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**Table of content (Click to jump to chapter)**

[**Chapter 1 Endocrinology** 2](#_Toc206105517)

[**Chapter 2 Gastroenterology** 19](#_Toc206105518)

[**Chapter 3 Cardiology** 34](#_Toc206105519)

[**Chapter 4 Infectious Diseases** 62](#_Toc206105520)

[**Chapter 5 Clinical Pharmacology** 81](#_Toc206105521)

[**Chapter 6 Clinical Sciences** 108](#_Toc206105522)

[**Chapter 7 Respiratory** 148](#_Toc206105523)

[**Chapter 8 Rheumatology** 165](#_Toc206105524)

[**Chapter 9 Dermatology** 177](#_Toc206105525)

[**Chapter 10 Nephrology** 191](#_Toc206105526)

[**Chapter 11 Psychiatry** 202](#_Toc206105527)

[**Chapter 12 Ophthalmology** 208](#_Toc206105528)

[**Chapter 13 Neurology** 214](#_Toc206105529)

## **Chapter 1 Endocrinology**

Q1. What is the mode of inheritance of haemochromatosis?

**A- Autosomal recessive**

B- X-linked dominant

C- Mitochondrial inheritance

D- Autosomal dominant

E- X-linked recessive

Q2. A 30-year-old woman who is investigated for obesity, hirsutism and oligomenorrhoea is diagnosed as having polycystic ovarian syndrome (PCOS) following an ultrasound scan. She is hoping to start a family and her doctor starts metformin to try and improve her fertility. What is the mechanism of action of metformin in PCOS?

A- Stimulates the release of insulin from the pancreas

B- Blocks the insulin mediated development of multiple immature follicles in the ovaries

**C- Increases peripheral insulin sensitivity**

D- Blocks the conversion of oestradiol to testosterone

E- Increases hepatic gluconeogenesis

Q3. A 40-year-old woman complains of feeling tired all the time and putting on weight. On examination a diffuse, non-tender goitre is noted. Blood tests are ordered: TSH 15.1 mU/l Free T4 7.1 pmol/l ESR 14 mm/hr Anti-TSH receptor stimulating antibodies Negative Anti-thyroid peroxidase antibodies Positive What is the most likely diagnosis?

A- Pituitary failure

B- Primary atrophic hypothyroidism

C- De Quervain's thyroiditis

**D- Hashimoto's thyroiditis**

E- Grave's disease

Q4. A 24-year-old woman is found to have a blood pressure of 170/100 mmHg during a routine medical check. She is well and clinical examination is unremarkable. Blood tests show: Na+ 140 mmol/l K + 2.6 mmol/l Bicarbonate 31 mmol/l Urea 3.4 mmol/l Creatinine 77 µmol/l Which ne of the following investigations is most likely to be diagnostic?

A- Renal ultrasound

B- Overnight dexamethasone suppression test

**C- Renin:aldosterone ratio**

D- MR angiography

E- 21-hydroxylase estimation

Q5. A 49-year-old man with type 2 diabetes mellitus is reviewed. Despite weight loss and therapy with metformin and gliclazide his last HbA1c is 7.2%. Which one of the following factors would suggest that the patient may benefit from a meglitinide?

A- Obesity

B- Not adhering to diabetic diet

C- Problems with hypoglycaemia from gliclazide

**D- Erratic lifestyle**

E- Elderly and frail patients

Q6. Which of the following statements is true regarding the pathophysiology of diabetes mellitus?

**A- Concordance between identical twins is higher in type 2 diabetes mellitus than type 1**

B- Patients with type 1 diabetes mellitus are rarely HLA-DR4 positive

C- Type 2 diabetes mellitus is associated with HLA-DR3

D- Haemochromatosis is an example of primary diabetes

E- Type 1 diabetes mellitus is thought to be inherited in an autosomal dominant fashion

Q7. Which one of the following is least characteristic of Addison's disease?

A- Hypoglycaemia

**B- Metabolic alkalosis**

C- Hyponatraemia

D- Hyperkalaemia

E- Positive short ACTH test

Q8. A 62-year-old man who had a myocardial infarction six months ago presents for review. What should his target cholesterol levels be?

A- Total cholesterol < 3.5 mmol/l; LDL < 1.5 mmol/l

**B- Total cholesterol < 4.0 mmol/l; LDL < 2.0 mmol/l**

C- Total cholesterol:HDL ratio < 5.0 mmol/l

D- Total cholesterol:HDL ratio < 4.0 mmol/l

E- Total cholesterol < 5.0 mmol/l; LDL < 3.0 mmol/l

Q9. A 49-year-old woman is investigated for thyrotoxicosis. On examination she is noted to have a goitre containing multiple irregular nodules. Nuclear scintigraphy with technetium 99m reveals patchy uptake. What is the treatment of choice?

A- Corticosteroids

**B- Radioiodine**

C- Block-and-replace regime

D- Surgery

E- Anti-thyroid drug titration regime

Q10. A 52-year-old woman with suspected diabetes mellitus has an oral glucose tolerance test, following the standard WHO protocol. The following results are obtained: Time (hours) Blood glucose (mmol/l) 0 5.9 2 8.4 How should these results be interpreted?

A- Impaired fasting glucose and impaired glucose tolerance

B- Normal

C- Diabetes mellitus

**D- Impaired glucose tolerance**

E- Impaired fasting glucose

Q11. A 45-year-old female is admitted to the Emergency Department with abdominal pain associated with vomiting. She has a past medical history of hypothyroidism and takes thyroxine. On examination she is pyrexial at 37.6ºC. Pulse is 110 bpm with a blood pressure of 100/64 mmHg. Blood results show the following: Na+ 131 mmol/l K + 4.9 mmol/l Urea 8.1 mmol/l Creatinine 110 µmol/l Glucose 3.3 mmol/l What treatment should be given first?

A- Ceftriaxone + benzylpenicillin

B- Glucagon

C- Propranolol

D- Triiodothyronine

**E- Hydrocortisone**

Q12. A 55-year-old woman with type 2 diabetes mellitus is reviewed. A decision is made to start thiazolidinedione therapy. Which one of the following points is it most relevant to consider before starting treatment?

A- History of oesophageal problems

**B- Fracture risk**

C- History of depression

D- History of cardiac arrhythmias

E- Visual acuity

Q13. Which one of the following conditions may cause hypokalaemia in association with hypertension?

A- Gitelman syndrome

B- 21-hydroxylase deficiency

C- Bartter's syndrome

D- Phaeochromocytoma

**E- 11-beta hydroxylase deficiency**

Q14. Which one of the following statements regarding NICE guidance on the primary prevention of cardiovascular disease is incorrect? therapy 1.5

A- Premature coronary heart disease is defined as < 65 years in females

**B- A 10-year risk of 15% is used to identify patients who should be considered for lipid-lowering**

C- Simvastatin 40mg on is the first line treatment in patients with a significant risk

D- The 1991 Framingham equations are still recommended for calculating risk

E- If a patient has a first degree relative with premature heart disease the risk should be multiplied by

Q15. A 41-year-old woman presents with palpitations and heat intolerance. On examination her pulse is 90/min and a small, diffuse goitre is noted which is tender to touch. Thyroid function tests show the following: Free T4 24 pmol/l TSH < 0.05 mu/l What is the most likely diagnosis?

A- Grave's disease

B- Sick thyroid syndrome

**C- De Quervain's thyroiditis**

D- Hashimoto's thyroiditis

E- Toxic multinodular goitre

Q16. A 45-year-old woman presents with weight gain and recurrent 'dizzy' episodes. Over the past four months she has gained 20 kg. The episodes occur on an almost daily basis and are characterised by blurred vision, sweating, headaches and palpitations. Her GP checked a blood sugar during one of these episodes which was record as being 1.4 mmol/l. What is the single most useful test?

A- Glucagon stimulation test

B- Oral glucose tolerance test with growth hormone measurements

**C- Insulin + C-peptide levels during a hypoglycaemic episode**

D- Short ACTH test

E- Insulin tolerance test

Q17. You review a 70-year-old who has a long past medical history and is on multiple drugs. He has developed excessive amounts of breast tissue bilaterally. Which one of the following drugs is most likely to be responsible?

A- Tamoxifen

B- Terbinafine

C- Amiodarone

**D- Goserelin (Zoladex)**

E- Lymecycline

Q18. An obese man presents as he is concerned about his risk of developing cardiovascular disease. Which one of the following sets of results would suggest a diagnosis of the metabolic syndrome using the Scottish Intercollegiate Guidelines Network (SIGN) criteria?

A- Waist circumference = 98 cm; fasting glucose = 7.2 mmol/l; HDL = 1.2 mmol/l

B- Triglycerides = 2.0 mmol/l; HDL = 1.2 mmol/l; fasting glucose = 5.4 mmol/l

C- Blood pressure = 140/90 mmHg; waist circumference = 90 cm; HDL = 1.4 mmol/l

**D- Waist circumference = 110 cm; fasting glucose = 5.8 mmol/l; HDL = 0.8 mmol/l**

E- LDL = 3.0 mmol/l; blood pressure = 130/80; fasting glucose = 6.4 mmol/l

Q19. Each one of the following is associated with Pendred's syndrome, except:

A- Goitre

**B- Short 4th and 5th metacarpals**

C- Autosomal recessive inheritance

D- Sensorineural deafness

E- Euthyroid status

Q20. A 62-year-old man is investigated for hypertension and proximal myopathy. On examination he is noted to have abdominal striae. Which one of the following is most associated with ectopic ACTH secretion?

A- Carcinoid tumour

**B- Small cell lung cancer**

C- Cardiac myxoma

D- Squamous cell lung cancer

E- Adrenal carcinoma

Q21. Which one of the following combinations of treatments should be avoided in patients with type 2 diabetes mellitus?

**A- Metformin + insulin + exenatide**

B- Sulfonylurea + DPP-4 inhibitor

C- Metformin + sulfonylurea + exenatide

D- Metformin + DPP-4 inhibitor

E- Insulin + metformin + sulfonylurea

Q22. A 56-year-old man is reviewed in the Cardiology outpatient clinic following a myocardial infarction one year previously. During his admission he was found to be hypertensive and diabetic. He complains that he has put on 5kg in weight in the past 6 months. Which of his medications may be contributing to his weight gain?

A- Metformin

B- Losartan

C- Clopidogrel

**D- Gliclazide**

E- Simvastatin

Q23. A 55-year-old accountant with type 2 diabetes mellitus comes for review. When he was diagnosed 12 months ago he was started on metformin and the dose was titrated up. His IFCC-HbA1c one year ago was 75 mmol/mol (DCCT-HbA1c 9%) and is now 69 mmol/mol (8.5%). His body mass index is 33 kg/m². What is the most appropriate next step in management?

A- Add exenatide

B- Add sitagliptin

**C- Add glipizide**

D- Make no changes to his medication

E- Add pioglitazone

Q24. Which one of the following is most likely to be found in a patient with Hashimoto's thyroiditis?

A- Raised ESR

B- Anti-TSH receptor stimulating antibodies

**C- Anti-thyroid peroxidase antibodies**

D- Decreased TSH

E- Co-existing type 2 diabetes mellitus

Q25. Each one of the following is associated with autoimmune polyendocrinopathy syndrome type 1, except:

A- Chronic mucocutaneous candidiasis

B- Addison's disease

**C- Primary hyperparathyroidism**

D- Autosomal recessive inheritance

E- A mutation of the AIRE1 gene on chromosome 21

Q26. A 49-year-old woman with type 2 diabetes mellitus is being considered for exenatide therapy. Which one of the following is not part of the NICE criteria for starting or continuing this drug?

A- BMI > 35 kg/m^2

B- Greater than 1.0 percentage point HbA1c reduction after 6 months

**C- Has failed with insulin therapy**

D- Has type 2 diabetes mellitus

E- Weight loss > 3% at 6 months

Q27. A 20-year-old man presents with a nine month history of weight gain. Prior to this he was of a normal weight and cannot identify any obvious lifestyle changes that would account for his obesity. On examination he is noted to have abdominal striae and a degree of proximal myopathy. Blood pressure is 130/80 mmHg. Bloods show the following: Na+ 141 mmol/l K + 3.3 mmol/l Bicarbonate 26 mmol/l Urea 3.3 mmol/l Creatinine 72 µmol/l What is the most appropriate test to confirm the diagnosis?

A- High-dose dexamethasone suppression test

B- Plasma ACTH

C- Short ACTH test

**D- 24 hour urinary free cortisol**

E- Renin:aldosterone ratio

Q28. Which one of the following drugs used in the management of type 2 diabetes mellitus has the Medicines and Healthcare products Regulatory Agency warned is associated with an increased risk of severe pancreatitis and renal impairment?

A- Rosiglitazone

B- Metformin

C- Acarbose

**D- Exenatide**

E- Sitagliptin

Q29. Which one of the following regarding the management of thyroid problems during pregnancy is incorrect? when treating thyrotoxicosis

A- Maternal free thyroxine levels should be kept in the upper third of the normal reference range

B- Increased levels of thyroxine-binding globulin are seen in pregnancy

**C- Block-and-replace is preferable in pregnancy compared to antithyroid drug titration**

D- Breast feeding is safe whilst on thyroxine

E- Untreated thyrotoxicosis increases the risk of premature labour

Q30. A 53-year-old man with a history of type 2 diabetes mellitus is reviewed in the diabetes clinic. Twelve months ago his HbA1c was 9.7% despite maximal oral hypoglycaemic therapy. Insulin was started and his most recent HbA1c is 8.2%. He is considering applying for a HGV licence and asks for advice. What is the most appropriate advice?

A- He cannot drive a heavy goods vehicle if he is taking insulin

**B- He may be able to apply for a HGV licence if he meets strict criteria relating to hypoglycaemia**

C- He should stop insulin and start meglitinide

D- As under 55 years of age there is no requirement to inform the DVLA

E- He needs to have been stable on insulin for at least 5 years before applying

Q31. What is the most appropriate screening investigation to exclude a phaeochromocytoma?

A- Ultrasound adrenals

B- Phenoxybenzamine suppression test

C- 24 hour urinary collection of vanillylmandelic acid

**D- 24 hour urinary collection of catecholamines**

E- Plasma adrenaline (morning)

Q32. Which one of the following types of bariatric surgery is most likely to cause significant malabsorption?

A- Laparoscopic-adjustable gastric banding

B- Roux-en-Y gastric bypass surgery

**C- Biliopancreatic diversion with duodenal switch**

D- Sleeve gastrectomy

E- Intragastric balloon

Q33. A 48-year-old man who was diagnosed with type 2 diabetes mellitus presents for review. During his annual review he was noted to have the following results: Total cholesterol 5.3 mmol/l HDL cholesterol 1.0 mmol/l LDL cholesterol 3.1 mmol/l Triglyceride 1.7 mmol/l HbA1c 6.4% His current medication is metformin 500mg tds. According to recent NICE guidelines, what is the most appropriate action?

**A- Simvastatin 40mg on**

B- Lifestyle advice, repeat lipid profile in 3 months

C- Nicotinic acid

D- Atorvastatin 40mg on

E- Increase his metformin slowly to 1g tds

Q34. An 24-year-old woman is reviewed due to facial hirsutism. You suspect a diagnosis of polycystic ovarian syndrome (PCOS). Which one of the following features would suggest the need for further investigations before confidently making a diagnosis of PCOS?

**A- Clitoromegaly**

B- Acanthosis nigricans

C- Obesity

D- Amenorrhoea

E- Acne

Q35. Which of the following secondary causes of hyperlipidaemia result in predominantly hypercholesterolaemia, as opposed to hypertriglyceridaemia?

