

Multi-Speciality Recruitment Assessment Clinical Problem Solving - Mock Paper (2024)

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Instructions:

- Thank you for taking the time to complete this MSRA clinical problem solving mock paper.
- Please note that this is an unofficial practice paper, produced by Revise MSRA (www.revisemsra.com).
- It has been designed to replicate the official clinical problem solving exam questions as closely as possible in both content & format.
- This mock paper includes **97 items**, and should be **completed in 75 minutes**.
- There are two types of questions: Enhanced Matching Questions and Single Best Answer Questions. You may find the following resources useful before completing this paper if you require further information:
 - [Complete Guide to the MSRA 2024. How to Prepare | REVISEMSRA](#)
 - [Understanding the MSRA - Mind The Bleep](#)
- To simulate exam conditions as closely as possible, the answers and rationale will be presented for review at the end of the paper.
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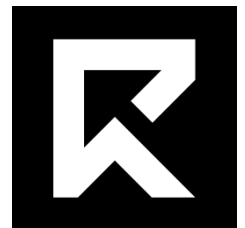
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Clinical Problem Solving

1. Palpitations

A 23 year old woman complains of palpitations. An ECG shows a short PR interval followed by broad QRS complexes with a slurred upstroke.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Wolff-Parkinson White
- B. Catecholaminergic polymorphic ventricular tachycardia
- C. Arrhythmogenic right ventricular cardiomyopathy
- D. Brugada Syndrome
- E. Long QT syndrome

2. Irregular periods

A 27 year old woman with difficulty conceiving. She reports irregular periods and, on examination, is overweight with multiple facial pustules and dark hair above her upper lip.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Hypothyroidism
- B. Cushing's syndrome
- C. 21-hydroxylase deficiency
- D. Polycystic ovarian syndrome
- E. Turner syndrome

3. Cough

A 5 month old girl with a runny nose and cough. She has a temperature of 38.0 degrees, with wheeze and crepitations throughout both lung fields.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Cystic fibrosis
- B. Bronchiolitis
- C. Bordetella pertussis
- D. Croup
- E. Viral induced wheeze

4. Weakness

A 66 year old man complains of clumsiness. He reports frequent tripping and dropping things. He has widespread fasciculations and muscular atrophy. His lower limb reflexes are brisk.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Amantadine
- B. Riluzole
- C. Pyridostigmine
- D. Galantamine
- E. Natalizumab

5. Constipation

A 53 year old man with 2 weeks of severe pain during defaecation. On examination, there is a small tear in the posterior midline of the anus.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Topical GTN
- B. Topical nifedipine
- C. Topical lidocaine
- D. Topical verapamil
- E. Topical diltiazem

6. Facial Weakness

A 64 year old woman with facial asymmetry which began following a flu-like illness. There is loss of the nasolabial fold on the right, and a maculopapular, vesicular rash within her right ear canal.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Alteplase
- B. Prednisolone
- C. Aciclovir
- D. Aspirin
- E. Aciclovir and prednisolone

7. Oedema (EMQ 1 of 3)

A 47-year-old man with frothy urine and swollen ankles. Bloods are positive for anti-phospholipase A2.

8. Oedema (EMQ 2 of 3)

A 29-year-old heroin user presents with swollen legs. Albumin is 15 (31). Renal biopsy shows multiple areas of sclerosis and hyalinosis.

9. Oedema (EMQ 3 of 3)

A 9-year-old boy with frothy urine, bilateral pitting oedema and hypoalbuminemia.

*For each case, what is the most likely **diagnosis**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Membranous nephropathy
- B. IgA nephropathy
- C. Focal segmental glomerulosclerosis
- D. Membranoproliferative glomerulonephritis
- E. Goodpasture's disease
- F. Crescentic glomerulonephritis
- G. Diffuse proliferative glomerulonephritis
- H. Minimal change disease

10. Red eye

A 61 year old woman with ulcerative colitis. She presents with sudden onset, severe left sided eye pain. On examination, there is marked conjunctival injection with a fixed, semi-dilated pupil.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Acute angle closure glaucoma
- B. Keratitis
- C. Anterior uveitis
- D. Episcleritis
- E. Scleritis

11. Insomnia

A 49 year old woman with insomnia. She has become reliant on diazepam to sleep over the last year, and is keen to stop.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Reduce benzodiazepine dose by 1/8 every 2 weeks
- B. Reduce benzodiazepine by 1/2 every week
- C. Reduce benzodiazepine by 1/2 every 2 weeks
- D. Reduce benzodiazepine by 1/4 every 2 weeks
- E. Stop benzodiazepines as soon as possible

12. Breathlessness

A 61 year old man with a dry cough and fine end-inspiratory crepitations bilaterally. CXR shows ground glass changes affecting the lower zones. ANA is positive. FVC is 54%.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Ambrisentan
- B. Prednisolone
- C. Pirfenidone
- D. Azathioprine
- E. Beclometasone inhaler

13. Scrotal pain

A 71 year old man with BPH complains of dysuria and scrotal pain. His scrotum is swollen, erythematous and tender, especially at the superior pole of the left testis.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Ceftriaxone 1g IM stat + Doxycycline 100mg BD
- B. Trimethoprim 200mg BD
- C. Co-amoxiclav 625 mg TDS
- D. Levofloxacin 500 mg OD
- E. Nitrofurantoin 100mg BD

14. Diabetes

A 53 year old man, with COPD and stable angina undergoes routine blood tests. His HbA1c is 56.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Metformin
- B. Metformin and dapagliflozin
- C. Pioglitazone
- D. Empagliflozin
- E. Metformin and gliclazide

15. Chest Pain

A 64 year old smoker reports episodes of central chest pain triggered by walking uphill. Each lasts approximately 5 minutes and is relieved by rest.

Select the **SINGLE** most appropriate **treatment** from the options below.

- A. Nicorandil
- B. Isosorbide mononitrate
- C. Bisoprolol
- D. Ivabradine
- E. Ranolazine

16. Vaginal discharge

A 17 year old woman with vulval pruritus, and green, frothy vaginal discharge. On examination, there is generalised vulvo-vaginal inflammation with strawberry cervix.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Vulvovaginal candidiasis
- B. Mycoplasma genitalium
- C. Bacterial vaginosis
- D. Chlamydia trachomatis
- E. Trichomoniasis vaginalis

17. Heavy menstrual bleeding

A 23 year old woman with heavy menstrual bleeding. Her Hb is 78 (MCV 69). A pelvic US is unremarkable.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Mefenamic acid
- B. Mirena IUS
- C. Tranexamic acid
- D. COCP
- E. Desogestrel

18. Urinary retention

A 64 year old man is admitted with urinary retention. On examination he has a mask-like face, and increased tone. His regular medications include sildenafil and fludrocortisone.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Drug-induced parkinsonism
- B. Multiple system atrophy
- C. Diabetic neuropathy
- D. Corticobasal degeneration
- E. Progressive supranuclear palsy

19. Memory loss

An 81 year old man with a gradual decline in memory. A 6-item cognitive impairment test suggests mild-moderate cognitive impairment.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Selegiline
- B. Amantadine
- C. Rivastigmine
- D. Memantine
- E. Amantadine

20. Growth & Development

A 9 month old boy is unable to sit without support. His mother reports that he primarily uses his left hand, although his father is also left handed. There is generalised hypertonia.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Spinal muscular atrophy
- B. Duchenne muscular dystrophy
- C. Becker muscular dystrophy
- D. Cerebral palsy
- E. Constitutional delay

21. Overdose

A 66 year old woman is BIBA after an intentional bisoprolol overdose. Her heart rate is 31 bpm and blood pressure is 74/46. There is no improvement with atropine.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Aminophylline
- B. Glycopyrrolate
- C. Theophylline
- D. Glucagon
- E. Sodium nitroprusside

22. Tiredness

A 6 year old boy with shortness of breath on exertion. He has icteric sclera. Bloods show a Hb of 66, with heinz bodies and bite cells on a blood film.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Haemolytic uraemic syndrome
- B. Sickle cell anaemia
- C. Warm autoimmune haemolytic anaemia
- D. G6PD deficiency
- E. Beta-thalassaemia major

23. Psychiatry

A 22 year old man reports feeling constantly worried. He is always anxious, and his mind races with what might go wrong. He has been unable to attend any of his university lectures.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Dosulepin
- B. Group CBT
- C. Mirtazapine
- D. Sertraline
- E. Group exercise

24. Abdominal pain

A 78 year old woman is admitted with a left NOF#. She has not opened her bowels since her total hip replacement last week. Her abdomen is distended and generally tender, with absent bowel sounds.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Small bowel obstruction
- B. Paralytic ileus
- C. Opiate induced constipation
- D. Large bowel obstruction
- E. Volvulus

25. Palpitations (EMQ 1 of 3)

A 31 year old woman with palpitations, diarrhoea and weight loss. She has a bilateral tremor. Thyroid scintigraphy shows patchy uptake.

