature of tetralogy of fallot

*B – Narrowing proximal to the ductus arteriosus is present in coarctation of the aorta, a acyanotic heart disease.*

*A – Large VSD (ventricular septal defect) is a feature of tetralogy of fallot. The VSD is usually so large that pressures in the right and left side of the heart are equal.*

*C – Overriding of the aorta is a feature of tetralogy of fallot. The aorta receives blood from both the right and left ventricles which reduces the concentration of oxygenated blood that enters the systemic circulation.*

*D – Right ventricular hypertrophy is a result of the other 3 features of tetralogy of fallot.*

*E – Right ventricular outflow obstruction occurs due to pulmonary valve stenosis. The overriding aorta causes additional muscle to interfere with the pulmonary valve.*

Question 19- Correct Answer= E – Pansystolic murmur heard loudest at the lower left sternal edge

*E - Pansystolic murmur heard loudest at the lower left sternal edge is associated with Ventricular septal defects.*

*A - Continuous machinery murmur typically heard at the upper-left sternal border is associated with patent ductus arteriosus.*

*B - Ejection systolic murmur heard loudest at the upper-left sternal border is associated with atrial septal defect.*

*C - Harsh ejection systolic murmur heard loudest over the upper-left sternal angle is associated with tetralogy of fallot.*

*D - Murmur heard on the back between the scapula is associated with coarctation of the aorta.*

Question 20- Correct Answer = E – Polydactyly is associated with Patau’s

*E – Polydactyly is a feature of Patau’s (Trisomy 13). It is a feature in which the patient has extra digits (either fingers or toes).*

*A – Hypotonia is a feature of Prader-Willi syndrome. The patient will have decreased muscle tone.*

*B – Macrocephaly is a feature of Fragile X syndrome. The definition of macrocephaly is the circumference of a person’s head being more than 2 standard deviations above the average for their age.*

*C – Macroglossia is a feature of Edwards syndrome (Trisomy 18). The patient will have an undersized lower jaw.*

*D – Pectus excavatum is a feature of Noonan syndrome. It is a congenital deformity of the chest wall where several ribs and the sternum will grow inwards.*

Question 21- Correct Answer D- Give intravenous thiamine immediately.

*Mr Henry is likely suffering from alcohol withdrawal given the history of alcohol misuse and the description of seizures from eyewitnesses. Patients with alcohol withdrawal are likely to be deficient in vitamin B1 (thiamine). Thiamine is routinely recommended to treat and prevent Wernicke’s encephalopathy. NICE says - “Offer prophylactic parenteral thiamine followed by oral thiamine to harmful or dependent drinkers: if they are malnourished or at risk of malnourishment or if they have decompensated liver disease and in addition they attend an emergency department or are admitted to hospital with an acute illness or injury. “*

*While it may be a good idea to contact family/friends for a collateral history it is not the most appropriate next step in management.*

*Support services would be useful in supporting Mr Henry’s recovery but is not the most appropriate next step in management.*

*CT head may be considered to rule out intracranial pathology as a result of head injury. However, the most likely diagnosis is alcohol withdrawal and intravenous thiamine should be commenced immediately.*

*Intravenous thiamine is the correct answer.*

*Watch and wait would be inappropriate given the history. You should act quickly to prevent the development of Wernicke’s encephalopathy.*

Question 22- Correct Answer C – Depression

*Depression is the most likely diagnosis given the length of the presentation, global memory impairment and the patient’s concern. Depression is also associated with poor sleep and loss of appetite. Depression is a good example of a pseudodementia and is important to rule out before diagnosing someone with dementia.*

*Acute delirium typically presents over a shorter period, has an underlying cause (usually) and may be associated with hallucinations and/or psychomotor agitation which aren’t mentioned here.*

*Dementia typically presents over months to years and initially results in recent memory loss as opposed to global memory loss. Patients with dementia typically lack insight so wouldn’t be worried about their memory.*

Question 23- Correct Answer B – Donepezil

*Donepezil is the correct answer. It is an acetylcholinesterase inhibitor which are the medications used first-line in the treatment of Alzheimer's dementia.*

*Diazepam is a benzodiazepine typically used in the short-term treatment of insomnia.*

*Haloperidol is a first-generation antipsychotic and is not appropriate here.*

*Hydroxychloroquine is an antimalarial drug.*

*Memantine is a NMDA receptor antagonist used in the treatment of Alzheimer's if acetylcholinesterase inhibitors are contraindicated or as an add-on therapy.*

Question 24- Correct Answer D – Serotonin syndrome

*Akathisia (restlessness) is usually a side effect of antipsychotic treatment.*

*Antidepressant discontinuation syndrome is incorrect as the patient has overdosed.*

*Neuroleptic malignant syndrome is a life-threatening reaction to antipsychotic medication.*

*Serotonin syndrome (SS) is correct. It is the most likely answer as the patient has overdosed on*

*fluoxetine, a selective serotonin reuptake inhibitor (SSRI). The patient is presenting with the signs of SS: altered mental status, seizure, tremors.*

*Tardive dyskinesia is defined as repetitive movements, typically of the tongue, lips and jaw. It is a side effect of long-term antipsychotic treatment.*

Question 25- Correct Answer D – Flashbacks.

*GAD is a common disorder, of which the central feature is excessive worry about a number of different events associated with heightened tension. It can cause significant distress and functional impairment.*

*Symptoms are variable and can include restlessness/nervousness, being easily fatigued, poor concentration, irritability, muscle tension, trembling, sweating, lightheadedness, palpitations, dizziness, and epigastric discomfort., or sleep disturbance.*

*Flashbacks are a feature of post-traumatic stress disorder (PTSD). The symptoms of PTSD include -*

- *Re-experiencing a traumatic event, either through 'flashbacks' or in the form of dreams/nightmares — this is the most characteristic PTSD symptom*
- *Hyperarousal (including hypervigilance, anger, and irritability). May also manifest as self-destructive or reckless behaviour, exaggerated startle responses, insomnia, and difficulty concentrating.*
- *Avoidance of situations that trigger memories of the event. The person may avoid talking or thinking about the event by becoming absorbed in work or hobbies.*
- *Dissociation — where a person feels disconnected from themselves and/or the world around them.*
- *Emotional numbing — where the person lacks the ability to experience feelings, feels detached from other people, gives up activities that they have previously enjoyed, communicates less with other people, has amnesia associated with significant parts of the event, or has persistent negative beliefs or expectations about themselves.*

*The rest of the options given (A,B,C,E) are typical features of generalised anxiety disorder.*

Question 26- Correct Answer – D – Past medical history of hyperthyroidism

*Having a PMHx of hyperthyroidism (or atrial fibrillation) may result in symptoms similar to GAD but it is not a risk factor for its development. The other factors (A, B, C, E) are all risk factors for GAD.*

Question 27- Correct Answer A – Acute delirium.