**A- Hypothyroidism**

B- Obesity

C- Liver disease

D- Bendrofluazide

E- Chronic renal failure

Q36. A 65-year-old man known to have a carcinoid tumour of the appendix is found to have hepatic metastases. If the patient develops carcinoid syndrome, which one of the following symptoms is most likely to occur first?

**A- Facial flushing**

B- Headache

C- Vomiting

D- Diarrhoea

E- Palpitations

Q37. Which one of the following statements regarding the management of diabetes mellitus during pregnancy is incorrect?

A- A previous macrosomic baby is a risk factor for gestational diabetes

B- Diabetes complicates around 1 in 40 pregnancies

C- A higher dose of folic acid (5 mg/day) should be used

**D- Metformin is contraindicated**

E- Tight glycaemic control reduces complication rates

Q38. Each one of the following is a cause of nephrogenic diabetes insipidus, except:

**A- Hypocalcaemia**

B- Sickle-cell anaemia

C- Lithium

D- Hypokalaemia

E- Demeclocycline

Q39. A 25-year-old man with a family history of multiple endocrine neoplasia type 1 is reviewed in clinic. What is the single most useful investigation to monitor such patients?

A- Short synacthen test

B- Urinary catecholamines

**C- Serum calcium**

D- Thyroid function tests

E- Serum prolactin

Q40. A 23-year-old woman is diagnosed with Graves' disease. Which one of the following statements regarding treatment is correct? regime

**A- Block-and-replace regimes are usually of a shorter duration than carbimazole titration therapy**

B- Concurrent administration of propranolol and carbimazole should be avoided

C- Patients on block-and-replace regimes have fewer side-effects than those using titration therapy

D- Carbimazole should be started at no higher than 10mg/day for patients commencing a titration

E- In the block-and-replace regime levothyroxine should be started at the same time as carbimazole

Q41. A 30-year-old female is started on carbimazole 20mg bd following a diagnosis of Grave's disease. What is the best biochemical marker to assess her response to treatment?

A- Total T4

**B- TSH**

C- Free T4

D- ESR

E- Free T3

Q42. A 54-year-old man with type 2 diabetes mellitus is reviewed in clinic. He is currently taking pioglitazone, metformin, aspirin and simvastatin. Which one of the following problems is most likely to be caused by pioglitazone?

A- Photosensitivity

B- Thrombocytopaenia

C- Myalgia

**D- Peripheral oedema**

E- Hyponatraemia

Q43. A 52-year-old has a fasting lipid profile checked as part of an annual occupational health check. Combined with his blood pressure and current smoking status his 10-year risk of cardiovascular disease is calculated to be 23% percent. Following appropriate counselling he chooses to start simvastatin 40mg on. What should his target cholesterol be?

A- Total cholesterol:HDL ratio < 5

B- Total cholesterol < 5 mmol/l

**C- Target cholesterol is inappropriate in this situation**

D- Total cholesterol < 4 mmol/l

E- Total cholesterol:HDL ratio < 4

Q44. A 35-year-old man is investigated for lethargy, arthralgia and deranged liver function tests. He is eventually diagnosed as having hereditary hemochromatosis. His wife has a genetic test which shows she is not a carrier of the disease. What is the change his child will develop haemochromatosis?

**A- 0%**

B- 25%

C- 50% if female, 0% if male

D- 50% if male, 0% if female

E- 50%

Q45. Which one of the following increases the risk of developing peripheral oedema in a patient taking pioglitazone?

A- Concomitant use with gliclazide

B- Serum sodium < 140 mmol/l

**C- Concomitant use with insulin**

D- Concomitant use with metformin

E- Serum potassium < 4.0 mmol/l

Q46. A 50-year-old man who is known to have obesity and hypertension comes for review. His current BMI is 38 kg/m^2 and blood pressure today is 154/92 mmHg despite ramipril and bendroflumethiazide. Lifestyle and a trial of orlistat have failed to reduce his weight. Which one of the following is the most suitable intervention?

A- Biliopancreatic diversion with duodenal switch

**B- Laparoscopic-adjustable gastric banding**

C- Trial of sibutramine

D- Referral for counselling to discuss his excessive eating

E- Sleeve gastrectomy

Q47. Which one of the following statements regarding dipeptidyl peptidase-4 inhibitors in the management of type 2 diabetes mellitus is correct?

A- Metformin should always be co-prescribed

**B- Do not cause weight gain**

C- Is given via a subcutaneous injection

D- An example is exenatide

E- Patients should be warned that hypoglycaemia is the most common side-effect

Q48. A 4-year-old boy is being investigated for failure to thrive and generalised weakness. His blood pressure is normal. The following blood results are obtained: Na+ 137 mmol/l K + 3.0 mmol/l Urea 4.5 mmol/l Creatinine 65 µmol/l Bicarbonate 33 mmol/l What is the most likely diagnosis?

A- Conn's syndrome

**B- Bartter's syndrome**

C- Cushing's syndrome

D- 21-hydroxylase deficiency

E- Liddle's syndrome

Q49. A 29-year-old woman has just found out she is pregnant for the second time. Her first pregnancy was complicated by gestational diabetes. Following her first pregnancy she was told she was no longer diabetic. What is the most appropriate management?

A- Start insulin

B- Start metformin and do oral glucose tolerance test at 12-14 weeks

C- Do oral glucose tolerance test at booking visit

**D- Do oral glucose tolerance test at 16-18 weeks**

E- Do fasting glucose at booking visit

Q50. A 55-year-old female is reviewed in the diabetes clinic. The following results are obtained: Urinalysis protein + HbA1c 10.0% What average blood glucose level for the past 2 months is this most likely to represent?

A- 9

B- 10

C- 11

**D- 15**

E- There is no relation between HbA1c and average blood glucose

Q51. A middle-aged man with type 2 diabetes mellitus is reviewed. Despite weight loss, metformin and gliclazide his HbA1c is 8.4%. The patient agrees to start insulin therapy. According to NICE guidelines which type of insulin should be tried initially?

A- Basal bolus regime

**B- Isophane**

C- Biphasic insulin

D- Glargine

E- Detemir

Q52. Which one of the following is least associated with gynaecomastia?

A- Klinefelter's syndrome

B- Seminoma

C- Liver disease

D- Puberty

**E- Hypothyroidism**

Q53. A 54-year-old man has a routine medical for work. He is asymptomatic and clinical examination is unremarkable. Which of the following results establishes a diagnosis of impaired fasting glucose?

A- Fasting glucose 7.1 mmol/L on one occasion

**B- Fasting glucose 6.8 mmol/L on two occasions**

C- Glycosuria ++

D- 75g oral glucose tolerance test 2 hour value of 8.4 mmol/L

E- HbA1c of 6.7%

Q54. A 54-year-old obese man presents with lethargy and polyuria. A fasting blood sugar is requested: Fasting glucose 8.4 mmol/l He is given dietary advice and a decision is made to start metformin. What is the most appropriate prescription? 500mg tds for 20 days then review

A- Metformin 500mg od with food for 5 days then metformin 500mg bd for 5 days then metformin

B- Metformin 500mg tds with food

**C- Metformin 500mg od with food for 14 days then metformin 500mg bd for 14 days then review**

D- Metformin 1g tds with food

E- Metformin 500mg tds taken at least 1 hour before meals

Q55. A 61-year-old man presents as he developed enlargement of his breast tissue. He has become very self-conscious and is worried about going on holiday in the summer. Which one of the following drugs is most likely to be responsible?

A- Amitriptyline

B- Isoniazid

C- Verapamil

D- Methyldopa

**E- Spironolactone**

Q56. A 56-year-old Muslim man with a history of type 2 diabetes asks for advice. He is due to start fasting for Ramadan soon and is unsure what he should do with regards to his diabetes medications. He currently takes metformin 500mg tds. What is the most appropriate advice?

A- Switch to subcutaneous biphasic insulin for the duration of Ramadan

**B- 500 mg at the predawn meal + 1000 mg at the sunset meal**

C- No change to the metformin dose

D- 1000 mg at the predawn meal + 500 mg at the sunset meal

E- Stop metformin for the duration of Ramadan

Q57. Which one of the following features is least associated with primary hyperparathyroidism?

A- Depression

B- Polydipsia

**C- Sensory loss**

D- Peptic ulceration

E- Hypertension

Q58. A 51-year-old woman is reviewed in the diabetes clinic. She was diagnosed with type 2 diabetes mellitus 12 months ago and still has poor glycaemic control. She has recently had to stop taking gliclazide due to repeated episodes of hypoglycaemia and is only taking maximum dose metformin. Her BMI is 26 kg/m2 . What is the most appropriate next step in management?

**A- Add either a thiazolidinedione or a DPP-4 inhibitor**

B- Refer her for a laparoscopic gastric band

C- Refer her for insulin therapy

D- Add either a thiazolidinedione or exenatide

E- Add either a DPP-4 inhibitor or exenatide

Q59. A 62-year-old male with a history of type 2 diabetes mellitus is investigated for lethargy. Blood tests are as follows: Na+ 139 mmol/l K + 4.2 mmol/l Bicarbonate 15 mmol/l Chloride 105 mmol/l Urea 15.2 mmol/l Creatinine 267 µmol/l Glucose 9.2 mmol/l Which one of the following is most likely to be contributing to the low bicarbonate value?

A- Vomiting due to gastroparesis

B- Renal tubular acidosis

C- Addison's disease

**D- Metformin**

E- Rosiglitazone

Q60. A 53 year man presents as his wife has noticed a change in his appearance. He has also noticed his hands seem larger. On examination blood pressure is 170/94 and he is noted to have bitemporal hemianopia. What is the most appropriate first-line treatment?

A- Octreotide

B- External irradiation

C- Pegvisomant

**D- Trans-sphenoidal surgery**

E- Bromocriptine

Q61. A 43-year-old man is admitted to hospital with pneumonia. His past medical history includes Addison's disease for which he takes hydrocortisone (20mg in the mornings and 10mg in the afternoon). What is the most appropriate action with respect to his steroid dose?

A- Continue to take the same dose

**B- Double hydrocortisone to 40mg mornings and 20mg afternoon**

C- Halve hydrocortisone to 10mg mornings and 5mg afternoon

D- Continue to take the same dose + prescribe a proton pump inhibitor

E- Continue the same morning dose + stop the afternoon dose

Q62. What causes increased sweating in patients with acromegaly?

A- Increased sodium content in sweat

B- Raised basal metabolic rate

C- Episodic hypoglycaemia

D- Low-grade chronic pyrexia

**E- Sweat gland hypertrophy**

Q63. A 46-year-old woman is referred to endocrine with a tender neck swelling. Blood results are as follows: TSH <0.1 mU/l T4 188 nmol/l Hb 14.2 g/dl Plt 377 \* 109 /l WBC 6.4 \* 109 /l ESR 65 mm/hr Technetium thyroid scan shows decreased uptake globally What is the most likely diagnosis?

A- Sick thyroid syndrome

B- Acute bacterial thyroiditis

C- Hashimoto's thyroiditis

**D- Subacute thyroiditis**

E- Toxic multinodular goitre

Q64. A 68-year-old woman is found to have the following blood tests: TSH 0.05 mu/l Free T4 19 pmol/l (range 9-25 pmol/l) Free T3 7 pmol/l (range 3-9 pmol/l) If left untreated, what are the most likely possible consequences?

**A- Supraventricular arrhythmias and osteoporosis**

B- Supraventricular arrhythmias and hyperlipidaemia

C- Hypothyroidism and impaired glucose tolerance

D- Myasthenia gravis and hypothyroidism

E- Impaired glucose tolerance and hyperlipidaemia

Q65. Which one of the following is a recognised cause of hypokalaemia associated with hypertension

**A- Liddle's syndrome**

B- Bartter's syndrome

C- Gitelman syndrome

D- Ciclosporin

E- Renal tubular acidosis

Q66. Which one of the following statements regarding maturity-onset diabetes of the young (MODY) is true?

**A- There is usually a strong family history**

B- Body mass index is typically > 30

C- Doesn't respond to glimepiride

D- Autosomal recessive inheritance

E- Frequent episodes of diabetic ketoacidosis are typical

Q67. A 45-year-old woman is investigated for weight gain. She had had been unwell for around four months and described a combination of symptoms including depression, facial male-pattern hair growth and reduced libido. During the work-up she was found to be hypertensive with a blood pressure of 170/100 mmHg. Which one of the following tests is most likely to be diagnostic?

A- Renin:aldosterone levels

B- High-dose dexamethasone suppression test

C- Pelvic ultrasound

**D- Overnight dexamethasone suppression test**

E- 24 hr urinary free cortisol

Q68. A 36-year-old woman presents with feeling tired and cold all the time. On examination a firm, non-tender goitre is noted. Blood tests reveal the following: TSH 24.2 mU/l Free T4 5.4 pmol/l What is the most likely diagnosis?

A- Primary atrophic hypothyroidism

B- Pituitary failure

C- De Quervain's thyroiditis

D- Iodine deficiency

**E- Hashimoto's thyroiditis**

Q69. A 71-year-old woman with a history of type 2 diabetes mellitus presents with lethargy and polyuria. A diagnosis of hyperosmolar hyperglycaemic state is considered. Which one of the following findings would be least consistent with this diagnosis?

A- pH of 7.38

B- Ketones 1+ in urine

**C- Serum osmolality of 310 mosmol/kg**

D- Serum bicarbonate of 19 mmol/l

E- Glucose of 45 mmol/l

Q70. In patients with suspected insulinoma, which one of the following is considered the best investigation?

A- Oral glucose tolerance test

B- Insulin tolerance test

C- Early morning C-peptide levels

D- Glucagon stimulation test

**E- Supervised fasting**

Q71. A 54-year-old woman presents to the Emergency Department with confusion and fever. She has a past history of thyrotoxicosis previously treated with radioiodine therapy. On examination she has a pulse of 120/min regular, blood pressure 150/90 mmHg, temperature of 39.1ºC and a respiratory rate of 18/min. Examination of the cardiorespiratory system is unremarkable and urine dipstick is clear. Blood results showed the following: Free T4 84 pmol/l (normal range 10-22 pmol/l) Free T3 29 pmol/l (2.5-5.5 pmol/l) TSH < 0.01 mU/l (0.5-4.0 mU/l) Which one of the following does not have a role in the subsequent management?

A- Lugol's iodine

B- Propranolol

C- Propylthiouracil

**D- Bicarbonate**

E- Dexamethasone

Q72. A diabetic man is diagnosed as having painful diabetic neuropathy in his feet. He has no other medical history of note. What is the most suitable first-line treatment to relieve his pain?

**A- Duloxetine**

B- Gabapentin

C- Carbamazepine

D- Referral to pain management clinic

E- Pregabalin

Q73. A 46-year-old man presents as he is concerned about reduced libido, erectile dysfunction and excessive thirst. His wife also reports that he has 'no energy' and is generally listless. During the review of systems he also complains of pains in both hands. Which one of the following investigations is most likely to reveal the diagnosis?

**A- Ferritin**

B- Testosterone

C- Cortisol

D- Blood glucose

E- Prolactin

Q74. A 64-year-old man with a history of type 2 diabetes mellitus is admitted with chest pain to the Emergency Department. An ECG shows ST elevation in the anterior leads and he is thrombolysed and transferred to the Coronary Care Unit (CCU). His usual medication includes simvastatin, gliclazide and metformin. How should his diabetes be managed whilst in CCU?

A- Stop metformin + continue gliclazide at a higher dose

B- Subcutaneous insulin: basal-bolus regime

C- Continue metformin + gliclazide at same dose

**D- Intravenous insulin + stop metformin**

E- Subcutaneous insulin: biphasic insulin regime

Q75. An 18-year-old girl is admitted to the Emergency Department with an episode of sweating and dizziness. She is brought in by her father who has type 2 diabetes mellitus as he is worried she may be diabetic. He describes a number of similar episodes for the past two weeks. Her BM on admission is 1.9 mmol/l so the following bloods are taken: Plasma glucose 1.8 mmol/l Insulin 15 mg/ml (6-10 mg/ml) Proinsulin 22% (22-24%) What is the most likely diagnosis?