26. Palpitations (EMQ 2 of 3)

A 46 year old man with palpitations. He reports a recent viral illness but is otherwise well. He is tachycardic and has a painful goitre.

27. Palpitations (EMQ 3 of 3)

A 27 year old woman with anxiety and weight loss. She reports palpitations, and has a mild bilateral tremor.

*For each case, what is the most likely **diagnosis**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Generalised anxiety disorder
- B. Toxic multinodular goitre
- C. Crohn's disease
- D. Grave's disease
- E. hCG-induced thyrotoxicosis
- F. Riedel's thyroiditis
- G. De Quervain's thyroiditis
- H. Hashimoto's thyroiditis

28. ECG changes

A 24 year old Asian man collapses whilst playing football. An ECG shows convex ST elevation in V1-V3 followed by T wave inversion.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Arrhythmogenic right ventricular cardiomyopathy
- B. Pericarditis
- C. Brugada syndrome
- D. Pulmonary embolism
- E. Hypertrophic cardiomyopathy

29. Diarrhoea

A 74-year-old woman is admitted with abdominal pain and watery diarrhoea. She was treated for an upper urinary tract infection last week.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Ciprofloxacin
- B. Amoxicillin and metronidazole
- C. Rifaximin
- D. Fidaxomicin
- E. Vancomycin

30. Weakness

A 61 year old man with weakness and bilateral ptosis. Single fibre EMG shows a decremental response to repetitive stimulation.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. Serum anti-muscle specific kinase antibody testing
- B. Serum anti-acetylcholine receptor antibody testing
- C. CT thymus
- D. Serum anti-voltage gated calcium channel antibody testing
- E. MRI brain

31. Hypoalbuminemia

A 34-year-old woman with ankle swelling and bilateral pitting oedema. A renal biopsy shows a thickened basement membrane with a 'spike and dome' appearance.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Prednisolone
- B. Mycophenolate mofetil
- C. Cyclophosphamide
- D. Plasmapheresis
- E. Ramipril

32. Pharmacology

A 21 year old woman becomes pregnant despite good compliance with the combined oral contraceptive pill. She commenced a new regular medication last month.

Select the **SINGLE** most likely **causative drug** from the options below.

- A. Ciprofloxacin
- B. Rifampicin
- C. Clarithromycin
- D. Amiodarone
- E. Sodium valproate

33. Dizziness

A 66 year old woman with recurrent episodes of dizziness, which she describes as 'the world spinning' around her. Each episode lasts less than a minute and often occurs after rolling over in bed.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Oral betahistine
- B. Brandt-Daroff exercises
- C. Oral cyclizine
- D. Epley manoeuvre
- E. Dix-Hallpike manoeuvre

34. Pruritus

A 4 year old boy with intense perianal itching which is worst at night, waking him up.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Flucytosine
- B. Ivermectin
- C. Primaquine
- D. Amphotericin
- E. Mebendazole

35. Azathioprine

A 23-year-old woman is diagnosed with Crohn's disease. Her consultant plans to initiate azathioprine.

Select the **SINGLE** most important **investigation** from the options below.

- A. CYP450 testing
- B. Baseline echocardiogram
- C. HLA-B*58:01
- D. Thyroid function tests
- E. TPMT levels

36. Rash

A 31 year old man, who returned from the Lake District last week, attends with a headache, lethargy and myalgia. There is a circular rash on his right calf, with a bulls-eye appearance.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Metronidazole
- B. Amoxicillin
- C. Doxycycline
- D. Flucloxacillin
- E. Ceftriaxone

37. SOB

A 39 year old woman with shortness of breath on exertion. Right heart catheterisation confirms a pulmonary artery pressure of 37mmHg, with a positive response to acute vasodilator testing.

Select the **SINGLE** most appropriate **treatment** from the options below.

- A. Ambrisentan
- B. Iloprost
- C. Bosentan
- D. Nifedipine
- E. Sildenafil

38. Skin changes

An 81 year old woman with multiple pigmented lesions on her back and chest. They are raised, pigmented and wart-like, with a stuck-on appearance.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Acral lentiginous melanoma
- B. Actinic keratosis
- C. Solar lentigo
- D. Keratoacanthoma
- E. Seborrhoeic keratosis

39. Deranged LFTs

A 44-year-old man with type 2 diabetes and dyslipidaemia undergoes routine blood tests. His ALT and AST are elevated. He admits to drinking 12 units of alcohol per week.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. Serum caeruloplasmin levels
- B. Blood-borne virus screen
- C. Liver biopsy
- D. Serum alpha-1 antitrypsin levels
- E. Transient elastography

40. JAK-2

A 51 year old woman with burning pain in her hands, which appear erythematous and are warm to touch. Her FBC shows a platelet count of 940. JAK-2 is positive.

Select the **SINGLE** most appropriate long-term **management** from the options below.

- A. Imatinib
- B. Hydroxycarbamide
- C. Aspirin
- D. Rituximab
- E. Hydroxychloroquine

41. Hot flushes

A 54 year old woman with night sweats and hot flushes. She also reports low mood and loss of libido since her periods stopped 6 months ago. She has no past medical history.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Sertraline
- B. Continuous combined HRT
- C. Low dose vaginal oestrogen
- D. Sequential combined HRT
- E. Oestrogen-only HRT

42. Bedwetting

A 6 year old boy who wets the bed at least 5x per week, with no symptoms during the day. There has been no improvement with a positive reward system and advice.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Tolvaptan
- B. Enuresis alarm
- C. Desmopressin
- D. Oxybutynin
- E. Solifenacin

43. Voices

A 20 year old man hearing voices. He describes 2 'nasty' men who 'won't leave him alone'. They encourage him to harm himself. His friends state that he has been increasingly withdrawn over the last 3 months.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Sodium valproate
- B. Clozapine
- C. Lithium
- D. Imipramine
- E. Quetiapine

44. Swollen ankles

An 11-year-old boy with a two week history of frothy "bubbly" urine and progressive swelling in both legs, and around his eyes. His albumin is 16 (low).

Select the **SINGLE** most appropriate **management** from the options below.

- A. Lisinopril
- B. Candesartan
- C. Mycophenolate mofetil
- D. Prednisolone
- E. Cyclophosphamide

45. Cough

A 2 year old girl with a seal-like, barking cough and hoarse voice, preceded by a mild coryzal illness.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Nebulised adrenaline
- B. IM Palivizumab
- C. Oral dexamethasone
- D. IV hydrocortisone
- E. Nebulised ipratropium

46. Ootalgia

A 12 year old boy with 3 days of right sided ear pain. The tympanic membrane is erythematous and bulging. His temperature is 37.6.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Oral nitrofurantoin
- B. Oral amoxicillin
- C. Oral clarithromycin
- D. Topical ciprofloxacin with dexamethasone
- E. Paracetamol

47. Rash

A 24 year old woman with multiple well-demarcated oval lesions with superficial scale. She reports a single larger lesion at the top of her chest before the others appeared.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Erythrasma
- B. Erythema infectiosum
- C. Pityriasis versicolor
- D. Guttate psoriasis
- E. Pityriasis Rosea

48. Hair loss

A 30 year old woman with hair loss. On examination, there are well-circumscribed patches of hair loss, with normal underlying skin and exclamation mark hairs peripherally.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Alopecia areata
- B. Androgenetic alopecia
- C. Cicatricial alopecia
- D. Telogen effluvium
- E. Traction alopecia

49. Hypertension (EMQ 1 of 3)

A 56 year old woman with uncontrolled hypertension (161/79). She is currently managed with ramipril, amlodipine and indapamide. Her latest eGFR is > 90, Na⁺ 140, K⁺ 3.6, and urea 6.1.

50. Hypertension (EMQ 2 of 3)

A 58 year old african-caribbean woman with T2DM attends with headaches. ABPM shows an average BP of 156/94.