*The patient has no past medical history... it is unlikely that she has developed bipolar disorder (presents in late teen years) or schizophrenia (presents in early adulthood). She is also lacking the symptoms and signs classically seen in those illnesses.*

*Urinary tract infections are a common cause of acute delirium. A good way to remember some causes of delirium are by remembering PINCH ME - Pain, Infection, Nutrition, Constipation, Hydration, Medications and Electrolyte disturbances. This patient is presenting with hyperactive delirium. There are 2 other types of delirium - hypoactive (more common and easier to miss) and mixed.*

*Non-convulsive status epilepticus may present with confusion, odd behaviour, psychotic symptoms and aggression. However, the positive urine dip makes acute delirium more likely.*

*Unlikely to be vascular dementia given the positive urine dip and the acute onset.*

Question 28 - Correct Answer B- Acetylcysteine infusion over 1 hour.

*Acetylcysteine is the treatment of choice for patients after paracetamol overdose if they are within eight hours of ingestion and above the treatment line. It is given in a total dose that is divided into three consecutive intravenous infusions. The first infusion is done over one hour.*

*Activated charcoal is most effective if given within an hour of ingestion.*

*Adrenaline is not given in the treatment of paracetamol overdose.*

Question 29- Correct Answer E – Delirium tremens occurs 48-72 hours following alcohol withdrawal

*Tremor, sweating, tachycardia, nausea, headache and anxiety occur 6-12 hours following alcohol withdrawal.*

*Peak incidence of seizures occurs 36 hours following alcohol withdrawal.*

*Peak incidence of delirium tremens occurs 48-72 hours following alcohol withdrawal. It is important to remember delirium tremens is a medical emergency. A hyperadrenergic state is present.*

Question 30- Correct Answer C – Frontotemporal dementia.

*Frontotemporal dementia (also known as Pick's disease) is the correct answer. Typical presentation is of personality change and social conduct problems. Other features include increased appetite, language problems. Memory problems only tend to occur later on unlike in Alzheimer's.*

*Bipolar disorder, schizophrenia and borderline personality disorder would present earlier in life. Bipolar would present with depression and mania/hypomania. Schizophrenia would present with hallucinations, delusions and thought disorders. Borderline personality disorder would have been present since earlier in life and would present with unstable self-image and unstable affect.*

*Lewy-body dementia would present with more serious memory problems and there may be Parkinsonian symptoms.*

Question 31- Correct Answer (B) – (Chlordiazepoxide)

*This patient is suffering with delirium tremens due to alcohol withdrawal after dependency. Visual hallucinations are commonly seen in this condition. First-line treatment, according to NICE guidelines, is Chlordiazepoxide. Haloperidol would be a useful adjuvant if symptoms persist, or are associated with aggression, but is not the first line treatment here.*

*Acetylcysteine and Naloxone are wrong because they are the treatment of choice for paracetamol and opioid overdoses, respectively, which are not suggested in this case.*

*Citalopram is an SSRI used in conditions such as depression or generalised anxiety disorder. While this patient presents with anxiety as a symptom, the case presents a clearer diagnosis of delirium tremens rather than generalised anxiety disorder.*

*TIP: sometimes lorazepam is used, this is another benzodiazepine.*

Question 32- Correct Answer (B)- (Borderline personality disorder)

*There are many clues that this is borderline personality disorder such as difficulty controlled anger, insecure relationships, hard to keep jobs, self-harming behaviour, sleep continuity disturbance.*

*While this patient may be considered paranoid or suspicious of her relationships, the other clues point towards borderline personality disorder. Paranoid personality disorder may present with more anger, jealousy, or by the patient holding grudges or creating conflicts.*

*Schizotypal personality disorder stereotypically presents with odd, magical thinking, eccentric or bizarre behaviour. However, difficult relationships and paranoid fears may also be part of the presentation.*

*While this patient has a past diagnosis of depression, there is nothing to suggest any hypomania or mania symptoms. Bipolar affective disorder would be more typical with a past or current history of mania (>1 week history of uncontrollable elation, over active, pressure of speech, extreme risk taking, social disinhibition, grandiosity). Similarly, schizoaffective disorder (features of both schizophrenia and affective disorder) is unlikely as there are no signs of schizophrenia symptoms such as thought alienation, auditory hallucinations, delusions etc.)*

Question 33- Correct Answer (B)- (Depression)

*This is most likely pseudodementia secondary to depression. The clues in the case are the short history, biological symptoms (appetite changes), patient insight (he is worried about his memory), life stressors and his response of "I don't know". Most patients with dementia will guess an answer.*

*Alzheimer's disease would have a longer, more gradual history and symptoms wouldn't fluctuate.*

*Fronto-temporal dementia would typically present with changes to personality, family history, disinhibited behaviour.*

*Lewy body dementia would typically present with memory problems, visual hallucinations, REM sleep disorder, and perhaps parkinsonism.*

*While there are vascular risk factors, vascular dementia is not the best answer as the clues point to depression as stated above. Also, in vascular dementia decline in executive function is more significant than memory problems during early stages.*

Question 34- Correct Answer (B)- (Low-intensity psychosocial intervention)

*For mild depression, first line therapy is low-intensity psychosocial intervention. If there is not an adequate response to initial intervention or her symptoms worsen to moderate or severe depression, antidepressants should be added. First line antidepressant is a selective serotonin reuptake inhibitor such as Sertraline. Hence, Sertraline is not the correct first line treatment here as the patient has mild depression and hasn't started low-intensity psychosocial intervention.*

*Amitriptyline is a tricyclic antidepressant and is no longer recommended as first pharmacology treatment for depression because it is more dangerous in overdose. Venlafaxine is a serotonin-noradrenaline reuptake inhibitor which can be an option if different antidepressants aren't working for the patient. While the patient has trouble staying asleep in the morning, this should improve with treatment for depression. Hence Zopiclone, used for short-term management of insomnia, is not the first line management here.*

Question 35- Correct Answer (E)- (Naloxone)

*Opioid toxicity should be suspected when there is CNS depression, respiratory depression and pupillary constriction present. Naloxone is the correct answer as this is the antidote for opioid overdose. Activated charcoal is used to reduce the absorption of poisons in the GI system and to actively eliminate poisons. It is not used in opioid overdose but may be used in other drug overdose or poisoning. See TOXBASE for further information.*

*Aspirin and morphine would be used in a case with a myocardial infarction. This case points more towards opioid overdose though. Giving morphine would deteriorate this patient further and shouldn't be administered here.*

*Methadone is used in treatment of opioid dependence. It is not appropriate as the emergency treatment in this case.*

Question 36- Correct Answer (D)- (Histrionic personality disorder)