C-peptide 0.15 nmol/l (0.2-0.4 nmol/l)

A- Diabetes mellitus

B- Insulinoma

C- Nesidioblastosis

**D- Insulin abuse**

E- Sulfonylurea abuse

Q76. A 15-year-old girl is investigated for primary amenorrhoea, despite having developed secondary sexual characteristics at 11 years of age. On examination she has well developed breasts with scanty pubic hair and small bilateral groin swellings. What is the most likely diagnosis?

A- Congenital adrenal hyperplasia

B- Polycystic ovarian syndrome

C- Turner's syndrome

**D- Complete androgen insensitivity syndrome**

E- Mullerian duct agenesis

Q77. What is the mechanism of action of thiazolidinediones?

A- PPAR-gamma receptor antagonist

B- PPAR-alpha receptor antagonist

C- PPAR-alpha receptor agonist

**D- PPAR-gamma receptor agonist**

E- Increases endogenous insulin secretion

Q78. A 27-year-old female develops eye pain and reduced visual acuity following the initiation of treatment for her recently diagnosed Grave's disease. Which one of the following treatments is likely to have been started?

**A- Radioiodine treatment**

B- Thyroidectomy

C- Propylthiouracil

D- Carbimazole and thyroxine

E- Carbimazole

Q79. An obese 48-year-old man presents with lethargy and polydipsia. What is the minimum HbA1c that would be diagnostic of type 2 diabetes mellitus?

A- Cannot use HbA1c for diagnosis

B- 6.0% (42 mmol/mol)

C- 6.3% (45 mmol/mol)

**D- 6.5% (48 mmol/mol)**

E- 7.0% (53 mmol/mol)

Q80. A 28-year-old woman with polycystic ovarian syndrome consults you as she is having problems becoming pregnant. She has a past history of oligomenorrhea and has previously recently stopped taking a combined oral contraceptive pill. Despite stopping the pill 6 months ago she is still not having regular periods. Her body mass index is 28 kg/m^2. Apart from advising her to lose weight, which one of the following interventions is most effective in increasing her chances of conceiving?

A- Metformin

B- Bromocriptine

C- Laparoscopic ovarian cautery

**D- Clomifene**

E- Orlistat

Q81. A 55-year-old woman is investigated following an osteoporotic hip fracture. The following results are obtained: TSH < 0.05 mu/l Free T4 29 pmol/l Which one of the following autoantibodies is most likely to be present?

**A- Anti-TSH receptor stimulating autoantibodies**

B- Anti-nuclear antibodies

C- Anti-thyroglobulin autoantibodies

D- Anti-microsomal antibodies

E- Anti-thyroid peroxidase autoantibodies

Q82. A 45-year-old man presents with bitemporal hemianopia and spade-like hands. What is the definite test to confirm the diagnosis?

A- Early morning growth hormone

B- Insulin tolerance test

**C- Oral glucose tolerance test with growth hormone measurements**

D- Random insulin-like growth factor 1 (IGF-1)

E- Short ACTH test

Q83. A 25-year-old Asian woman who is 26 weeks pregnant has an oral glucose tolerance test (OGTT). This was requested due to a combination of her ethnicity and a background of obesity. A recent ultrasound shows that the fetus is large for dates. The following results are obtained: Time (hours) Blood glucose (mmol/l) 0 9.2 2 14.2 What is the most appropriate management?

**A- Start insulin**

B- Give advice about a diabetic diet

C- Give advice about a diabetic diet + repeat OGTT in 4 weeks

D- Start gliclazide

E- Start insulin + aspirin

Q84. A 33-year-old woman is referred to the endocrinology clinic with thyrotoxicosis. Recent blood tests show the following: TSH < 0.05 mu/l Free T4 25 pmol/l Anti-thyroid peroxidase antibodies 115 IU/mL (< 35 IU/mL) A smooth, non-tender goitre is noted on examination the neck. The patient also has exophthalmos although there is no ophthalmoplegia, no reduction in visual acuity and no eye symptoms present. What is the most appropriate management?

A- Radioiodine treatment

**B- Carbimazole**

C- Propranolol

D- Fine needle aspiration biopsy of the thyroid gland

E- Intravenous corticosteroids

Q85. A 45-year-old man is reviewed in the diabetes clinic. The following results are obtained: Urinalysis NAD HbA1c 8.6% Gliclazide is added to the metformin he already takes. What is the minimum time period after which the HbA1c should be repeated ?

A- 6 months

B- 1 month

C- 2 weeks

**D- 3 months**

E- 4 months

Q86. Which one of the following is not associated with primary hyperparathyroidism?

**A- Hypotension**

B- Multiple endocrine neoplasia type 1

C- Multiple endocrine neoplasia type 2a

D- Depression

E- Pancreatitis

Q87. A 33-year-old woman presents with weight loss and excessive sweating. her partner reports that she is 'on edge' all the time and during the consultation you notice a fine tremor. Her pulse rate is 96/min. A large, non-tender goitre is noted. Examination of her eyes is unremarkable with no evidence of exophthalmos. Free T4 26 pmol/l Free T3 12.2 pmol/l (3.0-7.5) TSH < 0.05 mu/l What is the most likely diagnosis?

A- Toxic multinodular goitre

B- Hashimoto's thyroiditis

C- T3-secreting adenoma

D- De Quervain's thyroiditis

**E- Graves' disease**

Q88. A 36-year-old female with a BMI of 34 kg/m^2 is reviewed after managing to lose 3 kg in the past month. She asks about the possibility of starting a drug to help her lose weight. What is the primary mode of action of orilistat?

A- Leptin antagonist

**B- Pancreatic lipase inhibitor**

C- Blocks intestinal absorption of lipids

D- HMG-CoA reductase inhibitor

E- Centrally-acting appetite suppressant

Q89. Which of the following secondary causes of hyperlipidaemia result in predominantly hypercholesterolaemia, as opposed to hypertriglyceridaemia?

A- Diabetes mellitus

B- Bendrofluazide

**C- Nephrotic syndrome**

D- Alcohol

E- Obesity

Q90. Which one of the following is not part of the diagnostic criteria for the metabolic syndrome?

A- High triglycerides

B- Low HDL

**C- High LDL**

D- Central obesity

E- Hypertension

Q91. A 45-year-old female is reviewed in the medical clinic with a two month history of lethargy. Blood tests reveal the following: Na+ 129 mmol/l K + 5.1 mmol/l Urea 5.3 mmol/l Creatinine 99 µmol/l Total T4 66 nmol/l Which one of the following investigations is most likely to reveal the diagnosis?

A- Serum glucose

B- TSH

C- Free T4

D- Overnight dexamethasone suppression test

**E- Short synacthen test**

Q92. Which one of the following is not an indication for treating a patient with subclinical hypothyroidism?

A- Previous treatment of Graves' disease

B- TSH > 10

**C- Raised ESR**

D- Positive thyroid autoantibodies

E- Other autoimmune disorder

Q93. A 56-year-old lady with a BMI of 27 is reviewed in the diabetic clinic due to poor glycaemic control. She is currently being treated with gliclazide 160mg bd. Her latest bloods show: Na+ 139 mmol/l K + 4.1 mmol/l Urea 8.4 mmol/l Creatinine 170 µmol/l ALT 25 iu/l yGT 33 iu/l HbA1c 9.4% Which one of the following medications should be added next?

A- Guar gum

**B- Pioglitazone**

C- Metformin

D- Acarbose

E- Repaglinide

Q94. A 30-year-old female is diagnosed with having Grave's disease. What is her chance of developing thyroid eye disease?

A- 2-5%

B- 5-10&

C- 10-15%

D- 15-25%

**E- 25-50%**

Q95. A 43-year-old man requests a 'medical' as he is concerned about his risk of heart disease. His father died at the age of 45-years following a myocardial infarction. His lipid profile is as follows: HDL 1.4 mmol/l LDL 5.7 mmol/l Triglycerides 2.3 mmol/l Total cholesterol 8.2 mmol/l Clinical examination reveals tendon xanthomata around his ankles. What is the most likely diagnosis?

**A- Familial hypercholesterolaemia (heterozygous)**

B- Nephrotic syndrome

C- Mixed hyperlipidaemia

D- Familial hypercholesterolaemia (homozygous)

E- Hypothyroidism

Q96. A 29-year-old female who is 14 weeks into her first pregnancy is investigated for excessive sweating and tremor. Blood tests reveal the following: TSH < 0.05 mu/l T4 188 nmol/l What is the most appropriate management?

A- Immediate surgery

B- Carbimazole

C- Surgery at start of third trimester

**D- Propylthiouracil**

E- Radioiodine

Q97. A 33-year-old female is referred to endocrinology with thyrotoxicosis. Following a discussion of management options she elects to have radioiodine therapy. Which one of the following is the most likely adverse effect?

**A- Hypothyroidism**

B- Thyroid malignancy

C- Agranulocytosis

D- Oesophagitis

E- Precipitation of thyroid eye disease

Q98. A 46-year-old man with suspected diabetes mellitus has an oral glucose tolerance test, following the standard WHO protocol. The following results are obtained: Time (hours) Blood glucose (mmol/l) 0 5.7 2 7.6 How should these results be interpreted?

**A- Normal**

B- Impaired fasting glucose and impaired glucose tolerance

C- Diabetes mellitus

D- Impaired glucose tolerance

E- Impaired fasting glucose

Q99. A 24-year-old female with a history of type 1 diabetes mellitus presents to the Emergency Department with vomiting and abdominal pain. Finger-prick testing estimates the blood sugar to be 25 mmol/l. Arterial blood gases record a pH of 7.22. On examination the patient is dehydrated and weighs 80 kg. An intravenous line is sited and bloods are sent. One litre of 0.9% saline is infused and an intravenous insulin pump is set-up. What rate should insulin be initially given?

A- 10 unit / hour

B- 1 unit / hour

C- 2 unit / hour

D- 6 unit / hour

**E- 8 unit / hour**

Q100. A 60-year-old man who is known to have lung cancer comes for review. For the past three weeks he has lost his appetite, has been feeling sick and generally feels tired. On examination he appears to be mildly dehydrated. You order some blood tests: Calcium 3.12 mmol/l Albumin 40 g/l Glucose (random) 6.7 mmol/l Urea 10.2 mmol/l Creatinine 115 µmol/l Which one of his existing medications is most likely to be contributing to his presentation?

A- Amlodipine

B- Simvastatin

**C- Bendroflumethiazide**

D- Aspirin

E- Lisinopril

Q101. A 42-year-old man presents to his GP feeling generally unwell. For the past three months he has been experiencing daily frontal headaches which have not been helped by regular paracetamol. He has also noticed some unusual symptoms such as his wedding ring no longer fitting, his shoe size apparently increasing and a small amount of milky discharge from both nipples. On examination his blood pressure is 168/96 mmHg. What is the most likely diagnosis?

A- Phaeochromocytoma

B- Cushing's syndrome

C- Diabetes insipidus

D- Macroprolactinoma

**E- Acromegaly**

Q102. Which one of the following statements regarding the metabolic syndrome is correct? meet the criteria for metabolic syndrome

A- The WHO criteria are used to define impaired glucose tolerance

B- The central pathophysiological change is thought to be reduced insulin production

C- A diagnosis cannot be made without weighing the patient

D- A raised LDL concentration is one of the key criteria in most definitions

**E- Decisions on cardiovascular risk factor modification should be made regardless of whether patients**

Q103. A 43-year-old man is found to have a phaeochromocytoma. Which anti-hypertensive medication should be started first?

A- Propranolol

B- Ramipril

C- Atenolol

**D- Phenoxybenzamine**

E- Doxazosin

Q104. A 56-year-old female is admitted to ITU with a severe pneumonia. Thyroid function tests are most likely to show:

A- TSH normal; thyroxine high; T3 high

**B- TSH normal / low; thyroxine low; T3 low**

C- TSH high; thyroxine low; T3 low

D- TSH low; thyroxine high; T3 high

E- TSH high; thyroxine normal; T3 high

Q105. Which one of the following is the most common non-iatrogenic cause of Cushing's syndrome?

A- Ectopic ACTH production

B- Adrenal adenoma

C- Micronodular adrenal dysplasia

D- Adrenal carcinoma

**E- Pituitary tumour**

Q106. Which of the following is least recognised as a potential complication of acromegaly?

A- Colorectal cancer

B- Hypertension

C- Cardiomyopathy

D- Diabetes mellitus

**E- Pulmonary hypertension**

Q107. Each one of the following is a cause of nephrogenic diabetes insipidus, except:

A- Hypercalcaemia

B- Demeclocycline

**C- Histiocytosis X**

D- Lithium

E- Hypokalaemia

Q108. The first-line treatment in remnant hyperlipidaemia (dysbetalipoproteinaemia) is:

A- Ursodeoxycholic acid

B- Vitamin A

C- Statins

D- Fish oil

**E- Fibrates**

Q109. A 45-year-old man is referred to the acute medical unit. He had presented earlier in the day to the GP complaining of ongoing fatigue and polydipsia. A BM (finger-prick glucose) taken in the surgery was 22.3 mmol/l. On examination he is an obese man (BMI 36kg/m2 ) with a pulse of 84 bpm and blood pressure of 144/84 mmHg. Blood tests reveal the following: Na+ 140 mmol/l K + 3.9 mmol/l Bicarbonate 23 mmol/l Urea 5.2 mmol/l Creatinine 101 µmol/l Glucose 21.2 mmol/l What is the most appropriate initial management?

A- Gliclazide

B- Pioglitazone

C- Weight loss

**D- Metformin**

E- Commence insulin therapy

Q110. A 58-year-old man comes for review in the diabetes clinic. He was diagnosed as having type 2 diabetes mellitus (T2DM) around 10 years ago and currently only takes gliclazide and simvastatin. Three years ago he was successfully treated for bladder cancer. A recent trial of metformin was unsuccessful due to gastrointestinal side-effects. He works as an accountant, is a non-smoker and his BMI is 31 kg/m^2. His annual bloods show the following: Na+ 138 mmol/l K + 4.1 mmol/l Urea 4.3 mmol/l Creatinine 104 µmol/l HbA1c 7.8% What is the most appropriate next step in management?

A- Add pioglitazone

B- Add exenatide

C- Add acarbose

D- Add repaglinide

**E- Add sitagliptin**

Q111. Liddle's syndrome is associated with each one of the following, except:

A- Alkalosis

B- Response to treatment with amiloride

C- Hypertension

**D- Autosomal recessive inheritance**

E- Hypokalaemia

Q112. A 62-year-old HGV driver is reviewed. He was diagnosed last year with type 2 diabetes mellitus. Following weight loss and metformin his HbA1c has decreased from 8.8% to 8.4%. What is the most suitable next step in management?

A- Add exenatide

B- Make no changes to management

C- Add gliclazide

D- Stop metformin for a period to ensure hypoglycaemic awareness is not lost

**E- Add pioglitazone**

Q113. A 36-year-old woman who presented with a goitre is diagnosed with autoimmune thyroiditis. Which one of the following types of thyroid cancer is she predisposed to developing?

A- Anaplastic

**B- Lymphoma**

C- Medullary

D- Follicular

E- Papillary

Q114. You review a 68-year-old man who has chronic obstructive pulmonary disease (COPD). Each year he typically has around 7-8 courses of oral prednisolone to treat infective exacerbations of his COPD. Which one of the following adverse effects is linked to long-term steroid use?