51. Hypertension (EMQ 3 of 3)

A 61 year old man with hypertension. Despite ramipril and amlodipine, his BP is 163/91.

*For each case, what is the most appropriate **treatment**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Bendroflumethiazide
- B. Lisinopril
- C. Amlodipine
- D. Doxazosin
- E. Spironolactone
- F. Indapamide
- G. Admit for further management
- H. Aliskiren

52. Menorrhagia

A 17 year old woman with heavy menstrual bleeding. Bloods show a Hb of 70, MCV 68 and a prolonged bleeding time. INR is normal and APTT is mildly increased.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Protein S deficiency
- B. Haemophilia A
- C. Von Willebrand's disease
- D. Factor 5 Leiden
- E. Haemophilia B

53. Incontinence

A 58 year old woman describes a sudden need to pass urine. She reports 'accidents' if she is unable to reach a toilet in time. There was no improvement with a bladder training program.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Mirabegron
- B. Amitriptyline
- C. Oxybutynin
- D. Pelvic floor muscle training
- E. Duloxetine

54. Breast cancer

A 51 year old woman with Her2-positive breast cancer. Her consultant plans to commence trastuzumab.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. HRCT
- B. ECG
- C. Visual field assessment
- D. Echocardiogram
- E. CXR

55. Overdose

A 24 year old woman with emotional instability and mood swings. She has a history of impulsive behaviour, and ends up in intense, 'toxic' relationships. She is admitted following an intentional overdose.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Narcissistic personality disorder
- B. Histrionic personality disorder
- C. Antisocial personality disorder
- D. Borderline personality disorder
- E. Schizoid personality disorder

56. Rash

A 14-year-old girl with abdominal pain, generalised joint aches, and a palpable purpuric rash on the extensor surfaces of her arms and buttocks.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Henoch-Schonlein Purpura
- B. Goodpasture's disease
- C. Berger's disease
- D. Granulomatosis with polyangiitis
- E. Membranoproliferative glomerulonephritis

57. Vomiting

A 6 week infant with recurrent projectile vomiting which happens a few minutes after feeding. An olive shaped mass can be palpated just above his umbilicus.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Infantile colic
- B. Gastro-oesophageal reflux
- C. Intussusception
- D. Volvulus
- E. Pyloric stenosis

58. Rheumatology (EMQ 1 of 3)

A 35 year old man with shortness of breath, headache and tingling in his left thumb. On examination there is polyphonic wheeze. Bloods are positive for pANCA.

59. Rheumatology (EMQ 2 of 3)

A 4 year old boy with 6 days of unexplained fever, cracked, red lips and bilateral conjunctival injection.

60. Rheumatology (EMQ 3 of 3)

A 47 year old man with burning pain in his left thigh and weakness in his right hand. He has a purple, reticulated rash on both legs and is positive for hepatitis B.

*For each case, what is the most likely **diagnosis**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Giant cell arteritis
- B. Takayasu's arteritis
- C. Polyarteritis nodosa
- D. Kawasaki's disease
- E. Buerger's disease
- F. Granulomatosis with polyangiitis
- G. Eosinophilic granulomatosis with polyangiitis
- H. Microscopic polyangiitis

61. Weakness

A 30 year old woman who cannot move her left leg (power 0/5). Investigations are unremarkable. She is otherwise well, and does not seem concerned by her symptoms.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Somatisation disorder
- B. Munchausen's syndrome
- C. Malingering
- D. Conversion disorder
- E. Factitious disorder

62. Pharmacology

A 72 year old man attends for an INR check. His INR is 6.3 despite good compliance with his usual dose of warfarin. He was commenced on a new medication last month.

Select the **SINGLE** most likely **causative drug** from the options below.

- A. Phenytoin
- B. Gliclazide
- C. Rifampicin
- D. Carbamazepine
- E. Sodium valproate

63. AKI

A 31-year-old man with dyspnoea, haemoptysis, and general malaise. Creatinine is 310 (104). Renal biopsy shows linear IgG deposits along the basement membrane.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. Anti-glomerular basement membrane antibodies
- B. Perinuclear- anti-neutrophil cytoplasmic antibodies (P-ANCA)
- C. Cytoplasmic-anti-neutrophil cytoplasmic antibodies (C-ANCA)
- D. Anti-La antibodies
- E. Anti-dsDNA antibodies

64. Cough (EMQ 1 of 3)

A 26 year old woman with shortness of breath, dry cough and weight loss. Bloods show hypercalcaemia and raised serum ACE levels.

65. Cough (EMQ 2 of 3)

A 46 year old man with recurrent episodes of shortness of breath, cough and fever which occur in the evenings after work. He works in bird sanctuary.

66. Cough (EMQ 3 of 3)

A 74 year old man with exertional dyspnoea. CXR shows upper zone fibrosis and egg-shell calcification of the hilar lymph nodes. He previously worked as a miner.

*For each case, what is the most likely **diagnosis**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Coal worker's pneumoconiosis
- B. Hypersensitivity pneumonitis
- C. Occupational asthma
- D. Ankylosing spondylitis
- E. Sarcoidosis
- F. Asbestosis
- G. Drug-induced pulmonary fibrosis
- H. Silicosis

67. Menopause

A 56 year old woman who is going through 'the change'. Serial FSH levels are high (>30). Her primary symptom is vaginal dryness which is uncomfortable and affecting her sex life. Her last period was 6 months ago.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Oestrogen-only HRT
- B. Anastrozole
- C. Continuous combined HRT
- D. Sequential combined HRT
- E. Low dose vaginal oestrogen

68. Abdominal pain

An 11 year old boy with abdominal pain, nausea and vomiting. His pain is now worst in the right iliac fossa. He has a low grade fever with guarding in the right iliac fossa.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. Abdominal x-ray
- B. US abdomen pelvis
- C. MRI abdomen pelvis
- D. CT abdomen pelvis
- E. Scrotal exploration

69. Rash

A 14 year old boy with a non-blanching petechial rash on both arms and legs. A full blood count shows a WCC 9, Plts 7, CRP 12. He reports a mild viral illness the week prior.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Intravenous immunoglobulin
- B. Platelet transfusion
- C. Plasmapheresis
- D. Prednisolone
- E. Ceftriaxone

70. Eye pain

A 21 year old woman with right sided eye pain. On examination the eye is hyperaemic with a fixed, irregular pupil. Fluorescein staining reveals multiple fine branching lesions.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Herpes zoster ophthalmicus
- B. Corneal abrasion
- C. Acute angle closure glaucoma
- D. Herpes simplex keratitis
- E. Gonococcal ophthalmia

71. Confusion

A 37 year old man with acute confusion. He appears agitated and clammy, and is tachycardic, pyrexial and hypertensive. His pupils are dilated and you note sudden involuntary jerking movements in both arms and legs.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Malignant hyperthermia
- B. Anticholinergic toxidrome
- C. Serotonin syndrome
- D. Neuroleptic malignant syndrome
- E. Sympathomimetic toxidrome

72. Asthma

An 18 year old boy with dyspnoea, chest tightness and wheeze most days, despite regular low dose inhaled budesonide (400mcg).

Select the **SINGLE** most appropriate **management** from the options below.

- A. Formoterol
- B. Medium dose inhaled corticosteroid
- C. Theophylline
- D. High dose inhaled corticosteroid
- E. Montelukast

73. Antibodies (EMQ 1 of 3)

A 42 year old woman with dry, gritty eyes and difficulty swallowing her food. Schirmer's test is positive.

74. Antibodies (EMQ 2 of 3)

A 58 year old man with proximal muscle weakness and a macular rash across his upper back and shoulders.

75. Antibodies (EMQ 3 of 3)

A 30 year old with widespread joint pains and morning stiffness. X-rays show juxta-articular osteoporosis.

*For each case, what is the most appropriate **investigation**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Anti-SCL-70 antibodies
- B. Anti-Mi-2 antibodies
- C. Anti-histone antibodies
- D. Anti-smith antibodies
- E. Anti-Ro antibodies
- F. Rheumatoid factor
- G. Anti-Jo-1 antibodies
- H. Serum anti-proteinase 3 antineutrophil cytoplasmic antibodies

76. Urology

A 49 year old man with painful erections and a change in the shape of his penis, which has become shortened and curved upwards over the last 6 months.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Chordee
- B. Lichen planus
- C. Paraphimosis
- D. Priapism
- E. Peyronie's disease

77. Insomnia

A 28 year old woman is unable to sleep due to an overwhelming need to move her legs. She reports feeling like insects are crawling all over them.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Clonazepam
- B. Ropinirole
- C. Duloxetine
- D. Amitriptyline
- E. Diazepam

78. Headache

A 28 year old woman with recurrent attacks of severe pain in the right side of her face, which she likens to an electric shock. Her pain lasts for about 40 seconds and is often triggered by washing her face.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Sumatriptan
- B. Gabapentin
- C. Indomethacin
- D. Carbamazepine
- E. Amitriptyline

79. Jaundice (EMQ 1 of 3)

A 38-year-old woman with generalised pruritus and lethargy. Bloods show an elevated ALP & bilirubin and are positive for anti-mitochondrial M2 antibodies.