*The clues in the case which indicate histrionic personality disorder include the patient over-dramatising her weight gain, trying to change her body weight for a boyfriend of 2 weeks (relationship considered to be more intimate than it is), trying to touch the GP (inappropriate sexual seductiveness), needing to be the centre of attention (trying to surprise her boyfriend for his mum's birthday).*

*Narcissistic personality disorder would present with more envy, sense of entitlement, arrogance, and haughty attitude. Borderline personality disorder would present with more unstable interpersonal relationships, recurrent suicidal behaviour, chronic feelings of emptiness or low self-esteem.*

*While the decision to try laxatives is reckless, there are not enough clues in the case to indicate bipolar affective disorder. This would present with signs of past mania or hypomania such as less need for sleep, elevated mood, pressured speech, loss of inhibitions.*

*While the patient is discussing her weight with her GP, anorexia nervosa would present with more evidence for restrictive energy intake, intense fear of weight gain, disturbance of the way in which the patient's body is experienced.*

Question 37- Correct Answer (C)- (Dialectical behavioural therapy)

*Dialectical behavioural therapy is the first line management of borderline personality disorder. It teaches skills to control intense emotions and reduce self-destructive behaviour and improve relationships.*

*Sertraline may be used if there is evidence that the patient has depressive symptoms but with no information surrounding depression in the question, is the wrong answer here.*

*Cognitive behavioural therapy is used in patients with depression, amongst other conditions.*

*Amitriptyline is an antidepressant but is often avoided as a first line pharmacological treatment because it is particularly dangerous in overdose. Family therapy may be useful for patients with eating disorders, amongst other things.*

Question 38- Correct Answer (E)- (sexual orientation is homosexual)

*All the other options are signs of gender dysphoria. However, not all people with gender dysphoria will experience each of those symptoms and their experience will be unique to them. Sexual orientation is distinct from gender identity. People who experience gender dysphoria may be heterosexual or homosexual or any other sexual identity. Sexual orientation refers to a person's physical, emotional, or romantic attraction to other people. Gender identity refers to a person's internal sense of gender.*

Question 39- Correct Answer (C)- (It should be continued for at least 6 months)

*If a patient has a good response to antidepressant therapy they should continue on treatment for at least 6 months after remission to reduce the risk of relapse. Hence, continuing for 3 months is not correct.*

*Antidepressants for many people are not lifelong medications.*

*Selective serotonin reuptake inhibitors should be gradually reduced over a 4 week period so option D is not correct. Option A is also not correct, despite stopping gradually, because the patient needs to be on treatment for a further 6 months.*

Question 40- Correct Answer (B)- (Decreased hunger)

*Patients will have increased hunger and cravings within 24 hours after a period of high-intensity cocaine use. The other symptoms are all examples of withdrawal symptoms from cocaine use. The first 24 hours are known as the first phase. The second phase can last for up to 10 weeks. The final phase will show a decrease in most withdrawal symptoms but low mood can persist which can last for 6 months.*

Question 41- Correct Answer (D)- (Hyporeflexia)

*Hyperreflexia can be seen in severe cases of Pre-eclampsia, not hyporeflexia. Pre-eclampsia leads to increased intracranial pressure, which causes a loss of inhibitory fibres and therefore increased tendon reflexes. If intracranial pressure rises further it can cause decreased consciousness or neuroexcitability – the cause of seizures in eclampsia.*

*Epigastric pain – oedema in the liver capsule can cause right upper quadrant pain*

*Mild hand and leg swelling are a common sign in pregnancy, however facial oedema is not, but it can be a symptom of pre-eclampsia.*

*Hypertension (systolic BP  $\geq$  140mmHg or diastolic BP  $\geq$  90mmHg) and proteinuria are the defining features of pre-eclampsia.*

*Papilloedema and visual disturbance are caused by the pressure of oedema on the optic nerve.*

Question 42- Correct Answer (B)- (Booking visit and 28 week appointment)

Women are offered a blood test to screen for anaemia in their booking visit (8-12 weeks – ideally under 10 weeks) and at 28 weeks gestation. Other blood screening tests offered to women at these visits include - FBC, blood group, rhesus status, red cell alloantibodies, haemoglobinopathies, hepatitis B, syphilis, and HIV.

Question 43- Correct Answer (D)- (Kleihauer Test)

Kleihauer test is correct. It is used to detect the amount of fetal haemoglobin in the mothers bloodstream. It is usually needed in Rh negative mothers to determine the correct amount of Anti-D has been given following a potentially sensitising event.

A direct coombs test is a blood test used to diagnose haemolytic anaemia in a newborn.

Guthrie test (Heel Prick test) is a newborn screening test to identify 9 rare but potentially life threatening genetic conditions (including sickle cell anaemia and cystic fibrosis).

Nuchal translucency measurement is routinely performed at the dating scan of a pregnancy. It measures the amount of fluid at the back of the fetus' neck. It is part of the combined test to screen for Trisomy 21, but can also indicate other conditions such as Turner's syndrome and omphalocele

Question 44- Correct Answer (D)- (Decelerations of 15bpm beginning during and lasting 60s after a contraction has terminated)

A deceleration is a drop in fetal heart rate of 15bpm or more for over 15 seconds. If this occurs at the peak of a contraction and returns to normal after a contraction has finished is known as a late deceleration and this is a concerning sign as it could indicate fetal distress and hypoxia. It indicates insufficient blood flow to the uterus and placenta meaning reduced blood flow to the fetus and can result in hypoxia and acidosis.

The following mnemonic is helpful in interpreting CTGs; DR C BRA VADO:

- DR- define risk:
- C- contractions.
- BRA- baseline rate. The fetal baseline rate should be approximately 110-160 beats per minute. A fetal bradycardia is below 110 beats per minute and a fetal tachycardia is above 160 beats per minute.
- V- baseline variability. The fetal heart rate should vary between 5 to 25 beats per minute.
- A- accelerations. Accelerations are a rise in fetal heart rate of at least 15 beats lasting for 15 seconds or more. There should be 2 separate accelerations every 15 minutes. Accelerations typically occur with contractions.
- D- decelerations. Are there decelerations in fetal heart rate? These are a reduction in fetal heart rate by 15 beats or more for at least 15 seconds. Decelerations are generally abnormal
- O- overall impression/diagnosis.

Geeky medics has a really good summary of how to interpret CTGs!!