A- Osteomalacia

B- Enophthalmos

C- Leucopaenia

**D- Avascular necrosis**

E- Constipation

Q115. A 51-year-old woman who is known to have poorly controlled type 1 diabetes mellitus is reviewed. Her main presenting complaint is bloating and vomiting after eating. She also notes that her blood glucose readings have become more erratic recently. Which one of the following medications is most likely to be beneficial?

A- Helicobacter pylori eradication therapy

B- Lansoprazole

C- Amitriptyline

**D- Metoclopramide**

E- Cyclizine

Q116. Which of the following results establishes a diagnosis of diabetes mellitus?

A- Asymptomatic patient with fasting glucose 7.9 mmol/L on one occasion

B- Symptomatic patient with fasting glucose 6.8 mmol/L on two occasions

C- Glycosuria +++

D- Asymptomatic patient with random glucose 22.0 mmol/L on one occasion

**E- Symptomatic patient with random glucose 12.0 mmol/L on one occasion**

Q117. Which one of the following features is not seen in carcinoid syndrome?

A- Flushing

B- Diarrhoea

C- Bronchospasm

**D- Hypertension**

E- Pellagra

Q118. Which one of the following statements regarding impaired glucose regulation is correct? impaired fasting glycaemia than 7.0 mmol/l

A- All patient should have a repeat oral glucose tolerance test every 2 years

**B- Patients with impaired glucose tolerance are more likely to develop diabetes than patients with**

C- Impaired glucose tolerance (IGT) is defined as a fasting glucose greater than or equal to 6.1 but less

D- Around 1 in 20 adults in the UK have impaired glucose regulation

E- Patients should be offered metformin if lifestyle changes fail to improve their glucose profile

Q119. A 47-year-old woman is referred to the general medical clinic. She has gained 10 kg in weight in the past 3 months but her main problem is episodic sweating. These episodes of sweating are associated with double vision and typically occur early in the morning. Clinical examination is unremarkable. What is the most likely diagnosis?

A- Bronchial carcinoid

B- Hashimoto's thyroiditis

C- Menopause

D- Cushing's syndrome

**E- Insulinoma**

Q120. A 35-year-old female who has recently being diagnosed with Grave's disease presents for review 3 months after starting a 'block and replace' regime with carbimazole and thyroxine. She is concerned about developing thyroid eye disease. What is the best way that her risk of developing thyroid eye disease can be reduced?

A- Reduce alcohol intake

B- A diet rich in omega-3 fatty acids

C- Regular exercise

**D- Stop smoking**

E- Lose weight

Q121. Which one of the following features of haemochromatosis may be reversible with treatment?

**A- Cardiomyopathy**

B- Hypogonadotrophic hypogonadism

C- Diabetes mellitus

D- Arthropathy

E- Liver cirrhosis

Q122. Each one of the following is associated with pseudohypoparathyroidism, except:

A- Low calcium levels

**B- Low PTH levels**

C- Shortened 4th and 5th metacarpals

D- Low IQ

E- Short stature

Q123. Which one of the following skin disorders is least associated with hypothyroidism?

A- Xanthomata

B- Pruritus

**C- Pretibial myxoedema**

D- Eczema

E- Dry, coarse hair

Q124. Cushing's syndrome is most typically associated with which one of the following abnormalities:

A- Hypokalaemic metabolic acidosis

B- Hyperkalaemic metabolic alkalosis

C- Hypocalcaemic metabolic acidosis

**D- Hypokalaemic metabolic alkalosis**

E- Hyperkalaemic metabolic acidosis

Q125. An insulin stress test is most useful in the investigation of:

A- Glucagonoma

B- Insulinoma

C- Addison's disease

**D- Hypopituitarism**

E- Diabetes mellitus

Q126. A 34-year-old female with a history of Addison's disease presents for review in endocrinology clinic. She is generally well but complains of a decrease in her libido. On examination there is a slight loss of pubic hair. What is the most likely cause?

A- Adverse effect of hydrocortisone therapy

B- 11-hydroxylase deficiency

C- Diethylstilbestrol deficiency

D- Oestrogen deficiency

**E- Dehydroepiandrosterone (DHEA) deficiency**

Q127. A 44-year-old woman presents to her GP as she is feeling 'hot all the time' and is consequently worried she is going through an early menopause. Her husband has also noticed a 'fullness' of her neck which has become apparent over the past few weeks. On examination her pulse is 90/minute and she has a small, non-tender goitre. Blood tests are arranged: TSH < 0.05 mu/l Free T4 24 pmol/l Anti-thyroid peroxidase antibodies 102 IU/mL (< 35 IU/mL) ESR 23 mm/hr What is the most likely diagnosis?

A- Hashimoto's thyroiditis

B- Toxic multinodular goitre

C- Thyroid cancer

D- De Quervain's thyroiditis

**E- Graves' disease**

Q128. A 53-year-old female with a history of primary atrophic hypothyroidism is assessed two months following a change in her dose of levothyroxine. Which one of the following best describes what the TSH should ideally be?

A- Between 0.5 to 1.0 mU/l

**B- Between 0.5 to 2.5 mU/l**

C- Between 2.5 to 4.5 mU/l

D- Between 1.5 to 3.5 mU/l

E- Between 3.5 to 5.5 mU/l

Q129. A 69-year-old man who had a stroke 6 months ago is reviewed. After his diagnosis he was started on simvastatin 40mg on for secondary prevention of further cardiovascular disease. A fasting lipid profile taken one week ago is reported as follows: Total cholesterol 5.4 mmol/l HDL cholesterol 1.0 mmol/l LDL cholesterol 4.1 mmol/l Triglyceride 1.5 mmol/l According to recent NICE guidelines, what is the most appropriate action?

**A- Switch to simvastatin 80mg on**

B- No change in medication, repeat lipid profile in 6 months

C- Add nicotinic acid

D- Switch to atorvastatin 80mg on

E- Add ezetimibe

Q130. A 22-year-old female presents with recurrent painful oral ulceration. Examination reveals signs of oral Candidal infection. Which one of the following would most suggest type 1 polyglandular syndrome?

**A- Hypocalcaemia**

B- Rheumatoid arthritis

C- Type II diabetes mellitus

D- Coeliac disease

E- Hypercalcaemia

Q131. A 3-year-old boy is investigated for lethargy. Examination is unremarkable with a blood pressure of 90/46 mmHg (normal for his age). Blood tests reveal: Na+ 140 mmol/l K + 2.6 mmol/l Bicarbonate 33 mmol/l Urea 4.2 mmol/l Creatinine 91 µmol/l Which one of the following conditions is most likely to be responsible?

A- Cushing's syndrome

B- Conn's syndrome

C- 11-beta hydroxylase deficiency

**D- Bartter's syndrome**

E- Liddle's syndrome

Q132. A 23-year-old woman presents for review. She has not a normal period for around 8 months now. A recent pregnancy test was negative. Blood tests are ordered: FSH 2.2 IU/L (0-20 IU/L) Oestradiol 84 pmol/l (100-500 pmol/l) Thyroid stimulating hormone 3.1 mIU/L Prolactin 2 ng/ml (0-10 ng/ml) Free androgen index 3 ( < 7 ) What is the most likely cause of her symptoms?

A- Prolactinoma

B- Premature ovarian failure

C- Polycystic ovarian syndrome

D- Addison's disease

**E- Excessive exercise**

Q133. A 54-year-old man with type 2 diabetes mellitus is found on annual review to have new vessel formation at the optic disc. Visual acuity in both eyes is not affected (6/9). Blood pressure is155/84 mmHg. HbA1c 8.4% What is the most important intervention in this patient?

A- Follow-up ophthalmoscopy in 3 months

B- Add aspirin

C- Blood pressure control

D- Tight glycaemic control

**E- Laser therapy**

Q134. A 64-year-old patient is prescribed pegvisomant for the treatment of acromegaly. What is the mechanism of action of pegvisomant?

A- IGF-1 receptor antagonist

**B- Growth hormone receptor antagonist**

C- IGF-1 receptor agonist

D- Growth hormone receptor agonist

E- Long-acting somatostatin analogue

Q135. Which one of the following is most likely to be seen in a patient with multiple endocrine neoplasia (MEN) type I?

A- Phaeochromocytoma

**B- Insulinoma**

C- Marfanoid body habitus

D- Medullary thyroid carcinoma

E- RET gene

Q136. Which one of the following may be associated with galactorrhoea?

**A- Primary hypothyroidism**

B- Addison's disease

C- Cushing's syndrome

D- Grave's disease

E- Bromocriptine

Q137. Which one of the following statements regarding polycystic ovarian syndrome (PCOS) is incorrect?

A- A slightly elevated prolactin is consistent with a diagnosis of PCOS

B- Luteinizing hormone levels are usually raised

C- Hyperinsulinaemia is seen

D- Acanthosis nigricans may be seen

**E- Affects between 2-3% of women of reproductive age**

Q138. A 26-year-old obese female is investigated for menstrual disturbance. A diagnosis of polycystic ovarian syndrome is made. Which of the following findings is most consistently seen in polycystic ovarian syndrome?

A- Obesity

B- Hirsutism

**C- Ovarian cysts on ultrasound**

D- Raised LH:FSH ratio

E- Clitoromegaly

Q139. A 52-year-old man has a set of fasting bloods as part of a work-up for hypertension. The fasting glucose comes back as 6.5 mmol/l. The test is repeated and reported as 6.7 mmol/l. He says he feels constantly tired but denies any polyuria or polydipsia. How should these results be interpreted?

**A- Impaired fasting glycaemia**

B- Suggestive of diabetes mellitus but not diagnostic

C- Diabetes mellitus

D- Normal

E- Impaired glucose tolerance

Q140. A 54-year-old female presents to the Emergency Department concerned about double vision. She is noted to have exophthalmos and conjunctival oedema on examination and a diagnosis of thyroid eye disease is suspected. What can be said regarding her thyroid status?

A- Hyper- or euthyroid

B- Hypothyroid

C- Hyperthyroid

D- Hypo- or euthyroid

**E- Eu-, hypo- or hyperthyroid**

Q141. Dynamic pituitary function tests may be used to assess each one of the following, except:

A- Cortisol

B- Prolactin

C- Growth hormone

D- Follicular stimulating hormone

**E- Antidiuretic hormone**

Q142. A 45-year-old man is investigated following referral to the endocrinology clinic with polydipsia. Plasma glucose and calcium are normal. A water deprivation test is performed with the following results: Starting plasma osm. 319 mOsmol/l (275-295 mOsmol/l) Final urine osm. 142 mOsmol/l Urine osm. post-DDAVP 885 mOsmol/l What is the most likely diagnosis?

A- Psychogenic polydipsia

B- Nephrogenic diabetes insipidus

C- Primary hyperparathyroidism

D- Pseudohypoparathyroidism

**E- Cranial diabetes insipidus**

Q143. A 35-year-old female is referred to the endocrine clinic due to weight loss and palpitations. The following results are obtained: TSH < 0.05 mu/l T4 178 mmol/l Which one of the following features would most suggest a diagnosis of Grave's disease?

A- Atrial fibrillation

B- Lid lag

C- Family history of radioiodine treatment

**D- Pretibial myxoedema**

E- Multinodular goitre

Q144. Which one of the following is the most common cause of hypothyroidism in the UK?

A- Pituitary failure

B- Dietary iodine deficiency

C- Lithium therapy

**D- Primary atrophic hypothyroidism**

E- Hashimoto's thyroiditis

Q145. Each one of the following is a cause of cranial diabetes insipidus, except:

A- Pituitary surgery

**B- Lithium**

C- Histiocytosis X

D- Craniopharyngioma

E- Post head-injury

Q146. What is the most common cause of primary hyperaldosteronism?

A- Pituitary tumour

B- Adrenocortical adenoma

C- Adrenal carcinoma

D- Ectopic secretion

**E- Bilateral idiopathic adrenal hyperplasia**

Q147. A 45-year woman who you have treated for obesity comes for review. Despite ongoing lifestyle interventions and trials of orlistat and sibutramine she has failed to lose a significant amount of weight. She is currently taking ramipril for hypertension but a recent fasting glucose was normal. For this patient, what is the cut-off body mass index (BMI) that would trigger a referral for consideration of bariatric surgery?

**A- BMI > 35 kg/m^2**

B- BMI > 40 kg/m^2

C- BMI > 30 kg/m^2

D- BMI > 38 kg/m^2

E- BMI > 45 kg/m^2

Q148. Which one of the following features is least commonly seen in Gitelman's syndrome?

A- Hypokalaemia

**B- Hypertension**

C- Metabolic alkalosis

D- Hypocalciuria

E- Hypomagnesaemia

Q149. A 54-year-old man with type 2 diabetes mellitus is started on exenatide. Which one of the following statements regarding exenatide is incorrect?

A- Typically results in weight loss

B- May be combined with a sulfonylurea

**C- The major adverse effect is flu-like symptoms**

D- Should be given twice a day

E- Must be given by subcutaneous injection

Q150. A 52-year-old woman who was diagnosed as having primary atrophic hypothyroidism 12 months ago is reviewed following recent thyroid function tests (TFTs): TSH 12.5 mU/l Free T4 14 pmol/l She is currently taking 75mcg of levothyroxine once a day. How should these results be interpreted?

**A- Poor compliance with medication**

B- Taking extra thyroxine

C- Evidence of recent systemic steroid therapy

D- Keep on same dose

E- T4 to T3 conversion disorder

Q151. A 25-year-old male develops type 2 diabetes mellitus. Which one of the following genes is most likely to be responsible?

A- Glucokinase

**B- HNF-1 alpha**

C- HNF-4 alpha

D- HNF-1 beta

E- IPF-1

Q152. One of your patients is diagnosed with having the metabolic syndrome. Which one of the following is associated with this condition?

A- Endometriosis

B- Hypothyroidism

C- Asymptomatic rise in amylase levels

D- Elevated albumin levels

**E- Raised uric acid levels**

Q153. A 78-year-old nursing home resident is admitted to the acute medical unit after being found collapsed in his room. A carer from the nursing home is present and reports that he has had regular 'hypos' recently. On admission he was drowsy and the blood glucose was 1.8 mmol/l. Following intravenous dextrose the patient's condition significantly improved. His medication on admission is as follows: Metformin 1g bd Gliclazide 160mg od Pioglitazone 45mg od Aspirin 75mg od Simvastatin 40mg on What is the most appropriate initial action?

A- Stop metformin

B- Stop pioglitazone

**C- Stop gliclazide**

D- Make no changes to the medication

E- Stop all oral antidiabetic medications

## **Chapter 2 Gastroenterology**

Q1. A 18-year-old male is admitted after deliberately ingesting 40 grams of paracetamol. Twenty-four hours after admission he is reassessed with a view to liver transplantation. Of the following, which one would most strongly indicate the need for a liver transplant?

A- CRP 306

**B- Arterial pH 7.25**

C- Creatinine 267 µmol/l

D- Grade IV encephalopathy

E- INR 5.7

Q2. A 44-year-old man is diagnosed with a right-sided colon cancer. He has a strong family history of colorectal and ovarian cancer. Genetic tests confirm a diagnosis of hereditary non-polyposis colorectal cancer (HNPCC) due to a defect in the MSH2 gene. What is the function of this gene?

A- Signal transduction

B- Apoptosis regulation

C- Epidermal growth factor receptor

**D- DNA mismatch repair**

E- Regulatory GTPase

Q3. What percentage of patients with ulcerative colitis have primary sclerosing cholangitis?