80. Jaundice (EMQ 2 of 3)

A 33-year-old man with ulcerative colitis complains of right upper quadrant pain. P-ANCA is positive, ALP and bilirubin are raised.

81. Jaundice (EMQ 3 of 3)

A 48-year-old woman with malaise and pruritus. Bloods are positive for anti-soluble liver antigen antibodies.

*For each case, what is the most likely **diagnosis**?*

*Select only **ONE** option from the following.*

Each option may be selected not at all, once, or multiple times.

- A. Alcoholic liver cirrhosis
- B. Autoimmune hepatitis
- C. Non-alcoholic steatohepatitis
- D. Cholangiocarcinoma
- E. Primary biliary cirrhosis
- F. Hepatocellular carcinoma
- G. Primary sclerosing cholangitis
- H. Viral hepatitis

82. Tired all the time

A 71 year old man with weight loss, tiredness all the time and easy bruising. Bloods show a leukocytosis, and FISH analysis is positive for t(9;22).

Select the **SINGLE** most appropriate **management** from the options below.

- A. Cytarabine
- B. All-trans retinoic acid
- C. Hydroxycarbamide
- D. Imatinib
- E. Hydroxycarbamide

83. Fever

A 20 year old girl who returned from Indonesia last week, with myalgia, fever and headache. Investigations are positive for plasmodium falciparum with a parasitaemia of 4%.

Select the **SINGLE** most appropriate **management** from the options below.

- A. PO artemether-lumefantrine
- B. IV quinine and doxycycline
- C. IV praziquantel
- D. IV artesunate
- E. IV chloroquine

84. Lumps & bumps

A 7 year old boy with a soft pea-sized bump in his left forearm. He has multiple light brown flat patches on his trunk and legs and freckling in both axilla.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Neurofibromatosis type 2
- B. Tuberous sclerosis
- C. Von Hippel-Lindau syndrome
- D. Neurofibromatosis type 1
- E. Lesch-Nyhan syndrome

85. Vacant episodes

A 7 year old girl with recurrent vacant episodes at school, where she appears to be staring into the distance, daydreaming. She has no recollection of these events.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Lamotrigine
- B. Ethosuximide
- C. Sodium valproate
- D. Carbamazepine
- E. Levetiracetam

86. Headaches

A 33 year old woman, in the third trimester of her second pregnancy, complains of headache. Her BP is 166/98. A urine dip is positive for proteinuria.

Select the **SINGLE** most appropriate **management** from the options below.

- A. PO amlodipine
- B. IV hydralazine
- C. PO labetalol
- D. PO nifedipine
- E. IV Nitroprusside

87. Rash

A 14 year old girl with an intensely itchy, vesiculopapular rash affecting the extensor surfaces of her elbows, buttocks and knees. Endomysial antibodies are positive.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Pemphigus vulgaris
- B. Dermatitis herpetiformis
- C. Bullous pemphigoid
- D. Lichen planus
- E. Lichen sclerosus

88. Urinary symptoms

A 76 year old man with a poor urinary stream, intermittency and terminal dribble. The prostate feels mildly enlarged, but is smooth and symmetrical.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Solifenacin
- B. Tamsulosin
- C. Flnasteride
- D. Mirabegron
- E. Oxybutynin

89. Joint pains

A 27 year old woman with painful swelling of both knees, wrists and ankles. She is pyrexial, with a salmon-coloured maculopapular rash and hepatosplenomegaly.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Adult-onset Still's Disease
- B. Systemic lupus erythematosus
- C. Sharp's syndrome
- D. Rheumatoid arthritis
- E. Familial Mediterranean Fever

90. Breathlessness

A 57 year old woman with breathlessness undergoes an US guided pleural tap for a left sided pleural effusion. The pleural fluid protein is 43.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Liver cirrhosis
- B. Malnutrition
- C. Heart failure
- D. Pneumonia
- E. Nephrotic syndrome

91. Side effects

A 26 year old woman with a sore throat and fever. Her white cell count is 0.2×10^9 / litre.

Select the **SINGLE** most likely **causative drug** from the options below.

- A. Amiodarone
- B. Bendroflumethiazide
- C. Lamotrigine
- D. Carbimazole
- E. Phenobarbitone

92. Tremor

A 30 year old woman who is 7 weeks pregnant complains of palpitations and anxiety. TSH levels are low, T4 levels are high.

Select the **SINGLE** most appropriate **management** from the options below, in this stage of pregnancy.

- A. Propylthiouracil
- B. Carbimazole
- C. Liothyronine
- D. Radioiodine 131
- E. Levothyroxine

93. Early satiety

A 63 year old woman with reduced appetite and early satiety. She feels persistently bloated. Abdominal examination is unremarkable.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Urgent CT chest abdomen pelvis
- B. Check serum CA125 concentration
- C. 2 week wait referral (via suspected cancer pathway)
- D. 2WW OGD
- E. Trial lansoprazole

94. Pregnancy

A 21 year old primip, normally fit and well, undergoes an oral glucose tolerance test at 24 weeks. Her fasting BM is 7.4 and 2-hour plasma glucose is 9.4.

Select the **SINGLE** most appropriate **management** from the options below.

- A. Metformin
- B. Trial exercise and diet
- C. Gliclazide
- D. Empagliflozin
- E. Insulin

95. Loss of vision

A 78 year old woman with sudden loss of vision in her left eye. Severe, flame-shaped retinal haemorrhages are visible in all quadrants on fundoscopy.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Malignant hypertension
- B. Anterior ischaemic optic neuropathy
- C. Central retinal vein occlusion
- D. Optic neuritis
- E. Central retinal artery occlusion

96. Hearing loss

A 61 year old man with right sided hearing loss and intermittent tinnitus. Weber's lateralises to the left ear. MRI confirms a mass at the cerebellopontine angle.

Select the **SINGLE** most likely **diagnosis** from the options below.

- A. Meningioma
- B. Brainstem glioma
- C. Vestibular schwannoma
- D. Glomus jugulare
- E. Craniopharyngioma

97. Pharmacology

A 44 year old woman from Korea with severe pain, and swelling of her left 1st MTP joint. After completing a course of naproxen, her GP plans to commence allopurinol.

Select the **SINGLE** most appropriate **investigation** from the options below.

- A. CXR
- B. Visual field assessment
- C. ECG
- D. Echocardiogram
- E. HLA-B*5801 testing

End.

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Answers & Rationale

Question 1. Palpitations

Answer: A - Wolff Parkinson White

Wolff Parkinson White - Key Learning

- Congenital accessory pathway, can cause episodic tachyarrhythmias.
- ECG: **Short PR** (<120ms), **wide QRS** (>110ms) with **delta wave** (slurred, slow rising QRS upstroke).

Question 2. Irregular Periods

Answer: D - Polycystic ovarian syndrome

Polycystic ovarian syndrome - Key Learning

- CFs: Oligomenorrhoea, impaired fertility, hirsutism, acne, obesity.
- Investigations:
 - Bloods: Increased LH:FSH ratio, increased testosterone, low SHBG.
 - US Pelvis - increased ovarian volume/follicles (12+)
- Management:
 - Hirsutism/acne - COCP 1st line
 - Infertility - weight loss, metformin, clomifene is most effective

Question 3. Cough

Answer: B - Bronchiolitis

Bronchiolitis - Key Learning

- Most common cause: RSV
- CFs:
 - Infants < 2 in winter months (peak incidence 3-6 months).
 - Coryza, dry cough, SOB.
 - O/E: Crepitations/wheeze throughout both lung fields +/- respiratory distress.
- Management: Supportive - oxygenation, feeding support, palivizumab for prevention

Question 4. Weakness

Answer: B - Riluzole

Motor Neurone Disease - Key Learning

- Suspect in patients > 50 years with progressive asymmetrical weakness, mixed UMN and LMN signs including fasciculations and muscle wasting.
- Sensation is spared.
- Diagnosis is clinical.
- Management: Riluzole, NIV

Question 5. Constipation

Answer: A - Topical 0.4% GTN

Anal fissure - Key Learning

- CFs:
 - 90% in posterior midline.
 - Severe, sharp pain on defaecation +/- fresh PR bleeding.
 - History of constipation
- Management:
 - Analgesia inc. topical lidocaine 5%.
 - If symptoms > 1 week - **1st Line: Topical 0.4% GTN ointment** for 6-8 weeks.
 - If unhealing - refer to secondary care/consider topical diltiazem 2% ointment.