Question 45- Correct Answer (C)- (Nifedipine)

*Antihypertensives are needed for women with pre-eclampsia to try to prevent complications with their pregnancy. Labetalol is usually the first line management in women with pre-eclampsia, however it is contraindicated in women with asthma, heart failure and heart block. In women with asthma Nifedipine is usually first line.*

*Magnesium sulphate is used as seizure prophylaxis in severe Pre-eclampsia, and IV magnesium sulphate is used to terminate an eclamptic seizure.*

*Labetalol is used for pre- eclampsia not propranolol.*

*Ramipril and other ACE-Inhibitors are contraindicated in pregnancy.*

Question 46- Correct Answer (B)- (Contraception is still required when taking HRT)

*Many women take HRT to reduce the symptoms they are getting from menopause. However women start getting symptoms when they are peri-menopausal. Therefore it is recommended that you use contraception for 2 years after your last period if you are under 50, and 1 year after if you are over 50.*

*This is because you can still get pregnant whilst on HRT*

*HRT containing unopposed oestrogen can only be used in women who have had a hysterectomy. This is because unopposed oestrogen can increase your risk of endometrial cancer.*

*Menopause is a risk factor for osteoporosis as your levels of oestrogen decrease (oestrogen increases bone mineral density by decreasing osteoclast absorption) therefore HRT can reduce your risk of developing osteoporosis, and increase bone mineral density if you are already diagnosed with osteoporosis – also improving collagen.*

*HRT (both oestrogen and progesterone) can increase your risk of developing a VTE by up to 3x more.*

*Taking HRT has been shown to decrease your risk of developing colorectal cancer by one third.*

Question 47- Correct Answer (C)- (Fibroadenoma)

*Fibroadenoma is the most likely diagnosis here. A fibroadenoma is a benign mass from fibrous tissue. It is usually a painless, small, rubbery mass, that is mobile –it is usually termed a breast mouse as it moves easily under the skin. It is most common from ages 15-35, and usually disappears during menopause. Menstruation can increase the size of a fibroadenoma, and cause it to be tender on palpation. Although fibroadenomas are usually harmless, women who present with breast lumps are always sent for USS if aged under 35 (plus aspiration if it's a cyst, or guided biopsy if it is a solid mass), or if over 35 years old a mammogram. Management of fibroadenomas is either conservative with monitoring or surgical removal for larger masses.*

*A ductal papilloma is a benign tumour in the breast duct, it is usually felt around the nipple and can cause bloody/ clear discharge.*

*Fat necrosis of the breast occurs following trauma. Usually from a seat belt or direct injury to the breast. It is a firm round solitary breast mass, with haematoma formation, and pain is non cyclical. It can occur for a few weeks after trauma so always remember to ask about any trauma to the breast – including contact sports! Management is conservative with pain relief. There is an increased risk of infection and abscess, so always safety net.*

*Invasive ductal carcinoma in situ is the most common type of breast cancer. It begins in the milk ducts and spreads through the breast and can metastasise. IDC lumps tend to be more fixed into position and doesn't move, they also tend to feel hard and not as smooth and can cause the other breast changes known in breast cancer - e.g skin changes, nipple inversion, nipple discharge and breast pain.*

*A nipple abscess is a painful fluctuating mass over the nipple. It most often occurs in women who are breast feeding – after an infection called mastitis, but other causes can include an infected nipple piercing. The breast is often red, warm and painful to touch. Often you have systemic symptoms and are pyrexial. Antibiotics are usually recommended and you may have to admit to hospital if they are experiencing systemic symptoms.*

Question 48- Correct Answer (A)- (Beta Thalassaemia )

*Alpha Thalassaemia major is a cause of fetal hydrops, not beta thalassaemia*

*Fetal hydrops is the abnormal accumulation of serous fluid in 2+ fetal compartments (pleural/ pericardial effusions, ascites, skin oedema, polyhydramnios or placental oedema). Causes are either immune (blood group incompatibility between mother and fetus causing fetal anaemia) or non immune – (fetal anaemia due to another cause)*

*Causes of Non immune include*

- *Severe anaemia – congenital parvovirus B19 infection, alpha thalassaemia major, massive materno-feto haemorrhage*
- *Cardiac abnormalities*
- *Chromosomal – Trisomy 13, 18, 21, or Turners*
- *Infection – toxoplasmosis, rubella, CMV, varicella*
- *Twin- Twin transfusion syndrome (in the recipient twin)*
- *Chorioangioma*

Question 49- Correct Answer (D)- (Iron deficiency )

*95% of anaemia of pregnancy is iron deficient. This can be due to inadequate dietary intake, a previous pregnancy or recurrent loss of iron during menstruation*

*A new B12 deficiency diagnosis is rare in pregnancy*

*Folate deficiency – can increase the risk of neural tube defects. All pregnant women or women trying to conceive are offered folic acid daily to prevent this.*

*Normally during pregnancy, erythroid hyperplasia of the marrow occurs, and red blood cell (RBC) mass increases. However, a disproportionate increase in plasma volume results in hemodilution. Despite hemodilution, oxygen-carrying capacity remains normal throughout pregnancy.*

Question 50- Correct Answer (E)- (Previous vaginal delivery only 12 months ago)

*A long birth interval (>10 years between births) is classed as a risk factor for developing pre-eclampsia. All of the other options are risk factors.*

Question 51 - Correct Answer C - Levonorgestrel-releasing intrauterine system

*In this case the correct answer is C, as the levonorgestrel-releasing intrauterine system is the first line management for heavy menstrual bleeding (HMB) as stated by NICE guidelines.*

*A - The COCP may be a viable option for a patient with heavy menstrual bleeding, but this is a second line treatment and also contraindicated due to Mary's migraines.*

*B - Endometrial ablation is a treatment used for HMB, but is definitely not first-line and would not be advisable in this case as Mary stated her family is not yet complete.*

*D - Progesterone-only pill could be used for HMB but it is not the first-line treatment for HMB*

*E - Tranexamic acid may be considered as a good option for HMB, especially in a younger, nulliparous patient, but this is not the first-line management option.*

Question 52 - Correct Answer E - Vaginal PGE<sub>2</sub>

*The correct answer is E, vaginal PGE<sub>2</sub> is the preferred method of induction, unless there is a clinical contraindication such as increased risk of uterine hyperstimulation (a risk of this is not stated in this case).*

*A - Although oxytocin can be used for induction of labour, it should not be used alone as a primary method for induction unless there is a specific contraindication to vaginal prostaglandins.*

*B & C - Misoprostol and Mifepristone are only to be used for induction of labour if the indication is intrauterine foetal death.*

*D - Oral prostaglandins are not used for induction of labour*

Question 53 - Correct Answer A - Gilbert's Syndrome

*The correct answer is A. Gilbert's syndrome is not associated with increased risk of obstetric cholestasis. It is a condition that causes an increased bilirubin on LFTs.*

*B, C, D & E - These answers have all been found to significantly increase the risk of a pregnant woman to develop obstetric cholestasis.*

*Remember, in obstetrics, having a condition in a previous pregnancy is pretty much always a risk factor.*

Question 54 - Correct Answer D - Switch Ramipril to Nifedipine

*D is the correct answer in this case as ACEi have an increased risk of congenital abnormalities if taken during pregnancy, therefore should be switched. Nifedipine is the drug of choice as Labetalol is contraindicated due to Elaine's asthma.*

*A - This would not be advised due to the increased risk of congenital abnormalities with ACEi*