A- 0.5%

B- 1%

C- 2%

**D- 4%**

E- 10%

Q4. A 44-year-old man with alcoholic liver disease is admitted with pyrexia. He has been unwell for the past three days and has multiple previous admissions before with variceal bleeding. Examination shows multiple stigmata of chronic liver disease, ascites and jaundice. Paracentesis is performed with the following results: Neutrophils 487 cells/ul What is the most appropriate treatment?

A- Therapeutic abdominal washout

B- Intravenous vancomycin + metronidazole

**C- Intravenous cefotaxime**

D- Insert an ascitic drain

E- Intravenous ciprofloxacin

Q5. A 54-year-old female is admitted one week following a cholecystectomy with profuse diarrhoea. What is the most likely diagnosis?

A- Campylobacter

B- E- coli

**C- Clostridium difficile**

D- Salmonella

E- Staphylococcus aureus

Q6. A 29-year-old woman develops severe vomiting four hours after having lunch at a local restaurant. What is the most likely causative organism?

A- Escherichia coli

B- Shigella

C- Campylobacter

D- Salmonella

**E- Staphylococcus aureus**

Q7. A 39-year-old man with a history of liver cirrhosis secondary to alcohol excess is admitted with an upper gastrointestinal haemorrhage. He is treated with terlipressin and has an endoscopy with variceal band ligation 6 hours following admission. Which further intervention has been shown to reduce mortality during the acute admission?

A- IV labetalol to induce hypotension for the first 3 days

B- Low-molecular weight heparin prophylaxis

C- Nasogastric tube feeding for the first 3 days

**D- Antibiotic prophylaxis**

E- High-dose proton pump inhibitor therapy

Q8. A 26-year-old man with a history of speech and behavioural problems presents with lethargy. On examination he is noted to have jaundiced sclera. What is the most likely diagnosis?

A- Wiskott-Aldrich syndrome

B- Haemochromatosis

C- Friedreich's ataxia

**D- Wilson's disease**

E- Acute intermittent porphyria

Q9. A 54-year-old man develops central abdominal pain a few hours after having an Endoscopic Retrograde Cholangiopancreatography (ERCP) performed. Investigations reveal the following: Amylase 545 u/dl Erect chest x-ray Normal heart and lungs. No free air noted What is the most appropriate management?

A- Repeat ERCP + analgesia

B- Reassure normal + analgesia

C- Intravenous ciprofloxacin + analgesia

D- Surgical opinion + analgesia

**E- Intravenous fluids + analgesia**

Q10. Which one of the following patients would it be most suitable to offer a screening test for coeliac disease to?

**A- A patient who is 'tired all the time'**

B- A patient with rheumatoid arthritis

C- A patient who has a family history of inflammatory bowel disease

D- A patient with type 2 diabetes mellitus

E- A patient who develops erythema nodosum

Q11. A 49-year-old female is referred to the gastroenterology out-patient clinic with a 3 month history of epigastric pain and diarrhoea. Her GP initially prescribed lansoprazole 30mg od but this didn't alleviate her symptoms. The only past medical history of note is hyperparathyroidism. Endoscopy revealed multiple duodenal ulcerations. What is the likely diagnosis?

A- Multiple endocrine neoplasia type II a

B- Coeliac disease

**C- Multiple endocrine neoplasia type I**

D- Autoimmune polyendocrinopathy syndrome

E- Crohn's disease

Q12. A 31-year-old man returns for review. He was diagnosed with an anal fissure around 7 weeks ago and has tried dietary modification, laxatives and topical anaesthetic with little benefit. What is the most appropriate next step?

A- Oral bisacodyl

B- Oral calcium channel blocker

C- Topical steroid

D- Buccal glyceryl trinitrate prior to defecation

**E- Topical glyceryl trinitrate**

Q13. Which one of the following features is least associated with ulcerative colitis?

A- Inflammatory cell infiltrate in the lamina propria

B- Pseudopolyps

**C- Non-caseating granulomas**

D- Depletion of goblet cells

E- Inflammation confined to the mucosa and submucosa

Q14. A 64-year-old woman complains of having 'excessive wind'. She is normally fit and well but for the past three months she has felt bloated and has been passing wind frequently. She also complains of vague upper abdominal pain and chronic diarrhoea. A hydrogen breath test confirms a diagnosis of small bowel bacterial overgrowth syndrome. What is the treatment of choice?

A- Tetracycline

**B- Rifaximin**

C- Cefaclor

D- Nitrofuratoin

E- Ciprofloxacin

Q15. A 25-year-old man presents with bloating and alteration in his bowel habit. He has been keeping a food diary and feels his symptoms may be secondary to a food allergy. Blood tests show a normal full blood count, ESR and thyroid function tests. Anti-endomysial antibodies are negative. What is the most suitable test to investigate possible food allergy?

A- Total IgE levels

B- Hair analysis

C- Skin patch testing

**D- Skin prick test**

E- Jejunal biopsy

Q16. Autoimmune hepatitis is most characteristically associated with elevated levels of which one of the following immunoglobulins?

A- IgE

B- IgA

C- IgD

D- IgM

**E- IgG**

Q17. The action of which one of the following brush border enzymes results in the formation of glucose and galactose?

A- Dipeptidase

B- A-dextrinase

C- Maltase

**D- Lactase**

E- Sucrase

Q18. A 31-year-old woman who initially presented with abdominal pain and constipation is diagnosed with irritable bowel syndrome. Which one of the following bits of dietary advice is it least suitable to give?

A- Avoid missing meals

B- Restrict tea and coffee to 3 cups per day

**C- Increase the intake of fibre such as bran and wholemeal bread**

D- Reduce intake of alcohol

E- Drink at least 8 cups of fluid per day

Q19. What percentage of patients who contract the hepatitis C virus will become chronically infected?

A- 30-35%

**B- 80-85%**

C- 65-70%

D- 5-10%

E- 15-20%

Q20. Which one of the following is not associated with non-alcoholic steatohepatitis?

A- Hyperlipidaemia

B- Obesity

C- Sudden weight loss or starvation

D- Jejunoileal bypass

**E- Type 1 diabetes mellitus**

Q21. A 30-year-old woman presents with abdominal pain that is associated with alternating diarrhoea and constipation. Which one of the following symptoms is least consistent with a diagnosis of irritable bowel syndrome?

A- Feeling of incomplete stool evacuation

**B- Waking at night due to the pain**

C- Abdominal bloating

D- Faecal urgency

E- Passage of mucous with stool

Q22. A 35-year-old man who is usually fit and well presents with a 2 month history of indigestion. His weight is stable and there is no history of dysphagia. Examination of the abdomen is unremarkable. Of the following options, what is the most suitable initial management?

A- Urea breath testing and non-urgent referral for endoscopy

B- H pylori eradication therapy and full-dose proton pump inhibitor for three months

C- Full-dose Proton pump inhibitor and immediate referral for endoscopy

D- Three month course of a standard-dose proton pump inhibitor

**E- One month course of a full-dose proton pump inhibitor**

Q23. A 30-year-old woman is investigated for chronic diarrhoea, bloating and tiredness. A diagnosis of coeliac disease is suspected. Which one of the following factors would increase the likelihood of a false negative serology test?

A- Hyposplenism

B- Being on a gluten free diet for one week prior to the test

C- A course of prednisolone one week prior to the test

D- The presence of dermatitis herpetiformis

**E- Selective IgA deficiency**

Q24. A 70-year-old man who is known to have atrial fibrillation presents with abdominal pain and rectal bleeding. A diagnosis of ischaemic colitis is suspected. Which part of the colon is most likely to be affected?

A- Hepatic flexure

B- Descending colon

**C- Splenic flexure**

D- Ascending colon

E- Rectum

Q25. A 23-year-old female with a history of diarrhoea and weight loss has a colonoscopy to investigate her symptoms. A biopsy is taken and reported as follows: Pigment laden macrophages What is the most likely diagnosis?

A- Intestinal melanoma

B- Haemochromatosis

C- Ulcerative colitis

**D- Laxative abuse**

E- Colorectal cancer

Q26. A patient who was an intravenous drug user in the 1990s asks for a hepatitis C test. What is the most appropriate action? precautions

A- Refer him for pre-test counselling to discuss the pros and cons of testing

B- Advise him that no accurate test is currently available but that he should undertake normal

**C- Arrange an anti-HCV antibody test**

D- Arrange a HCV RNA test

E- Refer him to gastroenterology for a liver biopsy

Q27. What percentage of cases of chronic pancreatitis in the UK are due to alcohol excess?

A- 35%

B- 50%

C- 65%

**D- 80%**

E- 95%

Q28. A 28-year-old woman is diagnosed with constipation predominant irritable bowel syndrome. She occasionally experiences spasms of pain in the left iliac fossa. Which one of the following is least likely to help her symptoms?

A- Mebeverine

B- Ispaghula

C- Methylcellulose

D- Sterculia

**E- Lactulose**

Q29. A 23-year-old who is 10 weeks pregnant is reviewed by the midwife at the booking visit. This is her first pregnancy and she is well apart from some sickness which is worse in the morning and a generalised pruritus. Bloods tests including the full blood count, hepatitis B, C and HIV serology are normal. A slight yellow tinge of her sclera is noticed and liver function tests are ordered: Bilirubin 42 µmol/L ALP 160 U/L ALT 25 U/L Albumin 34 g/L What is the most likely diagnosis?

**A- Gilbert's syndrome**

B- Gallstones

C- Acute fatty liver

D- Intrahepatic cholestasis of pregnancy

E- Primary biliary cirrhosis

Q30. Which one of the following statements regarding hepatocellular carcinoma is correct?

**A- Diabetes mellitus is a risk factor**

B- Screening has not been shown to be effective

C- Bevacizumab may be used for advanced cases

D- The incidence is significantly higher in women

E- Alcohol excess is the most common underlying cause worldwide

Q31. Which one of the following is least associated with primary biliary cirrhosis?

**A- Ulcerative colitis**

B- Systemic sclerosis

C- Thyroid disease

D- Sjogren's syndrome

E- Rheumatoid arthritis

Q32. A 72-year-old female is admitted with diarrhoea to the acute medical unit. A sigmoidoscopy is performed which shows multiple white plaques adhered to the gastrointestinal mucosa. What is the most likely diagnosis?

A- Crohn's disease

B- Ulcerative colitis

C- Ischaemic colitis

**D- Pseudomembranous colitis**

E- Colorectal cancer

Q33. A 38-year-old female with a long history of alcohol excess presents with abdominal pain, weight loss and bulky stools. What is the most suitable investigation to confirm the diagnosis?

A- Endoscopic ultrasound

B- Endoscopic retrograde cholangiopancreatography

C- Ultrasound abdomen

**D- CT abdomen**

E- Endoscopy with D2 biopsy

Q34. You are reviewing a 31-year-old man in the liver clinic. He is currently on interferon-alpha treatment. What is the best way to assess his response to treatment?

A- Alanine transaminase level

B- Anti-HCV antibodies

**C- Viral load**

D- Prothrombin time

E- Hepatitis C genotype

Q35. What percentage of patients with chronic hepatitis C will develop liver cirrhosis over a 20-30 year period?

A- 5-10%

B- 10-20%

**C- 20-30%**

D- 40-50%

E- 60-70%

Q36. Which one of the following is most strongly associated with coeliac disease?

A- HLA A5

**B- HLA-DQ2**

C- HLA-DR2

D- HLA-DR4

E- HLA-B27

Q37. Which one of the following statements regarding hepatitis B and pregnancy is correct?

A- Without intervention the vertical transmission rate is around 3%

B- Only at risk groups should be screened for hepatitis B during pregnancy

C- Around 30% of mothers with hepatitis B develop pre-eclampsia

**D- It is safe for a mother with hepatitis B to breastfeed her newborn**

E- All pregnant women with hepatitis B should take oral ribavirin in the last trimester of pregnancy

Q38. A 68-year-old woman comes back to rheumatology clinic for review. Two weeks ago she was referred with pain in her left knee and the clinical impression at the time was osteoarthritis. As her pain was not responding to paracetamol she was commenced on diclofenac 50mg tds and lansoprazole 30mg od. Shortly afterwards she developed some indigestion which seems to resolve if she skips the diclofenac dose. She is otherwise asymptomatic and got good pain relief from diclofenac. Clinical examination is normal. What is the most appropriate action?

A- 13C-urea breath test

**B- Stop diclofenac, continue lansoprazole + review in 1 week**

C- Switch diclofenac to ibuprofen, continue lansoprazole

D- Urgent endoscopy

E- Admit

Q39. Which one of the following is most associated with oesophageal cancer?

**A- Coeliac disease**

B- Hypothyroidism

C- Crohn's disease

D- Addison's disease

E- Ulcerative colitis

Q40. A 23-year-old man is investigated for chronic diarrhoea associated with raised inflammatory markers. A bowel biopsy is taken. Which one of the following findings is most suggestive of ulcerative colitis?

A- Multiple granulomas

**B- Goblet cell depletion**

C- Inflammation affecting the serosa

D- Cobblestone appearance

E- Skip lesions

Q41. Which one of the following is not a feature of Peutz-Jeghers syndrome?

A- Intestinal obstruction

B- Pigmented lesions on palms

C- More than 10-fold increased risk of gastrointestinal malignancy

**D- Osteomas**

E- Iron-deficiency anaemia

Q42. A 29-year-old woman who is 30 weeks pregnant is admitted to the Emergency Department with central abdominal pain. Initial blood tests show the following: Amylase 1,438 u/dl What is the most likely cause of this presentation?

A- Gestational diabetes

B- HELLP syndrome

**C- Gallstones**

D- Hypertriglyceridaemia-induced pancreatitis

E- Pre-eclampsia

Q43. A 27-year-old female presents with alternating loose and hard stools associated with abdominal discomfort and bloating. Which one of the following is it most important to do before making a positive diagnosis of irritable bowel syndrome?

A- Arrange ultrasound abdomen

B- Flexible sigmoidoscopy

**C- Ask about family history of ovarian cancer**

D- Use a standardised screening tool for depression

E- Perform thyroid function tests

Q44. A 54-year-old man is investigated for dyspepsia. An endoscopy shows a gastric ulcer and a CLO test done during the procedure demonstrates H. pylori infection. A course of H. pylori eradication therapy is given. Six weeks later the patients comes for review. What is the most appropriate test to confirm eradication?

A- Culture of gastric biopsy

B- H. pylori serology

C- Hydrogen breath test

**D- Urea breath test**

E- Stool culture

Q45. Which one of the following adverse effects is least associated with sulfasalazine?

A- Male infertility

B- Skin rashes

**C- Visual disturbance**

D- Diarrhoea

E- Agranulocytosis

Q46. Which one of the following is not a contraindication to performing a percutaneous liver biopsy?

A- INR 2.6

**B- Viral hepatitis**

C- Hydatid cyst

D- Uncooperative patient

E- Haemoangioma

Q47. Which one of the following factors is most responsible for the increased rate of colorectal cancer in patients with ulcerative colitis?

A- Shared mutation in the HNPCC gene

**B- Chronic inflammation**

C- Increased surveillance with colonoscopy

D- Increased susceptibility to bacterial gastroenteritis

E- Prolonged immunosuppression

Q48. Which one of the following is least associated with Crohn's disease?

A- Fistulae

B- Kantor's string sign

C- 'Cobblestone' pattern of mucosa

**D- Crypt abscesses**

E- Involvement of all layers of bowel wall

Q49. What are the most common type of antibodies seen in pernicious anaemia?

A- Vitamin B12 receptor antibodies

**B- Gastric parietal cell antibodies**

C- Jejunal mucosa antibodies

D- Intrinsic factor antibodies

E- Vitamin B12 antibodies

Q50. A 34-year-old female with a history of alcoholic liver disease is admitted with frank haematemesis. She was discharged three months ago following treatment for bleeding oesophageal varices. Following resuscitation, what is the most appropriate treatment whilst awaiting endoscopy?