Question 6. Facial Weakness

Answer: E - Aciclovir and prednisolone

Ramsay Hunt Syndrome - Key Learning

- Cause: VZV
- CFs:
 - LMN facial palsy - facial droop/weakness inc. forehead
 - Ear pain, zoster oticus - vesicular, erythematous rash in ear canal
 - +/- CN8 involvement - SNHL, tinnitus, vertigo, hyperacusis
- Management: Antivirals (aciclovir) AND steroids (prednisolone)

Question 7. Oedema (EMQ 1 of 3)

Answer: A – Membranous nephropathy

Membranous nephropathy - Key Learning

- Most common cause of nephrotic syndrome in adults
- Anti Phospholipase A2 antibodies may be positive
- Mainstay of management - ACEi/ARB - reduce proteinuria

Question 8. Oedema (EMQ 2 of 3)

Answer: C - Focal segmental glomerulosclerosis

Focal segmental glomerulosclerosis - Key Learning

- Causes: HIV, Heroin use, Alports
- High rate of recurrence

Question 9. Oedema (EMQ 3 of 3)

Answer: H – Minimal change disease

Minimal change disease - Key Learning

- Most common cause of nephrotic syndrome in children
- Steroids are mainstay of management - 80% steroid responsive

Question 10. Red eye

Answer: A - Acute angle closure glaucoma

Acute angle closure glaucoma - Key Learning

- CFs: Acute, severe unilateral eye pain and redness, N&V, halos.
- O/E: Hyperaemic/injected eye with a fixed, non-reactive, semi-dilated pupil which may be oval in shape, hazy cornea.
- Management: IV acetazolamide, topical pilocarpine, timolol, apraclonidine

Question 11. Insomnia

Answer: A - Reduce dose by 1/8th every 2 weeks

Benzodiazepine dependence - Key Learning

- Withdraw BZDs in steps of 1/8th at a time, every few weeks.

Question 12. Breathlessness

Answer: C - Pirfenidone

Idiopathic pulmonary fibrosis - Key Learning

- CFs: Dry cough, progressive exertional dyspnoea, commonly > 60 yrs.
- O/E: Bilateral fine end-inspiratory creps, clubbing.
- Investigations
 - 1st Line: HRCT
 - Other
 - Spirometry - restrictive (low FVC, high Fev1%)
 - Antinuclear antibodies commonly positive
- Management: Nintedanib, pirfenidone.

Question 13. Scrotal Pain

Answer: D - Levofloxacin 500 mg OD

Epididymo-orchitis - Key Learning

- Aetiology
 - Age < 35 - STI (CT/NG).
 - Age > 35 - UTI/enteric (E. Coli, proteus, kleb, pseudom).
- CFs: Acute, unilateral scrotal pain and erythema +/- STI/UTI symptoms. Prehn's positive.
- Management
 - If likely STI related (Age < 35): Ceftriaxone + Doxycycline.
 - If likely UTI/enteric (Age > 35, catheter etc) - Ofloxacin OR Levofloxacin.

Question 14. Diabetes

Answer: B - Metformin and dapagliflozin

Initial management of T2DM - Key Learning

- Initiate pharmacological treatment if HbA1c > 48 despite L/S measures.
- 1st Line: Metformin
- *If any of* (a) HF (b) established CVD (c) high risk of CVD - 1st Line: Metformin **and** SGLT-2 inhibitor (dapagliflozin, empagliflozin)

Question 15. Chest Pain

Answer: C - Bisoprolol

Management of Angina - Key Learning

- **Step 1:** Beta-blocker OR RL-CCB.
- **Step 2:** Combine B-blocker with dihydropyridine CCB (amlodipine/nifedipine).
 - If on RL-CCB choose a third line drug (cannot combine RL-CCB and BB - risk of HB)
- **Step 3:** If still uncontrolled, refer for angiography +/- revascularisation.
 - Consider 3rd drug whilst a/w assessment: nitrate, nicorandil, ivabradine (if HR > 70bpm), or ranolazine.

Question 16. Vaginal Discharge

Answer: E - Trichomoniasis vaginalis

Trichomoniasis vaginalis - Key Learning

- CFs: Frothy, yellow-green vaginal discharge, vulvo-vaginal pruritus, dysuria.
- O/E: Strawberry cervix.
- Management: PO Metronidazole 400mg BD 1 week

Question 17. Heavy Menstrual Bleeding

Answer: B - Mirena IUS

Menorrhagia - Key Learning

- Causes: Idiopathic, fibroids, endometrial polyps, adenomyosis, VWD.
- Management - if menorrhagia is idiopathic, or secondary to adenomyosis or fibroids < 3 cm:
 - 1st Line: Levonorgestrel intrauterine system
 - 2nd line: Tranexamic acid, Mefenamic acid, COCP

Question 18. Urinary retention

Answer: B - Multiple system atrophy

Multiple system atrophy - Key Learning

- CFs: Parkinsonism plus autonomic dysfunction, manifesting as
 - Falls due to postural hypotension
 - Impotence
 - Loss of bladder control/retention

Question 19. Memory loss

Answer: C - Rivastigmine

Alzheimer's disease - Key Learning

- Management of Alzheimer's:
 - Acetylcholinesterase inhibitors 1st line: Donepezil, rivastigmine, galantamine.
 - 2nd line/ or monotherapy in severe AD: Memantine

Question 20. Growth & Development

Answer: D - Cerebral palsy

Early years red flags - Key Learning

- Poor head control, unable to sit by 8 months
- Not walking by 18 months
- Hand preference < 12 months

Question 21. Overdose

Answer: D - Glucagon

Beta-blocker OD - Key Learning

- Management: Glucagon is the mainstay of treatment of beta-blocker OD
 - Positive inotropic/chronotropic effects

Question 22. Tiredness

Answer: D - G6PD deficiency

G6PD deficiency - Key Learning

- X-linked recessive
- Pathophysiology: Intravascular haemolytic anaemia caused by oxidative damage to RBCs, due to deficiency in glutathione
- CFs: Anaemia, jaundice, gallstones
- Investigations:
 - DCT negative, Schumm positive
 - Blood film: HEINZ bodies
 - Diagnosis: G6PD enzyme assay

Question 23. Psychiatry

Answer: D - Sertraline

Management of GAD - Key Learning

- Step 1 - Low-intensity psychological intervention (e.g. guided self help or group CBT).
- Step 2 - if step 1 ineffective or marked functional impairment, either:
 - (a) High intensity psychological intervention (individual CBT or applied relaxation) OR..
 - (b) Pharmacological Mx: Sertraline 1st line

Question 24. Abdominal pain

Answer: B - Paralytic ileus

Paralytic ileus - Key Learning

- Aetiology. Commonly a post-operative complication - transiently impaired motor function of small and large bowel.
- O/E: Abdominal distension, absent bowel sounds

Question 25. Palpitations (EMQ 1 of 3)

Answer: B – Toxic multinodular goitre

Toxic multinodular goitre - Key Learning

- Autonomously functioning thyroid nodules
- Thyroid nuclear scintigraphy - patchy uptake
- Management: Radio-iodine 131 is often used 1st line

Question 26. Palpitations (EMQ 2 of 3)

Answer: G – De Quervain’s thyroiditis

De Quervain’s thyroiditis - Key Learning

- Classically triggered by a viral infection
- Phase 1: Hyperthyroidism with painful goitre
- Phase 2 - euthyroid, phase 3 - hypothyroid.