*B - Reducing the dose does not decrease the risk of congenital abnormalities*

*C - Although Labetalol is the first line for hypertension in pregnancy, it is contraindicated in this case due to Elaine's asthma*

*E - This would not be a viable option as ARBs (as well as ACEis) have also been found to increase the risk of congenital abnormalities in the foetus.*

Question 55 - Correct Answer C - Offer cephalic version from 37 weeks

*C is the correct answer as the RCOG recommends all women with an uncomplicated breech pregnancy at term should be offered an external cephalic version (ECV). In this case ECV should be offered from 37 weeks due to Brenda's multiparity.*

*A & D - An emergency c-section or induction are not indicated in this case as she is not yet at term and an ECV could be offered to cause cephalic presentation.*

*B - ECV can be offered from 36 weeks when the woman is nulliparous, however, Brenda has had 2 previous pregnancies.*

*E - This could be a viable option as there is potential that the foetus could turn itself but as this lady is presenting with a breech presentation and an uncomplicated pregnancy, it would be best practice to offer an ECV from 37 weeks.*

Question 56 - Correct Answer C - Magnesium Sulphate

*In this case, Helen has developed eclampsia. The first-line management for control of seizures is magnesium sulphate as stated by NICE guidelines.*

*A, B, D & E - Although the other options can be viable options in the termination and management of seizures, they are not indicated as the first-line in the case of eclampsia. Diazepam can be given if magnesium sulphate fails to control the seizures, but it is not the first-line option.*

Question 57 - Correct Answer E - Uterine leiomyoma

*E is the correct answer as uterine leiomyomas (fibroids) are a cause for heavy menstrual bleeding, and if large enough will enlarge the uterus, making it palpable on abdominal examination.*

*A - Adenomyosis may also cause an enlarged uterus, palpable on examination but the fact the uterus is non-tender makes adenomyosis less likely.*

*B - Dysfunctional uterine bleeding is a diagnosis by exclusion, and there is an obvious cause for the HMB as a mass is found on examination.*

*C - Endometrial carcinoma is less likely than fibroids to be the cause due to Freya's age, as 90% of cases are seen in women over the age of 50 and classically presents as post-menopausal bleeding.*

*D - The history does not indicate any cyclical pelvic pain, which makes the diagnosis of endometriosis less likely.*

Question 58 - Correct Answer D - Previous multiple pregnancy

*Previous multiple pregnancy is not a known risk factor for the development of placenta accreta.*

*A, B, C & E - The other options have all been linked to an increased risk of placenta accreta. Remember the different severities of placental adhesion:*

*Placenta accreta: chorionic villi penetrate the decidua basalis to attach to the myometrium.*

*Placenta increta: the villi penetrate deeply into the myometrium.*

*Placenta percreta: the villi breach the myometrium into the peritoneum.*

Question 59 - Correct Answer E - Ursodeoxycholic acid

*E is the correct answer. Ursodeoxycholic acid is the mainstay of management for obstetric cholestasis as it has been proven to help improve both the pruritus and bile acid concentration. There are also noted positive effects for both the mother and foetus with its use.*

*A & C - Both loratadine and cetirizine are antihistamines which can be indicated with itching, but are not indicated in this case.*

*B - Dexamethasone is not correct in this case as there is a concern of foetal and neonatal neurological effects with its use.*

*D - Prednisolone is a systemic corticosteroid, which is not indicated in this case.*

Question 60 - Correct Answer D - Previous caesarean section

*D is the correct answer, although a previous C-section is a risk factor for placenta praevia, it is not in itself a proven risk factor for abnormal foetal lie.*

*A & E - Both multiple pregnancy and uterine leiomyomas are risk factors for abnormal foetal lie as they can prevent the turning of the foetus.*

*B - Placenta praevia is a risk factor for abnormal lie as it prevents engagement of the head.*

*C - Prematurity is also a risk factor for abnormal foetal lie as babies may not settle into the cephalic until 36 weeks.*

Question 61 - Correct Answer (D) – Advise on lifestyle changes and start her on amlodipine

*The correct answer is D. An average ABPM measurement of > 135/85mmHg is sufficient to indicate stage 1 hypertension which should be treated pharmacologically on all people under 60. As a lady from Jamaica Ramipril would be inappropriate for Mrs Smith who would instead benefit more from Aa CCB. E is a possible option if Mrs Smith had undergone home blood pressure monitoring which should ideally be seven days, but 24 hours is sufficient for ABPM*

Question 62 - Correct Answer (A) – 6 hours

*Section 5(4) is a nurse's holding power that can be used to keep a patient in hospital until they can be assessed further by a doctor. Both section 5(4) and section 5(2) (a doctor's holding power) can only be used on patients who have been admitted to hospital which excludes A+E as this is considered in the eyes of the law to still be in the community.*

Question 63 - Correct Answer (C) – Rhesus negative and after 10 weeks

*The risk of Rhesus disease is only prevalent if a mother is Rhesus negative and the father is Rhesus positive as this means there is a chance the baby could be Rhesus positive. According to NICE guidance anti-D prophylaxis should be offered to women who are rhesus D negative and are having an abortion after 10+0 weeks' gestation.*

Question 64 - Correct Answer (D) – use of illicit substances

*Static risk factors are those that are features of the patient's history and are not something we can deliberately intervene in and change. Dynamic risk factors are potentially changeable and may fluctuate over time. Substance misuse is a classic example of a dynamic risk factor for suicide (others may include financial problems and relationship problems)*

Question 65 - Correct Answer (C) - Risk of developing a heart attack or stroke in next 10 years

*QRISK calculates a person's risk of developing a heart attack or stroke over the next 10 years. If a person's risk is greater than 10% they would typically benefit from a prescribed statin.*