A- Octreotide

B- Omeprazole

C- Propranolol

D- Tranexamic acid

**E- Terlipressin**

Q51. Each one of the following is a risk factor for gastric cancer, except:

A- Smoking

**B- Blood group O**

C- Nitrates in diet

D- Pernicious anaemia

E- H. pylori infection

Q52. Crohn's disease is associated with each one of the following findings, except:

**A- Inflammation confined to the mucosa and submucosa**

B- Non-caseating granulomas

C- Rose-thorn ulcers

D- Cobblestone pattern

E- Fistulas

Q53. Which one of the following is most associated with the development of acute pancreatitis?

**A- Hyperchylomicronaemia**

B- Amyloidosis

C- Hypogammaglobulinaemia

D- Hypercholesterolaemia

E- Hypotriglyceridaemia

Q54. A 42-year-old dentist is reviewed in the medical clinic complaining of persistent lethargy. Routine bloods show abnormal liver function tests so a hepatitis screen is sent. The results are shown below: Anti-HAV IgG negative HBsAg negative Anti-HBs positive Anti-HBc negative Anti-HCV positive What do these results most likely demonstrate?

A- Hepatitis B infection

B- Hepatitis C infection

C- Previous vaccination to hepatitis B and C

**D- Hepatitis C infection with previous hepatitis B vaccination**

E- Hepatitis B and C infection

Q55. A 25-year-old man with a history of Crohn's disease is reviewed in clinic. Over the past week he has developed painful perianal ulcers. On examination numerous shallow ulcers can be seen with a small number of skin tags. What is the most appropriate first-line treatment?

A- Topical mesalazine

**B- Oral metronidazole**

C- Barrier creams + laxatives

D- Oral prednisolone

E- Oral mesalazine

Q56. A 25-year-old man presents with lethargy and increased skin pigmentation. Blood test reveal deranged liver function tests and impaired glucose tolerance. Given the likely diagnosis of haemochromatosis, what is the most appropriate initial investigation strategy?

**A- Transferrin saturation + ferritin**

B- Haematocrit + ferritin

C- Liver biopsy with Perl's stain

D- Serum iron + ferritin

E- Serum iron + haematocrit

Q57. Which one of the following medications is least associated with dyspepsia?

A- Isosorbide mononitrate

B- Prednisolone

C- Aminophylline

**D- Atenolol**

E- Amlodipine

Q58. A 23-year-old man develops watery diarrhoea 5 days after arriving in Mexico. Which one of the following is the most likely responsible organism?

A- Salmonella

B- Shigella

C- Campylobacter

**D- Escherichia coli**

E- Bacillus cereus

Q59. A 44-year-old man is diagnosed with a duodenal ulcer. CLO testing performed during the gastroscopy is positive for Helicobacter pylori. What is the most appropriate management to eradicate Helicobacter pylori?

A- Lansoprazole + clindamycin + metronidazole

B- Lansoprazole + amoxicillin + clindamycin

**C- Lansoprazole + amoxicillin + clarithromycin**

D- Omeprazole + amoxicillin + clindamycin

E- Omeprazole + penicillin + metronidazole

Q60. A 25-year-old woman develops deranged liver function tests following the introduction of a new drug. Alb 40, Bilirubin 46, ALT 576, ALP 95, yGT 150. Which of the following drugs is the most likely cause?

A- Oral contraceptive pill

**B- Sodium valproate**

C- Flucloxacillin

D- Chlorpromazine

E- Tetracycline

Q61. Primary sclerosing cholangitis is most associated with:

A- Primary biliary cirrhosis

B- Crohn's disease

C- Hepatitis C infection

**D- Ulcerative colitis**

E- Coeliac disease

Q62. Which one of the following is true regarding bacterial exotoxins? toxin

**A- They are mainly produced by Gram positive bacteria**

B- Cholera toxin inhibits cAMP release in intestinal cells

C- Diphtheria toxin necrosis is limited to the pharynx, nasopharynx and tonsils

D- Staph. aureus exotoxins are not known to cause gastroenteritis

E- 'Lockjaw' seen in tetanus is secondary to blockade of the neuromuscular junction by Botulinus

Q63. A 76-year-old woman with a history of atrial fibrillation presents with abdominal pain and bloody diarrhoea. On examination her temperature is 37.8ºC, pulse 102 / min and respiratory rate 30 / min. Her abdomen is tender with generalised guarding. Blood tests reveal the following: Hb 10.9 g/dl MCV 76 fl Plt 348 \* 109 /l WBC 23.4 \* 109 /l Na+ 141 mmol/l K + 5.0 mmol/l Bicarbonate 14 mmol/l Urea 8.0 mmol/l Creatinine 118 µmol/l What is the most likely diagnosis?

A- Diverticulitis

**B- Mesenteric ischaemia**

C- Campylobacter infection

D- Ruptured abdominal aortic aneurysm

E- Ulcerative colitis

Q64. A 65-year-old man with a history of dyspepsia is found to have a gastric MALT lymphoma on biopsy. What treatment should be offered?

A- Gastrectomy

B- Laser ablation

C- None

D- CHOP chemotherapy

**E- H. pylori eradication**

Q65. A 34-year-old HIV positive man is referred to gastroenterology due to jaundiced sclera. Liver function tests are as follows: Albumin 34 g/l ALP 540 iu/l Bilirubin 67 µmol/l ALT 45 iu/l What is the most likely diagnosis?

A- Hepatic abscess

B- Fungal obstruction of the bile duct

C- Duodenal adenoma

D- Primary biliary cirrhosis

**E- Sclerosing cholangitis**

Q66. A 23-year-old nurse is reviewed in occupational health following a needle stick injury from a man known to be a carrier of hepatitis B. Which one of the following would appear first during acute hepatitis B infection?

**A- HBsAg**

B- HBeAg

C- anti-HBg

D- anti-HBs

E- HBcAg

Q67. A patient with upper gastrointestinal symptoms tests positive for Helicobacter pylori following a urea breath test. Which one of the following conditions is most strongly associated Helicobacter pylori infection?

A- Gastric adenocarcinoma

B- Gastro-oesophageal reflux disease

C- Oesophageal cancer

**D- Duodenal ulceration**

E- Atrophic gastritis

Q68. A 31-year-old man with ulcerative colitis presents with a worsening of his symptoms. He is passing around four loose stools a day which do not contain blood. He has also experienced some urgency and tenesmus but is otherwise systemically well. What is the most appropriate management?

**A- Rectal mesalazine**

B- Oral metronidazole

C- Rectal corticoteroids

D- Observe with review in 7 days time

E- Oral loperamide

Q69. A 65-year-old man with liver cirrhosis of unknown cause is reviewed in clinic. Which one of the following factors is most likely to indicate a poor prognosis?

A- Alanine transaminase > 200 u/l

B- Caput medusae

**C- Ascites**

D- Gynecomastia

E- Splenomegaly

Q70. A 25-year-old female currently under investigation for secondary amenorrhoea presents with jaundiced sclera. On examination spider naevi are present along with tender hepatomegaly. Blood tests show: Hb 11.6 g/dl Plt 145 \* 109 /l WCC 6.4 \* 109 /l Albumin 33 g/l Bilirubin 78 µmol/l ALT 245 iu/l What is the most likely diagnosis?

A- Haemochromatosis

B- Wilson's disease

C- Primary biliary cirrhosis

**D- Autoimmune hepatitis**

E- Primary sclerosing cholangitis

Q71. Which of the following statements is true regarding the genetics of colon cancer?

A- Hereditary non-polyposis colorectal carcinoma is a autosomal recessive condition

B- The adenomatous polyposis coli gene is located on chromosome 12

C- Around 50% of patients with familial adenomatous polyposis develop colon cancer

D- Both hereditary and non-hereditary colon cancers typically present at 60-70 yrs of age

**E- Non-inherited colon cancer often involves mutation of the adenomatous polyposis coli gene**

Q72. You wish to screen a patient for hepatitis B infection. Which one of the following is the most suitable test to perform?

A- HBcAg

**B- HBsAg**

C- Hepatitis B viral load

D- anti-HBs

E- HBeAg

Q73. A 54-year-old female with a history of scleroderma presents with chronic diarrhoea and bloating. Blood tests show a mild macrocytic anaemia. A diagnosis of small bowel bacterial overgrowth is suspected. Which one of the following tests is most likely to confirm the diagnosis?

A- Jejunal biopsy

**B- Small bowel aspiration and culture**

C- 14C-xylose breath test

D- Small bowel meal

E- 14C-glycocholate breath test

Q74. A 52-year-old woman is diagnosed with non-alcoholic steatohepatitis following a liver biopsy. What is the single most important step to help prevent the progression of her disease?

A- Stop smoking

B- Start statin therapy

C- Eat more omega-3 fatty acids

D- Start sulfonylurea therapy

**E- Weight loss**

Q75. A 26-year-old woman who is known to have type 1 diabetes mellitus presents with a three-month history of diarrhoea, fatigue and weight loss. She has tried excluding gluten from her diet for the past 4 weeks and feels much better. She requests to be tested so that a diagnosis of coeliac disease is confirmed. What is the most appropriate next step?

A- Check her HbA1c

B- No need for further investigation as the clinical response is diagnostic

C- Check anti-endomysial antibodies

D- Arrange a jejunal biopsy

**E- Ask her to reintroduce gluten for the next 6 weeks before further testing**

Q76. What is the most common cause of hepatocellular carcinoma in the United Kingdom?

A- Haemochromatosis

B- Hepatitis B

C- Alcohol excess

D- Aflatoxin

**E- Hepatitis C**

Q77. A patient presents with gastrointestinal symptoms. Which one of the following features in the history would be least consistent with making a diagnosis of irritable bowel syndrome?

A- Urgency to open bowels

B- Symptoms made worse by eating

**C- 62-year-old female**

D- Passage of mucous with stool

E- Bladder symptoms

Q78. A 24-year-old man presents with rectal bleeding and pain on defecation. This has been present for the past two weeks. He has a tendency towards constipation and notices that when he wipes himself fresh blood is often on the paper. Rectal examination is limited due to pain but no external abnormalities are seen. What is the most likely diagnosis?

A- Internal haemorrhoids

B- Anal carcinoma

C- Rectal polyp

D- Anogenital herpes

**E- Anal fissure**

Q79. A 27-year-old woman with a history of depression presents to the Emergency Department. She reports taking 50 paracetamol tablets yesterday. Bloods are taken on admission. Which one of the following would most strongly indicate the need for a liver transplant?

A- Blood glucose 2.2 mmol/l

B- ALT 2364 iu/l

C- INR 4.1

D- Creatinine 230 µmol/l

**E- Arterial pH 7.27**

Q80. A 64-year-old female with a history of COPD and hypertension presents with pain on swallowing. Current medication includes a salbutamol and becotide inhaler, bendrofluazide and amlodipine. What is the most likely cause of the presentation?

A- Myasthenia gravis precipitated by bendrofluazide

B- Oesophageal web

C- Achalasia secondary to amlodipine

**D- Oesophageal candidiasis**

E- Oesophageal cancer

Q81. According to recent NICE guidelines, which one of the following may have a role in the management of irritable bowel syndrome?

A- Reflexology

B- Acupuncture

C- Aloe vera

D- Homeopathy

**E- Hypnotherapy**

Q82. Which one of the following investigations is considered the gold standard for the diagnosis of gastrooesophageal reflux disease?

A- Endoscopy

B- 24hr oesophageal pH monitoring

C- Oesophageal manometry

D- Barium swallow

E- CT thorax

Q83. A 27-year-old man with multiple pigmented freckles on his lips and face is investigated for iron-deficiency anaemia. A diagnosis of Peutz-Jeghers syndrome is suspected. What is the mode of inheritance?

A- Autosomal recessive

B- Mitochondrial inheritance

C- X-linked dominant

**D- Autosomal dominant**

E- X-linked recessive

Q84. The increased risk of oesophageal malignancy in patients with Barrett's oesophagus is approximately:

A- No increased risk

B- Twice risk

C- 5 times risk

**D- 50- 100 times risk**

E- 500- 1,000 times risk

Q85. Where do the majority of VIPomas arise from?

A- Small intestine

B- Pituitary

**C- Pancreas**

D- Antrum of stomach

E- Pylorus of stomach

Q86. Which one of the following is not associated with oesophageal cancer?

A- Achalasia

B- Smoking

C- Gastro-oesophageal reflux disease

**D- Helicobacter pylori**

E- Alcohol

Q87. A 45-year-old man is noted to have non-tender, smooth hepatomegaly associated Dupuytren's contracture and parotid enlargement. He recently returned from a holiday in Thailand. What is the likely diagnosis?

A- Primary hepatoma

B- Hydatid disease

**C- Alcoholic liver disease**

D- Viral hepatitis

E- Tricuspid regurgitation

Q88. A 59-year-old female presents with a two month history of indigestion. She is otherwise well, has not had a similar episode before and takes no regular medication. Of note there is no recent weight loss or vomiting and abdominal examination is unremarkable. What is the most appropriate initial management?

A- Long-term course of a H2 receptor antagonist

B- Lifestyle advice with follow-up appointment in one month

**C- Urgent referral for endoscopy**

D- One month course of a full-dose proton pump inhibitor

E- Urea breath testing and treat for H pylori if positive

Q89. A 54-year-old woman presents with jaundice shortly after being discharged from hospital. Liver function tests are reported as follows: Albumin 49 g/l Bilirubin 89 µmol/l Alanine transferase (ALT) 66 iu/l Alkaline phosphatase (ALP) 245 µmol/l Gamma glutamyl transferase (yGT) 529 u/l Which of the following antibiotics is she most likely to have received?

**A- Flucloxacillin**

B- Gentamicin

C- Ciprofloxacin

D- Trimethoprim

E- Ceftazidime

Q90. A 19-year-old man is referred to the general medical clinic. For the past six months his family have noted increasing behavioural and speech problems. He himself has noticed that he is more clumsy than normal and reports excessive salivation. His older brother died of liver disease. Given the likely underlying condition what is the most appropriate therapy?

A- Vitamin B6 supplements

B- Venesection

C- Ribavirin + interferon alpha

D- Pulsed methylprednisolone

**E- Penicillamine**

Q91. Which one of the following statements is incorrect regarding Dubin-Johnson syndrome?

A- Runs a benign course

B- Due to a defect in the canillicular multispecific organic anion transporter

C- Causes defective hepatic bilirubin excretion

D- It is an autosomal recessive disorder

**E- Results in an unconjugated hyperbilirubinaemia**

Q92. A 30-year-old woman presents with a three month history of indigestion. There is no history of weight less, anorexia, dysphagia, vomiting or change in bowel habit and abdominal examination is unremarkable. Which one of the following may decrease the accuracy of a 13C-urea breath test?

A- Use of Gaviscon around 10 days ago

B- Use of ranitidine stopping 4 weeks ago

**C- Course of amoxicillin stopping 3 weeks ago**

D- Use of lansoprazole stopping 6 weeks ago

E- Current use of the combined oral contraceptive pill

Q93. A 40-year-old man is investigated for abnormal liver function tests. It is decided to perform a liver biopsy. Which one of the following is a contraindication to liver biopsy?

A- ALT of 2,212 iu/l

B- Aspirin therapy

C- Platelet count of 100 \* 109/l

D- Body mass index of 33 kg/m^2

**E- Bile duct dilatation**

Q94. Which one of the following is least likely to cause malabsorption?

A- Systemic sclerosis

B- Cystic fibrosis

C- Primary biliary cirrhosis

D- Whipple's disease

**E- Haemochromatosis**

Q95. A 42-year-old woman is investigated for lethargy and diarrhoea. Investigations reveal positive antiendomysial antibodies. Each of the following food stuffs should be avoided, except:

A- Beer

B- Rye

**C- Maize**

D- Bread

E- Pasta

Q96. Which one of the following statements best describes the prevention and treatment of hepatitis C?