Question 27. Palpitations (EMQ 3 of 3)

Answer: D – Grave’s disease

Grave’s disease - Key Learning

- The commonest cause of hyperthyroidism
- IgG antibodies vs TSH R (90% of patients)

Question 28. ECG changes

Answer: C - Brugada syndrome

Brugada syndrome - Key Learning

- Autosomal dominant disorder
- CFs: Sudden cardiac death, syncope. More common in Asian ethnicities.
- ECG: Convex ST elevation in V1-3 followed by T wave inversion, RBBB.
 - ST changes increase with flecainide/ajmaline provocation

Question 29. Diarrhoea

Answer: E - Vancomycin

Clostridium difficile - Key Learning

- CFs: Recent antibiotics (cephalosporins, clindamycin), abdominal pain, distension, diarrhoea.
- Investigations: C.diff toxin
- Management:
 - 1st line PO vancomycin 125mg QDS (+/- metronidazole if life-threatening).
 - Relapse within 12 weeks: Fidaxomicin
 - Recurrence > 12 weeks: Fidaxomicin or vancomycin

Question 30. Weakness

Answer: B - Serum anti-acetylcholine receptor antibody testing

Myasthenia gravis - Key Learning

- Anti-acetylcholine receptor antibodies at NMJ cause fatigable weakness
- CFs: ptosis, diplopia, dysphonia, girdle muscle weakness. Symptoms worse at end of day.
- Investigations:
 - Anti-AchR antibodies
 - Anti-MuSK antibodies
 - EMG - decremental response
- Management:
 - Long-acting acetylcholinesterase inhibitors - Pyridostigmine
 - Thymectomy

Question 31. Hypoalbuminaemia

Answer: E – Ramipril

Membranous nephropathy - Key Learning

- CFs: Nephrotic syndrome in Adults.
- Causes: idiopathic, malignancy, hep B, malaria.
- Antiphospholipase A2 antibodies
- Electron microscopy: spike and dome appearance, thickened BM.
- Management: ACEi are mainstay of mx

Question 32. Pharmacology

Answer: B - Rifampicin

CYP450 inducers - Key Learning

- Clinical significance: Increase enzyme activity, increasing the metabolism of certain drugs and therefore reducing their therapeutic effect.
- PCBRASSS - Phenytoin, carbamazepine, barbiturates, rifampicin, alcohol (chronic), St John's wort, smoking, sulfonyleureas (gliclazide)

Question 33. Dizziness

Answer: D - Epley manoeuvre

Benign paroxysmal positional vertigo - Key Learning

- CFs: Recurrent, transient episodes (<1 minute) of vertigo, triggered by head movement/rolling over etc.
- Diagnosis: Dix-Hallpike - nystagmus + symptoms
- Management- 1st line: Epley manoeuvre. Brandt-Daroff exercises may help.

Question 34. Pruritus

Answer: E - Mebendazole

Threadworm - Key Learning

- Cause: *Enterobius vermicularis* - parasitic worm
- CFs: Perianal itching, worse at night - disturbs sleep
- Investigations: Sticky tape test for microscopy
- Management - 1st line: Single dose Mebendazole

Question 35. Azathioprine

Answer: E - TPMT levels

Crohn's disease - Key Learning

- Autoimmune inflammation of the whole GIT (mouth-anus), skip lesions, transmural.
- CFs: RIF pain, weight loss, diarrhoea, ulcers, perianal disease.
- Endoscopy: cobblestoning.
- Management
 - Flares: **Steroids**.
 - Maintenance - 1st line: Azathioprine, mercaptopurine
 - Assess TPMT enzyme first.

Question 36. Rash

Answer: C - Doxycycline

Lyme disease - Key Learning

- Cause: *Borrelia burgdorferi*
- CFs: **Erythema migrans** (expanding target-like/bullseye rash - circular, central clearing), later arthritis, neurological complications
- Management:
 - PO Doxycycline 100mg BD for 21 days if erythema migrans
 - If focal features/arthritis - Mx guided by specialist

Question 37. SOB

Answer: D – Nifedipine

Pulmonary hypertension - Key Learning

- PAP > 25mmHg at rest → RHF
- CFs: Progressive exertional dyspnoea, peripheral oedema.
- O/E: RV heave, loud P2, pansystolic murmur (TR).
- Investigations: echocardiogram, **right heart catheterisation is diagnostic**
- Management - Perform acute vasodilator testing (AVT):
 - Positive AVT response - CCBs - Nifedipine.

Question 38. Skin changes

Answer: E - Seborrhoeic keratosis

Seborrhoeic keratosis - Key Learning

- Flat or raised warty lesions with stuck on appearance, often occur in groups

Question 39. Deranged LFTs

Answer: E - Transient elastography

NAFLD - Key Learning

- Commonly occurs in context of metabolic syndrome
 - Suspect if persistent transaminitis in context of obesity, dyslipidaemia, diabetes.
- Investigations:
 - Fib-4/NFS score
 - US 1st line imaging
 - Further investigations: **Transient elastography/fibroscan**. Biopsy.

Question 40. JAK-2

Answer: B - Hydroxycarbamide

Essential thrombocythaemia - Key Learning

- Abnormal megakaryocyte proliferation results in thrombocytosis
- 50% JAK-2 mutation
- CFs: Plts > 600, erythromelalgia, MI/stroke, DVT/PE, haemorrhage due to abnormal plt fn.
- Management: Hydroxycarbamide is mainstay of mx, aspirin if low risk.

Question 41. Hot flushes

Answer: D - Sequential combined HRT

HRT rules - Key Learning

- (1) No uterus (hysterectomy) - Oestrogen-only HRT
- (2) Uterus intact but LMP < 1 year ago - Sequential combined HRT
- (3) Uterus intact, LMP > 1 year ago - Continuous combined HRT
- (4) Genitourinary syndrome - 1st line: Low dose vaginal oestrogen

Question 42. Bedwetting

Answer: B - Enuresis alarm

Primary nocturnal enuresis - Key Learning

- Age < 5 - Reassurance and advice.
- Age 5+ (no response to advice/reward system)
 - 1st line: Enuresis alarm (+ reward system).
 - 2nd line: Desmopressin.
- Short-term control (e.g. school trip) - Desmopressin

Question 43. Voices

Answer: E - Quetiapine

Schizophrenia - Key Learning

- CFs:
 - Auditory hallucinations
 - Thought insertion/broadcast/withdrawal
 - Passivity phenom
 - Delusions.
- Management - 1st line: Atypical antipsychotic + therapy
 - Olanzapine, risperidone, quetiapine, amisulpride, aripiprazole

Question 44. Swollen ankles

Answer: D – Prednisolone

Minimal change disease - Key Learning

- **Nephrotic** syndrome in **child** (proteinuria, hypoalbuminaemia, oedema).
- Causes: Hodgkins, EBV, NSAIDs, idiopathic.
- Management: **Steroids**

Question 45. Cough

Answer: C - Oral dexamethasone

Croup - Key Learning

- Cause: Parainfluenza is most common
- Affects children 6/12-3 years of age
- CFs: Prodromal coryza/URTI, harsh, 'seal-like' cough, stridor
- Management:
 - All children: **PO dexamethasone** stat dose
 - Admit all children with moderate/severe croup.
 - Additional mx - Nebulised adrenaline

Question 46. Otagia

Answer: E - Paracetamol

Acute otitis media - Key Learning

- CFs: Otagia, fever, viral symptoms
- Otoscopy: Erythematous, bulging TM.
- Management: Most cases do not need ABx. Prescribe ABx for:
 - (1) Systemically very unwell
 - (2) < 2yrs with bilateral AOM
 - (3) Otorrhoea.
- 1st line: Amoxicillin (pen all: clari/erythro)

Question 47. Rash

Answer: E - Pityriasis Rosea

Pityriasis Rosea - Key Learning

- Cause: HHV-7.
- CFs: Herald patch, followed by appearance of multiple well-demarcated, oval, pink lesions with superficial scale on trunk and proximal limbs.
- Self-limiting.

Question 48. Hair loss

Answer: A - Alopecia areata

Alopecia Areata - Key Learning

- Pathophysiology: Autoimmune, non-scarring alopecia
- CFs:
 - A sudden patch/patches of hair loss affecting the scalp or beard, eyebrows
 - Patches are well-circumscribed, with normal underlying skin
 - Exclamation mark hairs - short hairs, narrow at the base
- Management:
 - If hair regrowth - no treatment is needed
 - If no hair regrowth - consider topical potent steroids (e.g. Betnovate)

Question 49. Hypertension (EMQ 1 of 3)

Answer: E – spironolactone

Question 50. Hypertension (EMQ 2 of 3)

Answer: B – Lisinopril

Question 51. Hypertension (EMQ 2 of 3)

Answer: F – Indapamide

Management of Hypertension - Key Learning

- 1st line: ACEi or CCB
 - If < 55yrs or diabetic (any age/ethnicity) - **ACE inhibitor**
 - If > 55 years OR african-caribbean and not diabetic - **CCB**
- Step 2: If BP remains uncontrolled - add any of ACEi, CCB, TLD (indapamide)
- Step 3: If BP remains uncontrolled - add the third choice of ACEi, CCB, TLD
- Step 4 - Depends on K+:
 - If K+ < 4.5 - add spironolactone.
 - If K+ > 4.5 - add alpha or beta blocker.