Question 66 - Correct Answer (D) – Error of inheriting thinking

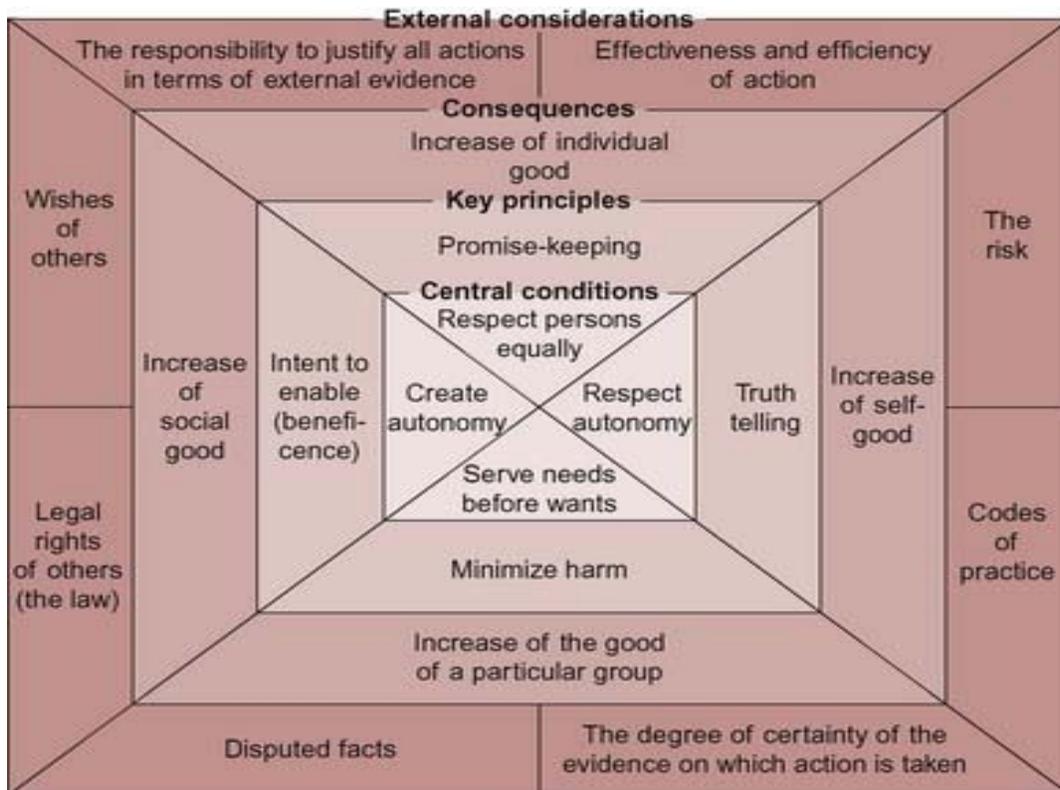
*Error of inheriting thinking is when a working diagnosis is handed over and accepted without pause for consideration and determining whether it has been substantially proven or whether it matches the overall clinical picture. Error due to failure to consider alternatives is typically when one abnormality is found that fits a particular diagnosis and so you stop searching for other potential clues that may change your differential. Error of overattachment is conducting tests to confirm what we expect or want to see and not ruling out other causes. Error of bravado is typically working above competence in a show of over confidence that is not safe. Error of ignorance is defined as unconscious incompetence*

Question 67 - Correct Answer (E)- Virtue layer

Seedhouse's ethical grid and the four quadrants approach are two ethical frameworks that can be used to assess an ethical dilemma

## The Four Quadrants approach

<p><b>Medical Indications</b> (Beneficence and Nonmaleficence)</p> <p>Clinical encounters -include a review of diagnosis and treatment options</p>	<p><b>Patient Preferences</b> (respect for autonomy)</p> <p>Clinical encounters occur because a patient presents before the physician with a complaint. The patient's values are integral to the encounter.</p>
<p><b>Quality of Life</b> (Beneficence &amp; Nonmaleficence)</p> <p>The objective of all clinical encounters is to improve, or at least address, quality of life for the patient</p>	<p><b>Contextual Features</b> (loyalty and fairness)</p> <p>Clinical encounters occur in a wider context beyond physician and patient, to include family, the law, hospital policy, insurance companies, etc.</p>



Question 68 - Correct Answer (D) - Explain your conscientious objection and say you are happy to find another doctor on the team who is happy to sign the form

*For medical staff involved in abortion if you have a conscientious objection to aspects of the case you are within your rights opt out of providing abortion care on an individual level, but you have an obligation to ensure that the woman is still able to access that care. You should not attempt to change the views or the course of action of the patient, or of other staff members. You do not have to be involved in the provision of the termination, unless there is no alternative member of staff available.*

Question 69 - Correct Answer (A) - Refer him immediately for specialist same day assessment

*According to NICE guidance if a person has a clinic blood pressure measurement of >180/120mmHg AND signs of retinal haemorrhage and/or Papilloedema or life-threatening symptoms or suspected pheochromocytoma then you should refer them for same day specialist assessment (this would be classed as malignant hypertension) C and D are not correct as they will not address the immediate problem at hand that may become life threatening in the next two weeks. E is not correct as a reading of > 180/120mmHg with any of the above criteria does not require further monitoring before referral. Whilst B is a plausible answer aside from his swollen optics discs Mr Bacon is otherwise well and thus a same day referral is sufficient.*

Question 70 - Correct Answer (B) – S136

*Section 136 allows a police officer to section a person suspected of having a mental disorder in a public place. They can be held for 72 hours and should be seen by a doctor or AMHP. Section 135 can be used to section a person within their home and remove them to a place of safety. The other sections are less clinically relevant.*

Question 71- Correct Answer (B)- Huntington's Disease

*Correct answer - B Huntington's Disease*

*The patient has had increased excessive movement suggestive of chorea with no clear dementia stated. Suggestion of his father having a similar but less severe disease sequence would match with a genetic condition such as Huntington's disease which typically increases in severity through generations (anticipation).*

*Incorrect answers reasons*

*A - Frontotemporal dementia- typically see disinhibition which could have matched with this description however this is joined by reduced cognition.*

*C - Parkinson's disease - which typically shows reduced movement unlike this case.*

*D -Progressive supranuclear palsy- parkinson + condition showing typically reduced movement and vertical gaze palsy.*

*E - Wilson's disease- Genetic condition with excess copper build up can cause chorea and neurological phenomenon. Typically present in 20-30s associated with liver deposition and jaundice.*

Question 72- Correct Answer (A)- (Left 7th Cranial nerve LMN lesion)

A - Left 7th Cranial nerve LMN lesion

As shown in the diagram a ipsilateral 7th cranial nerve LMN lesion will not spare the forehead and eyelid. This course of disease is typical of Bell's palsy.

B - Left 7th Cranial nerve UMN lesion

The forehead and eyelid of dual supply from both hemispheres. Therefore are spared in an UMN lesion. This would cause a Right sided lower facial palsy.

C - Right 7th cranial nerve LMN lesion

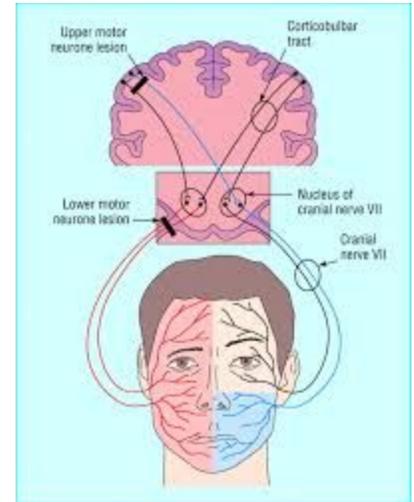
This would cause a right sided Bell's palsy not a left sided picture like in the questions above.

D - Right 7th cranial nerve UMN lesion

This lesion would cause a left side lower facial nerve palsy. Sparing the eyelid and forehead due to dual innervation.