A- No vaccine is available and treatment is only successful in around 10-15% of patients

B- No vaccine and no treatment is available

C- A vaccine is available and treatment is successful in around 50% of patients

D- A vaccine is available but no treatment has been shown to be effective

**E- No vaccine is available but treatment is successful in around 50% of patients**

Q97. The most common type of inherited colorectal cancer:

A- Familial adenomatous polyposis

B- Li-Fraumeni syndrome

**C- Hereditary non-polyposis colorectal carcinoma**

D- Fanconi syndrome

E- Peutz-Jeghers syndrome

Q98. Which one of the following statements regarding hepatitis C is correct?

A- Cannot be transmitted vertically from mother to child

**B- Interferon-alpha and ribavirin are the treatments of choice**

C- It is more infectious than hepatitis B following a needle stick injury

D- Breast feeding is contraindicated in mothers with hepatitis C

E- HCV RNA is the initial investigation of choice for at-risk groups

Q99. A 17-year-old girl presents with a 6 week history of nausea and abdominal discomfort. Routine blood tests reveal the following. Hb 10.9 g/dl WBC 6.7 \*109 /l Platelets 346 \*109 /l Calcium 2.33 mmol/l Bilirubin 7 µmol/l ALP 262 u/l ALT 35 u/l What is the most likely diagnosis?

A- Alcoholic liver disease

B- Cholangiocarcinoma

**C- Pregnancy**

D- Gallstones

E- Primary biliary cirrhosis

Q100. A 43-year-old man presents with diarrhoea and rectal bleeding for the past ten days. On examination he has brown pigmented lesions on his lips and palms but abdominal and rectal examination is unremarkable. What is the most likely cause for this presentation?

A- Intussusception

B- Angiodysplasia

C- Meckel's Diverticulum

**D- Colon cancer**

E- Diverticular abscess

Q101. A 36-year-old man is reviewed in clinic. He has recently been started on mesalazine 400mg tds for ulcerative colitis. Which one of the following adverse effects is least likely to be attributable to mesalazine?

A- Interstitial nephritis

B- Headaches

C- Acute pancreatitis

D- Agranulocytosis

**E- Infertility**

Q102. A 45-year-old man is admitted to the Emergency Department with severe abdominal pain. He smokes 20 cigarettes a day and drinks approximately 50 units of alcohol per week. He also complains of sudden deterioration in vision. Fundoscopy reveals shows multiple micro infarcts (cotton wool spots). Which investigation would best confirm the most likely diagnosis?

A- Gastroscopy

B- Serum glucose

**C- Amylase**

D- Biliary USS

E- ECG

Q103. A 27-year-old female is referred to the medical outpatient clinic due to a long history of fatigue and joint pains. An autoimmune screen is done which is positive for smooth muscle antibodies. What is the most appropriate next investigation?

**A- Liver function tests**

B- Thyroid function tests

C- Creatine kinase

D- Serum glucose

E- Electrocardiogram

Q104. Which one of the following conditions is least likely to develop following hepatitis B infection?

A- Glomerulonephritis

B- Hepatocellular carcinoma

**C- Acute pancreatitis**

D- Chronic infection

E- Polyarteritis nodosa

Q105. Which one of the following is not associated with villous atrophy on jejunal biopsy?

A- Tropical sprue

B- Coeliac disease

C- Hypogammaglobulinaemia

**D- Familial Mediterranean Fever**

E- Whipple's disease

Q106. A 34-year-old male is admitted with central abdominal pain radiating through to the back and vomiting. The following results are obtained: Amylase 1,245 u/dl Which one of the following medications is most likely to be responsible?

A- Phenytoin

**B- Sodium valproate**

C- Metoclopramide

D- Sumatriptan

E- Pizotifen

Q107. A 59-year-old woman presents with dysphagia. There is no history of heartburn, weight loss or change in bowel habit. During endoscopy there is some difficulty passing through the lower oesophageal sphincter but no other abnormality is noted. Which one of the following tests is most likely to reveal the diagnosis?

A- Oesophageal biopsy

**B- Oesophageal manometry**

C- Plain chest x-ray

D- Endoscopy ultrasound

E- CT thorax

Q108. Which of the following is not a recognised complication of coeliac disease?

**A- Hypersplenism**

B- Osteoporosis

C- Lactose intolerance

D- Oesophageal cancer

E- Subfertility

Q109. A 43-year-old man with type 2 diabetes mellitus presents with lethargy. His current medications include metformin and gliclazide, although the gliclazide may soon be stopped due to his obesity. A number of blood tests are ordered which reveal the following: HbA1c 8.2% Ferritin 204 ng/ml Bilirubin 23 µmol/l ALP 162 u/l ALT 120 u/l AST 109 u/l On discussing these results he states that he does not drink alcohol. What is the most likely cause of these abnormal results?

A- Metformin-induced steatohepatitis

B- Haemochromatosis

C- Acute hepatitis secondary to gliclazide

D- Cryptogenic cirrhosis

**E- Non-alcoholic fatty liver disease**

Q110. A 45-year-old man with a history of alcohol excess is diagnosed as having grade 3 oesophageal varices during an outpatient endoscopy. Of the following options, what is the most appropriate management to prevent variceal bleeding?

**A- Propranolol**

B- Isosorbide mononitrate

C- Endoscopic sclerotherapy

D- Terlipressin

E- Lansoprazole

Q111. A 54-year-old female presents with a 3 month history of dysphagia affecting both food and liquids from the start, along with occasional symptoms of heartburn. What is the most likely underlying diagnosis?

A- Pharyngeal pouch

B- Gastric adenocarcinoma

C- Benign stricture

D- Oesophageal cancer

**E- Achalasia**

Q112. A 78-year-old woman is admitted with a productive cough and pyrexia to hospital. Chest x-ray shows a pneumonia and she is commenced on intravenous ceftriaxone. Four days following admission a stool sample is sent because of diarrhoea. This confirms the suspected diagnosis of Clostridium difficile diarrhoea and a 10-day course of oral metronidazole is started. After 10 days her diarrhoea is ongoing but she remains clinically stable. What is the most appropriate treatment?

**A- Oral vancomycin for 14 days**

B- IV vancomycin for 3 days

C- Oral rifampicin for 7 days

D- Oral clindamycin for 7 days

E- Oral metronidazole for a further 7 days

Q113. A 25-year-old man presents with bloody diarrhoea associated with systemic upset. Blood tests show the following: Hb 13.4 g/dl Platelets 467 \* 109 /l WBC 8.2 \* 109 /l CRP 89 mg/l A diagnosis of ulcerative colitis is suspected. Which part of the bowel is most likely to be affected?

A- Sigmoid colon

**B- Rectum**

C- Ascending colon

D- Descending colon

E- Terminal ileum

Q114. A 31-year-old woman presents with symptoms consistent with coeliac disease. Which one of the following tests should be used first-line when screening patients for coeliac disease?

A- Anti-casein antibodies

**B- Tissue transglutaminase antibodies**

C- Anti-gliadin antibodies

D- Xylose absorption test

E- Anti-endomyseal antibodies

Q115. Which one the following disorders is most strongly associated with primary biliary cirrhosis?

A- Systemic sclerosis

B- Thyroid disease

**C- Sjogren's syndrome**

D- Rheumatoid arthritis

E- Systemic lupus erythematous

Q116. A 54-year-old female is diagnosed with primary biliary cirrhosis. What is her increased risk of developing hepatocellular cancer, compared to a standard population?

A- 50% increased risk

B- 3-fold increased risk

C- 5-fold increased risk

D- 10-fold increased risk

**E- 20-fold increased risk**

Q117. A 71-year-old man presents with two year history of intermittent problems with swallowing. His wife has also noticed he has halitosis and is coughing at night. He has a past medical history of type 2 diabetes mellitus but states he is otherwise well. Of note his weight is stable and he has a good appetite. Clinical examination is unremarkable. What is the most likely diagnosis?

A- Oesophageal cancer

B- Hiatus hernia

**C- Pharyngeal pouch**

D- Oesophageal candidiasis

E- Benign oesophageal stricture

Q118. A 27-year-old woman with chronic left iliac fossa pain and alternating bowel habit is diagnosed with irritable bowel syndrome. Initial treatment is tried with a combination of antispasmodics, laxatives and anti-motility agents. Unfortunately after 6 months there has been no significant improvement in her symptoms. According to recent NICE guidelines, what is the most appropriate next step?

**A- Low-dose tricyclic antidepressant**

B- Cognitive behavioural therapy

C- Refer for sigmoidoscopy

D- Trial of probiotics

E- Selective serotonin reuptake inhibitor

Q119. A 29-year-old man presents with a nine day history of watery diarrhoea that developed one week after returning from India. He had travelled around northern India for two months. On examination he is apyrexial and his abdomen is soft and non-tender. What is the most likely causative organism?

A- Amoebiasis

**B- Giardiasis**

C- Campylobacter

D- Shigella

E- Salmonella

Q120. Which one of the following is least useful in assessing the severity of a patient with liver cirrhosis?

**A- ALT**

B- Prothrombin time

C- Bilirubin

D- The presence of ascites

E- The presence of encephalopathy

Q121. A 34-year-old woman with a history of alcohol excess is admitted with abdominal swelling to the Acute Medical Unit. A diagnosis of ascites secondary to liver cirrhosis is made and paracentesis is performed. The serum creatinine on admission is 95 µmol/l. Ten days after admission urine output decreases significantly and blood tests reveal: Na+ 129 mmol/l K + 3.7 mmol/l Urea 14.2 mmol/l Creatinine 221 µmol/l Albumin is given to correct suspected hypovolaemia. What is the most appropriate further management?

A- Octreotide

B- Propranolol

**C- Terlipressin**

D- Acetylcysteine

E- Dopamine

Q122. A 22-year-old male blood donor is noted to have the following blood results: Bilirubin 41 µmol/L ALP 84 U/L ALT 23 U/L Albumin 41 g/L Dipstick urinalysis No bilirubinuria He has recently complained of coryzal symptoms and a non-productive cough. What is the most likely diagnosis?

**A- Gilbert's syndrome**

B- Dubin-Johnson syndrome

C- Rotor syndrome

D- Hepatitis C infection

E- Infectious mononucleosis

Q123. A 29-year-old Russian man who has recently arrived into the country presents with fever and feeling generally unwell. His temperature is 38.2ºC and pulse 96/min. On examination a grey coating is seen surrounding the tonsils and there is extensive cervical lymphadenopathy. What is the most likely diagnosis?

A- Dengue fever

B- Typhoid

C- Paratyphoid

D- Actinomycosis

**E- Diphtheria**

Q124. A 29-year-old female is noted to have an elevated bilirubin during a viral illness. Gilbert's syndrome is suspected. Which one of the following tests may confirm the diagnosis?

A- Bromsulphthalein excretion test

B- Ammonium chloride acidification test

C- Urine analysis

**D- Nicotinic acid test**

E- Faecal fat excretion

Q125. What percentage of patients with Peutz-Jeghers syndrome will have died from a related cancer by the age of 60 years?

A- 2-3%

**B- 50%**

C- 5-7%

D- >95%

E- 10-20%

Q126. A 45-year-old man with a history of alcoholic liver disease presents with abdominal distension. Examination reveals tense ascites which is drained. What is the appropriate type of diuretic to help prevent reaccumulation of ascites?

**A- Aldosterone antagonist**

B- Loop diuretic

C- Thiazide diuretic

D- Osmotic diuretic

E- Carbonic anhydrase inhibitor

Q127. Which one of the following patients is most likely to require screening for hepatocellular carcinoma?

**A- A 45-year-old man with liver cirrhosis secondary to hepatitis C**

B- A 33-year-old man with HIV. He is taking antiretroviral therapy

C- A 22-year-old man with alpha-1 antitrypsin deficiency. He has no evidence of current liver disease

D- A 52-year-old woman with alcohol-related liver cirrhosis who is still drinking

E- A 75-year-old man who drinks 100 units / week. He has no current signs of liver disease

Q128. A 25-year-old intravenous drug user with chronic hepatitis C becomes pregnant. Approximately what is the chance of the virus being transmitted to her child?

**A- <10%**

B- 10-20%

C- 20-30%

D- 30-40%

E- 40-50%

Q129. A 22-year-old man is investigated for weight loss and diarrhoea. A rectal biopsy is taken and reported as follows: Deep inflammatory infiltrate from the mucosa to the lamina propria Numerous granulomata noted What is the most likely diagnosis?

**A- Crohn's disease**

B- Rectal carcinoma-in-situ

C- Tuberculosis

D- Laxative abuse

E- Ulcerative colitis

Q130. A 59-year-old woman is admitted to the Emergency Department with a productive cough and pyrexia. She is usually fit and well but is undergoing investigation for dysphagia. This has been present for the past 3 months and affects both food and drink. A chest x-ray shows an air-fluid level behind a normalsized heart. What is the most likely diagnosis?

A- Massive pericardial effusion

B- Tuberculosis

**C- Achalasia**

D- Pharyngeal pouch

E- Hiatus hernia

Q131. A 31-year-old woman is reviewed in clinic. She has been referred by her GP with an 8 month history of abdominal discomfort associated with bloating. Which one of the following tests is it least useful to perform before making a positive diagnosis of irritable bowel syndrome?

A- Erythrocyte sedimentation rate

**B- Thyroid function tests**

C- Full blood count

D- C-reactive protein

E- Tissue transglutaminase antibodies

Q132. A 43-year-old man is reviewed in the gastroenterology clinic. He has had troublesome dyspepsia for the past six months which has not settled with proton pump inhibitor therapy. During the review of systems he also reports passing 6-7 watery stools per day. An OGD 3 weeks ago showed gastric erosions and ulcers. Which one of the following investigations is most likely to be diagnostic?

A- Serum amylase

B- Urea breath test for Helicobacter pylori

**C- Fasting gastrin**

D- 14C-xylose breath test

E- CT abdomen

Q133. A 55-year-old man with a history of gallstone disease presents with a two day history of pain in the right upper quadrant. He has feels 'like I have flu' and his wife reports he has had a fever for the past day. On examination his temperature is 38.1ºC, blood pressure 100/60 mmHg, pulse 102/min and he is tender in the right upper quadrant. His sclera have a yellow-tinge. What is the most likely diagnosis?

A- Pancreatic cancer

B- Biliary colic

**C- Ascending cholangitis**

D- Acute cholecystitis

E- Acute viral hepatitis

Q134. You are asked to review a 24-year-old man who has been admitted with an exacerbation of Crohn's disease. Despite prednisolone and mesalazine therapy for the past 3 weeks he is still passing 6-7 watery stools per day. He has lost a considerable amount of weight during this period. On examination he is apyrexial, haemodynamically stable and his abdomen is soft and non-tender. What is the most appropriate next step?

A- Metronidazole

B- Infliximab

C- Methotrexate

**D- Azathioprine**

E- Surgery

Q135. A 59-year-old female with a history of hypothyroidism presents with fatigue. Blood tests reveal the following: Hb 9.4 g/dl MCV 121 fl Plt 156 \* 109 /l WBC 4.3 \* 109 /l What is the most appropriate investigation to perform next?

A- Antral biopsy

B- Bone marrow biopsy

C- Lactate dehydrogenase

**D- Intrinsic factor antibodies**

E- Barium enema

Q136. Which one of the following is least associated with hepatosplenomegaly?

A- Glandular fever

B- Chronic myeloid leukaemia

C- Alcoholic liver disease

D- Amyloidosis

**E- Infective endocarditis**

Q137. Which one of the following is least associated with the development of colorectal cancer in patients with ulcerative colitis?