Question 52. Menorrhagia

Answer: C - Von Willebrand's disease

Von Willebrand's disease - Key Learning

- Pathology: Impaired platelet adhesion + rapid F8 degradation.
- CFs: Epistaxis, menorrhagia, gingival bleeding.
- Investigations: Slight increase APTT (F8), Prolonged bleeding time.
- Diagnosis: PFA-100 can be used.
- Management: TXA if mild bleeding. Desmopressin surgical prophylaxis.

Question 53. Incontinence

Answer: C - Oxybutynin

Urgency incontinence - Key Learning

- Part of overactive bladder syndrome (frequency, urgency, nocturia) secondary to detrusor overactivity.
- CFs: Sudden, urgent need to pass urine, followed by incontinence.
- Management:
 - Step 1: Bladder training.
 - Step 2:
 - Antimuscarinics - tolterodine, darifenacin, oxybutynin (beware in frail/elderly patients at risk of cognitive/physical decline)
 - OR mirabegron if antimuscs contraindicated

Question 54. Breast cancer

Answer: D - Echocardiogram

Transtuzumab (Herceptin) - Key Learning

- Management of Her2 receptor positive breast cancer.
- Patients should undergo baseline, and then regular echocardiograms due to cardiotoxicity.

Question 55. Overdose

Answer: D - Borderline personality disorder

Borderline PD (EUPD) - Classic Features

- Fears of abandonment
- Unstable & chaotic relationships with friends, family, partners.
- Impulsive behaviour, with a history of self harm

Question 56. Rash

Answer: A - Henoch-Schonlein Purpura

Henoch-Schonlein purpura - Key Learning

- IgA mediated small vessel vasculitis
- CFs:
 - Age 2-10
 - Recent virus/URTI
 - Palpable purpuric rash over extensor
 - Abdominal pain
 - Arthralgia
 - Nephritis

Question 57. Vomiting

Answer: E - Pyloric stenosis

Pyloric stenosis - Key Learning

- CFs: Age 3-8 weeks - projectile vomiting within minutes of feeding.
- O/E: Olive-shaped mass, visible peristalsis post-feed.
- Investigations: US abdomen is modality of choice for diagnosis.
- Management: Ramstedt's pyloromyotomy

Question 58. Rheumatology (1 of 3)

Answer: G - Eosinophilic granulomatosis with polyangiitis

Eosinophilic granulomatosis with polyangiitis - Key Learning

- CFs: Sinusitis, asthma-like symptoms, mononeuritis multiplex
- Antibodies: pANCA

Question 59. Rheumatology (2 of 3)

Answer: D - Kawasaki's disease

Kawasaki's disease - Key Learning

- Child < 5 years with unexplained fever > 5 days
- Strawberry tongue, erythematous lips, injected conjunctiva, desquamation palms/soles
- Invx: Echo monitoring for CA aneurysms
- Management: Aspirin + immunoglobulins

Question 60. Rheumatology (3 of 3)

Answer: C - Polyarteritis nodosa

Polyarteritis nodosa - Key Learning

- CFs: Mononeuritis multiplex, livedo reticularis
- Invx: Commonly Hep B positive, p-ANCA

Question 61. Weakness

Answer: D - Conversion disorder

Conversion Disorder - Key Learning

- Loss of motor or sensory function (not consciously feigned).
- La belle indifference (a paradoxical lack of concern)

Question 62. Pharmacology

Answer: E - Sodium valproate

CYP450 inhibitors - Key Learning

- Clinical significance: Inhibit enzyme activity, decreasing the metabolism of certain drugs, increasing their concentration and therapeutic effect.
- OAAK DEVICES - Omeprazole, Allopurinol, Amiodarone, Ketoconazole, Disulfiram, Erythro/clarithromycin, Valproate, Isoniazid, Ciprofloxacin, Ethanol (acute), Sulfas).

Question 63. AKI

Answer: A - Anti-glomerular basement membrane antibodies

Goodpasture's disease - Key Learning

- Pathology: Anti-GBM antibodies vs T4 collagen in alveoli and kidneys
- Shortness of breath, haemoptysis
- Rapidly progressive GN - nephritic syndrome (haematuria, proteinuria, hypertension and AKI)

Question 64. Cough (EMQ 1 of 3)

Answer: E - Sarcoidosis

Sarcoidosis - Key Learning

- CFs: Polyarthralgia, weight loss, cough, erythema nodosum
- Invx: Raised serum ACE, hypercalcaemia, bilateral hilar lymphadenopathy
- Mx: Steroids

Question 65. Cough (EMQ 2 of 3)

Answer: B - Hypersensitivity pneumonitis (EAA)

Acute hypersensitivity pneumonitis - Key Learning

- Symptoms occur 4-8 hours post exposure - shortness of breath, cough, fever

Question 66. Cough (EMQ 3 of 3)

Answer: H - Silicosis

Silicosis - Key Learning

- Mining/foundry industries
- Upper zone fibrosis + egg-shell calcification of hilar lymph nodes

Question 67. Menopause

Answer: E - Low dose vaginal oestrogen

HRT rules - Key Learning

- (1) No uterus (hysterectomy) - Oestrogen-only HRT
- (2) Uterus intact but LMP < 1 year ago - Sequential combined HRT
- (3) Uterus intact, LMP > 1 year ago - Continuous combined HRT
- (4) Genitourinary syndrome - 1st line: Low dose vaginal oestrogen

Question 68. Abdominal pain

Answer: B - US abdomen pelvis

Appendicitis - Key Learning

- CFs: 10-30 yrs, vague central abdominal pain which migrates to RIF, N&V, anorexia.
- O/E: Guarding/peritonism, Rovsing's sign, Psoas sign.
- Investigation:
 - CT abdomen - high sensitivity.
 - US abdomen - common 1st choice to reduce radiation (children/pregnant patients).
- Management: Laparoscopic appendicectomy.

Question 69. Rash

Answer: D - Prednisolone

Idiopathic thrombocytopenic purpura - Key Learning

- Autoimmune thrombocytopenia caused by IgG Abs vs Plts
- CFs: Non-blanching purpuric, petechial rash esp. UL/LLs, epistaxis, bruising.
- Commonly a history of recent viral infection in children
- Management - 1st line: PO Prednisolone

Question 70. Eye pain

Answer: D - Herpes simplex keratitis

Herpes simplex keratitis - Key Learning

- Aetiology: HSV-1.
- CFs: 90% unilateral. Eye pain, photophobia, tearing, blurred vision.
- O/E: Red eye, fixed, irregular pupil. Vesicles on eyelids. Cloudy cornea.
- Investigations: Fluorescein staining - dendritic ulcer - branching lesions.
- Management: Antivirals

Question 71. Confusion

Answer: C - Serotonin syndrome

Serotonin syndrome - Key Learning

- Causes: SSRIs/MAOIs/Triptans, tramadol
- CFs: Brisk reflexes, dilated pupils, myoclonus, muscle rigidity, fever, tachycardia & HTN.
- Management: IVI, benzodiazepines

Question 72. Asthma

Answer: E - Montelukast

Management of chronic asthma - Key Learning

- 1. SABA
- 2. Add LD ICS - if symptoms 3x/week or night time symptoms
- 3. Add LTRA (montelukast)
- 4. Add LABA (salmeterol, formoterol)
- 5. LD MART
- 6. MD MART

Question 73. Antibodies (EMQ 1 of 3)

Answer: E - Anti-Ro antibodies

Question 74. Antibodies (EMQ 2 of 3)

Answer: B - Anti-Mi-2 antibodies

Question 75. Antibodies (EMQ 3 of 3)

Answer: F - Rheumatoid factor

Antibodies - Key Learning

- Rheumatoid arthritis: Rheumatoid factor, anti-cyclic citrullinated peptide antibodies
- Systemic lupus erythematosus: ANA, anti-dsDNA, anti-smith
- Drug-induced lupus: Anti-histone
- Limited cutaneous systemic sclerosis: Anti-centromere antibodies
- Diffuse cutaneous systemic sclerosis: Anti-SCL-70 antibodies
- Sjogren's syndrome: Anti-Ro (SSA), anti-La (SSB)
- Dermatomyositis: Anti-Mi-2, anti-SRP
- Polymyositis: Anti-Jo-1
- Sharp's syndrome (MCTD): Anti-U1 ribonucleoprotein
- Granulomatosis with polyangiitis: cANCA (PR3)
- Eosinophilic granulomatosis with polyangiitis: pANCA (MPO)
- Goodpasture's: Anti-GBM

Question 76. Urology

Answer: E - Peyronie's disease

Peyronie's disease - Key Learning

- Fibrosis of tunica albuginea causes acquired curvature of penis.
- Most common in the 5th decade of life.
- CFs: Abnormal shortening/curvature of penis, painful erections, impotence, sexual dysfunction.