E- Superior cervical ganglion lesion

Typical lesion in Horner's syndrome causing pupillary constriction, ptosis and anhidrosis.



Question 73- Correct Answer (D)- (Prednisolone)

Correct answer D- Prednisolone

Concerns this may be Temporal arteritis with amaurosis fugax of the eye causing visual loss. Risk of total visual loss therefore give high dose steroids urgently. Temporal artery biopsy is diagnostic. Also at risk of aortic aneurysm in the condition would want to do a CTA.

A- Carbamazepine - treatment for differential diagnosis of Trigeminal neuralgia. causing electric shock pain on touch of the face. Involvement of the eye in this question makes this less likely.

B - Methotrexate- steroid sparing treatment in temporal arteritis also used for rheumatic conditions which can be associated to Temporal arteritis.

C- NSAIDs- typical first line analgesia for headaches such as migraine.

E- Sumatriptan- second line treatment for severe headaches such as migraine or tension headache after NSAIDs attempted.

Question 74- Correct Answer (B)- (Vitamin B1 )

Vitamin B1 = Thiamine typically deficit in alcohol abuse, malabsorption or starvation states.

Incorrect answers

Folate is typically deficient and a concern in pregnant mother's increasing risk of neural tube defects. Or can also cause a megaloblastic anaemia.

Vitamin B7 - another of the B vitamins. No key disease association to remember.

Vitamin D- associated with bone calcification- can be reduced in elderly and cause risk of fragility fractures and osteoporosis

Vitamin K- Key for production of coagulation factors 1, 2, 7 and 9

Question 75- Correct Answer (E)- (Tactile hallucinations )

*Tactile hallucinations are typically associated with delirium tremens - acute alcohol withdrawal state.*

*All other answers have association to Wernicke Korsakoff syndrome*

*Wernicke's encephalopathy triad:Encephalopathy, Ophthalmoplegia, Ataxia*

*Symptoms of Korsakoff syndrome = Retrograde amnesia, anterograde amnesia, confabulation*

Question 76- Correct Answer (A)- Campylobacter jejuni

*Campylobacter infection is associated with over active immune response causing autoantibodies which produce the Guillain Barre syndrome presentation seen with Jessica.*

*All other answers are typical bacterial causes of infection.*

Question 77- Correct Answer (C)- (IV Immunoglobulins )

*IV Immunoglobulins are first line treatment to try and block autoantibody action and stop the progression of weakness and sensory loss which can cause severe respiratory depression and death*

*A- Aspirin typically utilised in treatment of Kawasaki disease urgently to reduce inflammation alongside IVIG. Not however used in Guillain Barre syndrome*

*B- Corticosteroids- used for a variety of other conditions typically to reduce inflammation and compression such as a myelopathy.*

*D- Plasma exchange second line treatment where symptoms are progressing rapidly in GBS*

*E- FVC observation is vital to ensure that respiratory function is maintained and escalation to ITU is not required for ventilation. However IV IG treatment must also be given.*

Question 78- Correct Answer (B)- (CAG)

*CAG repeats are increased for <35 to>120 in Huntington's disease.*

*CGG- is associated with Fragile X syndrome*

*GAA- is associated with Freiderich's ataxia*

*All other have no known association (that I'm aware of)*

Question 79- Correct Answer (B)- (Polymyalgia rheumatica)

*Around 50% of people with Temporal arteritis also have Polymyalgia rheumatica.*

*Incorrect answers.*

*Down's syndrome commonly has association to diseases and abnormalities such as diabetes or congenital heart defects.*

*Psoriasis is an inflammatory condition which is therefore associated with vasculitis such as temporal arteritis however the association is nowhere near as strong.*

*Migraines have no strong association to temporal arteritis however would be a differential for its symptoms.*

*SLE - is another inflammatory system condition but typically associated with more wide spread vasculitis.*

Question 80- Correct Answer (C)- Hypermetropia

*A convergent squint is the commonest form of childhood squint. Hypermetropia or long sightedness causes the image to focus behind the retina when the eye is at rest. excessive accommodation can bring the image into focus but also causes a convergent squint in children. convex lenses can counteract the refractory error and remove the squint in most cases.*

*All other answers are diseases of the eye but do not typically present with a squint.*

Question 81- Correct Answer – (D) ECG, Cardiac enzymes, Chest X Ray

*Urinalysis is not useful here and could waste valuable time. Blood cultures are unnecessary in this case. An ECG and Chest X-ray are paramount in diagnosing a potential MI in addition to cardiac enzymes; troponin, myoglobin and creatinine kinase.*

Question 82- Correct Answer (A)- Salbutamol + Ipratropium Bromide

*Immediate management of COPD are short acting Beta 2 agonists (salbutamol) and short acting antimuscarinics (Ipratropium bromide). Beclomethasone is a steroid and is used second line after SABA and SAMAs. Tiotropium is a long acting anti muscarinic and is used after SABAs and SAMAs. Theophylline is used in more severe cases of COPD and after initial management options have been tried. Azithromycin is an antibiotic and can be used in exacerbations of COPD but not traditionally used in initial management. Aminophylline is also used in severe cases when first line treatment fails.*

Question 83- Correct Answer (C)- Patient has primary hyperparathyroidism

*Calcium should not be given in patients with hypercalcaemia, therefore the answer is hyperparathyroidism (in which case calcium levels would be raised). In all other cases, Adcal can be prescribed if needed.*

Question 84- Correct Answer (B)- N-Acetylcysteine

*Activated charcoal is only used if the overdose was 30 mins-1 hour ago. N Acetylcysteine is used in paracetamol overdose to synthesise with and saturate the toxic metabolite acetaminophen and is the answer in this case. Sodium nitrate is used for cyanide poisoning. Idarucizumab is a monoclonal antibody used in life threatening uncontrolled bleeding. Dicobalt edetate is also used to treat cyanide poisoning*

Question 85- Correct Answer (D)- Patient with acute bacterial endocarditis

*Heparin is indicated in all of the above but CONTRAINDICATED in bacterial endocarditis (BNF).*

Question 86- Correct Answer (B)- Rheumatoid Arthritis

*Swan neck deformity is a deformity of the fingers in keeping with the diagnosis of rheumatoid arthritis. Septic arthritis presents with a single, swollen, red, hot joint. Osteoarthritis tends to present with Heberden's nodes on the distal interphalangeal joints. Juvenile idiopathic arthritis presents as swollen and stiff. Osteomyelitis presents with non specific symptoms including fever as well as local redness and inflammation.*

Question 87- Correct Answer (E)- Peptic ulcer

*All of the above apart from peptic ulcer can be a potential cause for clubbing in the hands*