Question 77. Insomnia

Answer: B - Ropinirole

Restless leg syndrome - Key Learning

- Management: Ropinirole/pramipexole 1st line
 - SEs: Impulse control disorders

Question 78. Headache

Answer: D - Carbamazepine

Trigeminal neuralgia - Key Learning

- CFs: Electric-shock pains, triggered by touch, lasting seconds to minutes
- Management: Carbamazepine

Question 79. Jaundice (EMQ 1 of 3)

Answer: E - Primary biliary cirrhosis

Primary biliary cirrhosis - Key Learning

- CFs: Middle-aged woman with pruritus, jaundice, raised ALP. Association with Sjogren's.
- Antibodies: Anti-mitochondrial ABs (AMA M2), raised IgM.
- Management - 1st Line: Ursodeoxycholic acid

Question 80. Jaundice (EMQ 2 of 3)

Answer: G - Primary sclerosing cholangitis

Primary sclerosing cholangitis - Key Learning

- CFs: Jaundice, pruritus, RUQ pain.
- Associations: ulcerative colitis, HIV.
- pANCA +ve

Question 81. Jaundice (EMQ 3 of 3)

Answer: B - Autoimmune hepatitis

Autoimmune hepatitis - Key Learning

- CFs: Acute hepatitis or insidiously - TATT, amenorrhoea, jaundice.
- Bloods: elevated ALT/AST
- Antibodies:
 - Type 1 - anti-SMA - smooth muscle antibodies
 - Type 2 - children - anti-LKM - anti-Liver Kidney Microsomal antibodies
 - Type 3 - anti-SLA/LP - anti-soluble liver antigen/liver pancreas antibodies
- Management: Prednisolone, immunosuppression, transplant

Question 82. Tired all the time

Answer: D - Imatinib

Chronic myeloid leukaemia - Key Learning

- Genetics: t(9;22), philadelphia chromosome - BCR:ABL gene.
- CFs:
 - Average age 65
 - Weight loss, night sweats, TATT.
- O/E: Splenomegaly.
- Management: **Imatinib** (tyrosine kinase inhibitor).

Question 83. Fever

Answer: D - IV artesunate

Management of Falciparum Malaria - Key Learning

- Uncomplicated - **1st Line: PO Artemether-lumefantrine.**
- Complicated/severe - **1st Line for severe: IV Artesunate**
 - Severe disease is suggested by parasitaemia > 2%, schizonts, cerebral signs, acidosis, hypoglycaemia, Hb < 80, jaundice etc.

Question 84. Lumps & bumps

Answer: D - Neurofibromatosis type 1

Neurofibromatosis type 1 - Key Learning

- NF1 - Mutation on Chr 17:
 - Café au lait spots
 - Axillary freckling
 - Peripheral neurofibromas
 - Pheochromocytoma

Question 85. Vacant episodes

Answer: B - Ethosuximide

Absence seizures - Key Learning

- 1st Line: Ethosuximide
- 2nd line: Sodium valproate (except women of CB potential).

Question 86. Headaches

Answer: C - PO labetalol

Pre-eclampsia - Key Learning

- Hypertension + proteinuria during pregnancy
- CFs: Headache, abdominal pain, visual disturbance, papilloedema, peripheral oedema
- Management:
 - **Aspirin** 75-150 mg OD.
 - If BP > 160/110 - Anti-hypertensives - 1st line = PO **Labetalol**
 - If severe pre-eclampsia or eclampsia - IV **magnesium sulfate**.

Question 87. Rash

Answer: B - Dermatitis herpetiformis

Dermatitis herpetiformis - Key Learning

- IgA deposition in the dermis in patients with **coeliac disease** (90%).
- CFs:
 - Intensely pruritic papular rash on buttocks, extensor surfaces of knees and elbows.
 - Clusters of vesicles.
- Management: Gluten-free diet.

Question 88. Urinary symptoms

Answer: B - Tamsulosin

Benign prostate hyperplasia - Key Learning

- CFs: Voiding symptoms (SHIT), storage symptoms (nocturia, frequency, urgency).
- O/E: Enlarged, smooth, symmetrical prostate.
- Management:
 - Voiding symptoms - 1st Line: Tamsulosin (Alpha blocker).
 - Prostatic enlargement - 1st Line: Finasteride (5 alpha reductase inhibitor).
 - Surgical - TURP.

Question 89. Joint pains

Answer: A - Adult-onset Still's Disease

Adult-onset Still's Disease - Key Learning

- CFs: Fever, arthralgia of knees/wrists/ankles, maculopapular salmon rash.
- Investigations: High ferritin, CRP.
- Management:
 - Acute - NSAIDs and corticosteroids 1st line
 - Long-term Mx with DMARDs

Question 90. Breathlessness

Answer: D - Pneumonia

Exudative pleural effusion - Key Learning

- Pleural fluid protein > 30
 - EXudate - EXcess Protein.
- Causes: inflammatory processes - pneumonia, TB, autoimmune (RA), lung cancer, pancreatitis.

Question 91. Side effects

Answer: D - Carbimazole

Drug-induced Agranulocytosis - Key Learning

- Causes include the 5 C's of agranuloCytosis
 - Carbamazepine
 - Carbimazole
 - Co-trimoxazole
 - Clozapine
 - Cytotoxics (MTX)

Question 92. Tremor

Answer: A - Propylthiouracil

Management of thyrotoxicosis in pregnancy - Key Learning

- 1st trimester: Propylthiouracil (due to teratogenic risk with carbimazole).
- Then in 2nd & 3rd trimester: Switch to carbimazole (hepatotoxic risk with PTU).

Question 93. Early satiety

Answer: B - Check serum CA125 concentration

Ovarian Cancer - Key Learning

- Suspect if persistent abdominal bloating, early satiety, abdominal pain, urinary frequency/urgency, symptoms of IBS in a woman > 50 yrs.
- Investigations & Management:
 - If ascites/mass - refer via 2 WW.
 - If normal examination - measure CA125 level.
 - If CA125 level high (>35) - urgent US abdomen/pelvis.

Question 94. Pregnancy

Answer: E - Insulin

Gestational diabetes mellitus - Key Learning

- OGTT at 24-28 weeks (and at booking if RFs).
- Diagnosis (5, 6, 7, 8)
 - FBM > 5.6
 - OGTT > 7.8
- Management depends on fasting BM:
 - FBM < 7 (1) Diet/exercise (2) Metformin (3) Insulin therapy.
 - FBM > 7 (or >6.1 and complicated pregnancy) (1) Insulin therapy.

Question 95. Loss of vision

Answer: C - Central retinal vein occlusion

Central retinal vein occlusion - Key Learning

- CFs: Sudden, painless LOV.
- Fundoscopy: **Retinal haemorrhages.**

Question 96. Hearing loss

Answer: C - Vestibular schwannoma

Vestibular schwannoma - Key Learning

- Benign tumour of schwann cells, most common at cerebellopontine angle.
- CFs: Progressive, unilateral SNHL +/- tinnitus, vertigo.
- Investigation: MRI of internal auditory meatus.
- Management: Most are managed conservatively with monitoring.

Question 97. Pharmacology

Answer: E - HLA-B*5801 testing

Allopurinol - Key Learning

- Screen for HLA-B*5801 allele in high risk groups (African-Americans/Asian ethnicities) due to high risk of dermatological complications (SJS/TENS).