*Some of the causes of clubbing broken down by system:*

*Cardiac = atrial myxoma, cyanotic heart disease, endocarditis, pericarditis*

*Gastrointestinal = malabsorption, inflammatory bowel disease, liver cirrhosis,*

*Respiratory = Cystic fibrosis, Tuberculosis, Pulmonary fibrosis, bronchiectasis, bronchial carcinoma*

Question 88 - Correct Answer (D)- Naproxen

*The one option NOT included is Naproxen. Naproxen is an anti-inflammatory and not included in immediate management. The way to remember this is MONA M- Morphine, O-Oxygen therapy, N - Nitrates, A – Aspirin*

Question 89- Correct Answer (C) Do an ABCDE assessment

*A child in respiratory distress is an acute emergency. You will always use ABCDE management. (A- airway, B- breathing, C- circulation, D – disability, E – everything else)*

*You would not examine the child's throat because stridor indicates a narrowed airway, we do not want to cause any distress to the child in case the airway becomes fully occluded. You would not do blood tests immediately in case of distressing the child, you would wait until you have assessed their airway. You would not check blood glucose as a priority in this case, but remember to check blood glucose in drowsy/unrousable children.*

Question 90- Correct Answer (C) Drug induced

*The full blood count is normal. Bruising occurs with knocks and bumps = trauma related. Aspirin is the most likely culprit for the bruising due to its effect on platelet function. Cushings, Thrombocytopenia and Vitamin C deficiency CAN contribute to easy bruising, but this is not indicated in the history in this case.*

Question 91- Answer D- Stimulation of G protein-coupled receptors

*Salmeterol is a long acting beta agonist. Beta receptors are found in the smooth muscle of the bronchi (and the GI tract, uterus and blood vessels). Stimulation of this G protein-coupled receptor causes smooth muscle relaxation and hence bronchodilation, this is beneficial in relieving symptoms in asthma. (A) competitive inhibitor of acetylcholine describes antimuscarinic drugs e.g ipratropium bromide. When muscarinic receptors are activated they cause parasympathetic effects therefore blocking these receptors causes the opposite effect and result in bronchodilation. Inhibition of osteoclasts (B) is the effect of bisphosphonates. Irreversible inhibition of COX enzyme (C) is the effect of NSAIDs e.g ibuprofen. Upregulation of anti-inflammatory genes (E) is the effect of corticosteroids.*

Question 92- Answer C – lung cancer

- (A) Bronchiectasis – Usually presents with a chronic productive cough with copious amounts of phlegm. Usually occurs after recurrent inflammation of the lungs which isn't indicated by the history. Generally it does not present with weight loss
- (B) Goodpasture's syndrome – Rare condition that causes pulmonary symptoms (e.g. haemoptysis) and renal symptoms (acute glomerulonephritis). Not associated weight loss or smoking.
- (C) Lung cancer – a cough with haemoptysis associated with weight loss and a history of smoking is a typical presentation of lung cancer. Smoking is a big risk factor
- (D) Pleural effusion – can be asymptomatic if small or present with breathlessness or pleuritic chest pain.
- (E) Tuberculosis – look for travel in history or close contacts for this diagnosis. Not caused by smoking but weight loss and haemoptysis are symptoms. Would usually also have b symptoms such as a fever or night sweats.

Question 93-Answer A- CHAD<sub>2</sub>VASc

- A. CHAD<sub>2</sub>VASc – risk of having a stroke with AF
- B. CURB65 – used in the management of community acquired pneumonia
- C. FRAX – falls risk score
- D. Qrisk3 – Risk of developing a heart attack or stroke within 10 years
- E. Wells' criteria – DVT Risk score

Question 94- Answer E- calcium channel blocker

- A. ACE inhibitor – first line treatment if younger than 55 or not afro-Caribbean ethnicity
- B. Angiotensin receptor blocker – first line treatment if younger than 55 or not afro-Caribbean ethnicity
- C. Amiodarone – not a hypertensive medication
- D. Beta blocker – used when ACEi, beta blocker and CCB aren't managing the hypertension
- E. Calcium channel blocker – correct answer. Diuretics or CCB are first line when >55 or Afro-Caribbean

Question 95- Answer D- NSAID use

NSAIDs increase the risk of developing peptic ulcers, not GORD.

Question 96- Answer D- PSA (Prostate specific antigen) levels

- A. Hb levels – not useful, may be used when doing tests for anaemia
- B. HCG levels – pregnancy related
- C. pANCA – ulcerative colitis
- D. PSA levels – correct answer – prostate specific antigen is raised in BPH or prostate cancer
- E. Troponin levels – myocardial infarction

Question 97- Answer A– Anti-transglutaminase

- A. Anti-transglutaminase – correct answer – IgA levels is diagnostic of coeliac
- B. C.difficile – infective
- C. Colonoscopy – not useful
- D. Faecal calprotectin e.g. Crohn's – test for GI inflammation
- E. pANCA – tests for ulcerative colitis

Question 98- Answer C– Gastric cancer

- A. Pancreatic cancer – very similar signs to gastric cancer, but dysphagia would not be present in pancreatic cancer
- B. Colorectal cancer – history contains no altered bowel habit of bleeding
- C. Gastric cancer – there is a palpable mass in the abdomen, with ascites and dysphagia
- D. Liver cancer – does not initially present with dysphagia
- E. Oesophageal cancer – palpable mass is in the abdomen

Question 99- Answer C- Pulmonary Embolism

- A. Angina generally does not present with haemoptysis and is not linked to OCP or surgery
- B. Oesophageal cancer would not present with SOB and is not linked with OCP or surgery
- C. PE – correct – typical presentation of a PE. OCP and recent surgery (immobilisation) are risk factors to increasing the likelihood of a blood clot.
- D. TIA is neurological and would present with stroke-like symptoms
- E. TB – haemoptysis is a key symptom to look out for but chest pain is not typical and is not linked to OCP or surgery.

Question 100- Answer D – IV alteplase

- A. Aspirin should be given for 2 weeks followed by clopidogrel after an ischaemic stroke, but this is not first line management.
- B. Beriplex is used when it there has been a warfarin related haemorrhagic stroke
- C. A beta blocker can be used for BP control following a stroke but it is not first line treatment
- D. IV alteplase is used to thrombolysed blood clots in the brain after an ischaemic stroke event.
- E. Surgery is not a first line treatment for ischaemic stroke.

## Google Form- Scores and Feedback

- **Record your score**- this enables us to calculate an average mark for the mock and gauge the difficulty of the paper as a whole. Please note all data collected is anonymous.
- **Inform us of mistakes**- from spelling mistakes to incorrect explanations, let us know where we've gone wrong so we can improve it.
- **Ask for further clarification**- maybe you want a clearer explanation of the difference between 2 answers or more justification of the single best answer, ask us and we'll get on it!

**Paper 3 Google Form-** <https://forms.gle/6VSwXHAvUJ1PC8if7>

I hope you found this mock beneficial for your learning, thanks for taking part.

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