A- Unremitting disease

B- Disease duration > 10 years

C- Onset before 15 years old

D- Poor compliance to treatment

**E- Disease confined to the rectum**

Q138. A 44-year-old obese female is noted to have gallstones during an abdominal ultrasound, which was requested due to repeated urinary tract infections. Apart from the repeated UTIs she is otherwise well. What is the most appropriate management of the gallstones?

A- Ursodeoxycholic acid

B- Extracorporeal Short Wave Lithotripsy

C- List for laparoscopic cholecystectomy when 50 years old

**D- Observation**

E- List now for laparoscopic cholecystectomy

Q139. Which of the following conditions is least associated with Helicobacter pylori?

A- Gastric carcinoma

B- B cell lymphoma of MALT tissue

**C- Gastro-oesophageal reflux disease**

D- Atrophic gastritis

E- Peptic ulcer disease

Q140. A 54-year-old man who is known to have gastric cancer is reviewed in clinic. He asks you about a rash he has developed. Which of the following skin disorders is most associated with gastric cancer?

A- Erythema gyratum repens

B- Necrolytic migratory erythema

C- Sweet's syndrome

D- Acquired ichthyosis

**E- Acanthosis nigricans**

Q141. Each one of the following is associated with pancreatic cancer, except:

A- Chronic pancreatitis

B- Smoking

**C- Blood group O**

D- Diabetes

E- BRCA2 gene

Q142. A 36-year-old man presents with dyspepsia. No alarm symptoms are present. This is his first episode and he has no significant medical history of note. A test-and-treat strategy is agreed upon. What is the most appropriate investigation to test for Helicobacter pylori?

A- Gastric biopsy

B- CLO test (rapid urease test)

C- Stool culture

D- Hydrogen breath test

**E- 13C-urea breath test**

Q143. A 39-year-old man with a history of alcohol excess presents to the Emergency Department with a 2 day history of severe epigastric pain. His amylase is found to be 1260. What is the best marker of severity?

**A- CRP**

B- Amylase (on admission)

C- Pain scores

D- Lipase (on admission)

E- Number of similar previous admissions

Q144. Of the following, which one is the most useful prognostic marker in paracetamol overdose?

A- ALT

**B- Prothrombin time**

C- Paracetamol levels at presentation

D- Paracetamol levels at 12 hours

E- Paracetamol levels at 24 hours

## **Chapter 3 Cardiology**

Q1. Which of the following is least associated with mitral valve prolapse?

A- Osteogenesis imperfecta

B- Pseudoxanthoma elasticum

C- Turner's syndrome

D- Marfan's syndrome

**E- Acromegaly**

Q2. A 54-year-old man with angina has a percutaneous coronary intervention with insertion of a drugeluting stent. What is the single most important risk factor for stent thrombosis?

A- Age of patient

**B- Premature withdrawal of antiplatelet therapy**

C- Failing to adhere to cardiac rehabilitation program

D- Duration of procedure

E- History of diabetes mellitus

Q3. Which one of the following complications is least associated with ventricular septal defects?

A- Right heart failure

B- Aortic regurgitation

C- Eisenmenger's complex

D- Infective endocarditis

**E- Atrial fibrillation**

Q4. A 23-year-old man with a family history of sudden cardiac death is diagnosed as having hypertrophic obstructive cardiomyopathy. Which one of the following is the strongest marker of poor prognosis?

A- Mitral regurgitation

B- Apical hypertrophy

C- Systolic anterior motion of the anterior mitral valve leaflet

**D- Septal wall thickness of > 3cm**

E- Asymmetric hypertrophy

Q5. A 65-year-old man with no significant past medical history is admitted to the Emergency Department. His ECG is consistent with an anterior myocardial infarction. Unfortunately he develops cardiac arrest shortly after arriving in the department. What is the most common cause of death in patients following a myocardial infarction?

A- Pulmonary embolism

B- Cardiogenic shock

C- Papillary muscle rupture

**D- Ventricular fibrillation**

E- Complete heart block

Q6. A 62-year-old man is admitted with pyrexia and found to have infective endocarditis. Which one of the following is most associated with a good prognosis?

A- Staphylococcus aureus infection

B- Culture negative endocarditis

**C- Streptococcus viridans infection**

D- Low complement levels

E- Prosthetic valve endocarditis

Q7. You are called to assess a man who has collapsed in the clinic waiting room. A staff nurse has already bleeped the cardiac arrest team. On arrival the man is laid on his back. You open the airway with a head-tilt chin lift- after assessing for 10 seconds there are no signs of breathing. What is the most appropriate next step?

A- Start chest compressions at a ratio of 15:2

B- Place in the recovery position

C- Check for a carotid pulse for 10 seconds

D- Give 2 rescue breaths

**E- Start chest compressions at a ratio of 30:2**

Q8. Which part of the jugular venous waveform may be exaggerated in tricuspid regurgitation?

A- x descent

**B- v wave**

C- y descent

D- a wave

E- c wave

Q9. A 72-year-old male is admitted to the Emergency Room following a collapse at church. ECG reveals dissociation between the P and QRS complexes with a rate of 40 / minute. Which one of the following clinical findings may also be found?

A- Loud S1

B- Narrow pulse pressure

C- Giant v waveforms in the JVP

**D- Variable intensity of S1**

E- Soft S2

Q10. A 61-year-old woman who is normally fit and well is admitted with chest pain. An ECG shows anterolateral T wave inversion. The troponin T value at 12 hours is 0.54. On discharge her medications include aspirin, atorvastatin, bisoprolol and ramipril. Which one of the following statements best describes the role of clopidogrel in this situation? greater than 1.5% greater than 5%

A- Is only given if aspirin is contraindicated

B- Should be prescribed for life for patients < 65 years old

**C- Should be prescribed for the next 12 months for patients who have a 6 month mortality risk of**

D- Should be prescribed for the next 12 months for patients < 65 years old

E- Should be prescribed for the next 12 months for patients who have a 12 month mortality risk of

Q11. A 26-year-old female is admitted to hospital with palpitations. ECG shows a shortened PR interval and wide QRS complexes associated with a slurred upstroke seen in lead II. What is the definitive management of this condition?

**A- Accessory pathway ablation**

B- Lifelong aspirin

C- AV node ablation

D- Lifelong amiodarone

E- Permanent pacemaker

Q12. Which one of the following is least likely to cause dilated cardiomyopathy?

**A- Wilson's disease**

B- Haemochromatosis

C- Coxsackie B

D- Hypertension

E- Alcohol

Q13. Each one of the following is associated with atrial myxoma, except:

A- Clubbing

B- Mid-diastolic murmur

C- Pyrexia

**D- 'J' wave on ECG**

E- Atrial fibrillation

Q14. A 71-year-old woman is admitted with acute dyspnoea to the Emergency Department. Oxygen saturations are 94% on 28% supplementary oxygen and her respiratory rate is 30/min. A rapid B-type natriuretic peptide (BNP) assay is reported as follows: BNP 62 pg/ml What is the best interpretation of this result?

A- No conclusion can be drawn from this result

B- Pulmonary embolism is the most likely cause of her symptoms

C- If a further BNP level is above 50 pg/ml after one hour then this is diagnostic of heart failure

**D- Heart failure is unlikely to be the cause of her dyspnoea**

E- Heart failure is highly likely to be the cause of her dyspnoea

Q15. A 44-year-old man is seen in the cardiology clinic. For the past 6 months he has been experiencing episodes of palpitations associated with pre-syncopal symptoms. An ECG taken in clinic shows T wave inversion in leads V1-3 associated with a notch at the end of the QRS complex. He is known to have a family history of sudden cardiac death. What is the most likely diagnosis?

**A- Arrhythmogenic right ventricular cardiomyopathy**

B- Catecholaminergic polymorphic ventricular tachycardia

C- Hypertrophic obstructive cardiomyopathy

D- Long QT syndrome

E- Brugada syndrome

Q16. Which one of the following types of hyperlipidaemia are palmar crease xanthoma most commonly associated with?

A- Familial combined hyperlipidaemia

B- Lipoprotein lipase deficiency

C- Familial hypertriglyceridaemia

**D- Remnant hyperlipidaemia**

E- Familial hypercholesterolaemia

Q17. Which one of the following is least associated with ST depression on ECG?

A- Myocardial ischaemia

B- Syndrome X

**C- Acute pericarditis**

D- Hypokalaemia

E- Digoxin

Q18. Which one of the following is the strongest risk factor for developing infective endocarditis?

**A- Previous episode of infective endocarditis**

B- Intravenous drug use

C- Previous rheumatic fever

D- Permanent central venous access line

E- Recent dental surgery

Q19. A 71-year-old man who had a bioprosthetic aortic valve replacement three years ago is reviewed. What antithrombotic therapy is he likely to be taking?

A- Nothing

**B- Aspirin**

C- Warfarin: INR 2.0-3.0

D- Aspirin + clopidogrel

E- Warfarin: INR 3.0-4.0

Q20. Which one of the following conditions is most associated with aortic dissection?

A- Acromegaly

B- Actinomycosis

C- Sarcoidosis

**D- Bicuspid aortic valve**

E- Adult polycystic kidney disease

Q21. Which of the following congenital heart defects is associated with a bicuspid aortic valve

A- Tetralogy of Fallot

B- Ventricular septal defect

C- Atrial septal defect

**D- Coarctation of the aorta**

E- Transposition of the great arteries

Q22. A 71-year-old woman is reviewed in the falls clinic. Her blood pressure is 146/ 94 mmHg. This is confirmed on a second reading. In line with recent NICE guidance, what is the most appropriate next-step? review following

A- Ask her to come back in 6 months for a blood pressure check

B- Arrange 3 blood pressure checks with the practice nurse over the next 2 weeks with medical

**C- Arrange ambulatory blood pressure monitoring**

D- Reassure her this is acceptable for her age

E- Start treatment with a calcium channel blocker

Q23. Which of the following conditions is not associated with the development of aortic regurgitation?

A- Rheumatic fever

B- Ankylosing spondylitis

C- Marfan's syndrome

D- Syphilis

**E- Dilated cardiomyopathy**

Q24. A 67-year-old man with a history of chronic obstructive pulmonary disease and ischaemic heart disease is taken to the Emergency Department with dyspnoea. On examination his respiratory rate is 24 / min, JVP is not elevated and crackles are heard in both lung bases. Which other finding would most strongly indicate that his dyspnoea is secondary to isolated left ventricular failure?

A- Pulsus alternans

**B- Gallop rhythm**

C- Tachycardia

D- Peripheral oedema

E- Cardiomegaly on chest x-ray

Q25. A 47-year-old man is admitted to hospital following an acute coronary syndrome. He has a history peptic ulcer disease and his cardiologist decides to use clopidogrel. What is the mechanism of action of clopidogrel?

A- Non-selective phosphodiesterase inhibitor

B- Phosphodiesterase V inhibitor

C- Inhibits ATP binding to its platelet receptor

**D- Inhibits ADP binding to its platelet receptor**

E- Glycoprotein IIb/IIIa inhibitor

Q26. A 72-year-old man presents to the Emergency Department with a broad complex tachycardia. Which of the following features would make it more likely that this was due to a supraventricular tachycardia rather than a ventricular tachycardia?

A- History of ischaemic heart disease

B- Left axis deviation

C- Capture beats

**D- Absence of QRS concordance in chest leads**

E- QRS complex greater than 160 ms

Q27. A 66-year-old man presents with shortness-of-breath on exertion. On examination his blood pressure is 128/76 mmHg, pulse 78 / min and regular. Auscultation of his chest reveals an early diastolic murmur. Which one of the following conditions is most associated with this kind of murmur?

A- Atrial septal defect

B- Mitral stenosis

C- Hypertrophic obstructive cardiomyopathy

**D- Aortic regurgitation**

E- Mitral regurgitation

Q28. A 76-year-old woman is admitted with palpitations. During the cardiovascular examination you notice irregular cannon 'a' waves. Which one of the following would account for this finding?

**A- Atrio-ventricular nodal re-entry tachycardia**

B- Atrial fibrillation with tricuspid stenosis

C- Ventricular tachycardia with 1:1 ventricular-atrial conduction

D- Complete heart block

E- Tricuspid regurgitation

Q29. A 57-year-old man presents to the Emergency Department with a 15 minute history of severe central chest pain radiating to his left arm. ECG shows T-wave inversion in leads I, V5 and V6. Which coronary artery is most likely to be affected?

A- Left circumflex

B- Posterior interventricular

C- Left main stem

D- Right coronary

E- Left anterior descending

Q30. A 62-year-old female with a history of mitral regurgitation attends her dentist, who intends to perform dental polishing. She is known to be penicillin allergic. What prophylaxis against infective endocarditis should be given?

A- Oral doxycycline

B- Oral erythromycin

**C- No antibiotic prophylaxis needed**

D- Oral ofloxacin

E- Oral clindamycin

Q31. What is the most common cardiac defect seen in Marfan's syndrome

A- Mitral valve prolapse

B- Coarctation of the aorta

C- Bicuspid aortic valve

**D- Dilation of the aortic sinuses**

E- Ventricular septal defect

Q32. A 72-year-old man who has a history of ischaemic heart disease and left ventricular dysfunction is admitted with dyspnoea. He has not taken his diuretics for three days as he ran out. On examination you note bilateral crackles to the midzones and a respiratory rate of 30/min. Which other clinical finding is most specific with this presentation?

A- Bisferiens pulse

B- Wide pulse pressure

C- Warm peripheries

**D- Pulsus alternans**

E- Fourth heart sound (S4)

Q33. A 74-year-old woman is reviewed. She recently had ambulatory blood pressure monitoring that showed an average reading of 142/90 mmHg. There is no significant past medical history of note other than hypothyroidism. Her 10-year cardiovascular risk score is 23%. What is the most appropriate management?

**A- Start amlodipine**

B- Start bendroflumethiazide

C- No treatment required- monitor blood pressure every year

D- Start ramipril

E- Repeat ambulatory blood pressure monitoring

Q34. A 64-year-old man is admitted to the Emergency Department with chest pain radiating through to his back. On examination pulse 90 regular, BP 140/90. A CXR shows mediastinal widening. A CT shows dissection of the descending aorta. What is the most suitable initial management?

A- Observe only

**B- IV labetalol**

C- IV sodium nitroprusside

D- Immediate surgical referral

E- Oral verapamil

Q35. A 52-year-old man is admitted to the Emergency Department. He was found collapsed by neighbours. An ECG on arrival shows torsades de pointes. Which one of his medications is most likely to have contributed to this presentation?

A- Bisoprolol

B- Cimetidine

**C- Risperidone**

D- Phenytoin

E- Doxycycline

Q36. Each one of the following is associated with left axis deviation on ECG, except:

A- Left anterior hemiblock

B- Ostium primum ASD

**C- Left posterior hemiblock**

D- Obesity

E- Left bundle branch block

Q37. NICE have produced guidelines on the management of non-ST elevation myocardial infarction (NSTEMI) in which they recommend an approach to treatment based on risk assessment. What cut-off do they recommend for the use of coronary angiography within 96 hours in patients with a NSTEMI?

A- All patients with a 12 month mortality risk of greater than 5%

B- All patients with a 6 month mortality risk of greater than 5%

C- All patients with a 12 month mortality risk of greater than 10%

D- All patients with a 6 month mortality risk of greater than 1.5%

**E- All patients with a 6 month mortality risk of greater than 3%**

Q38. Which one of the following is least associated with prolongation of the PR interval?

A- Digoxin toxicity

**B- Hypocalcaemia**

C- Lyme disease

D- Rheumatic fever

E- Ischaemic heart disease

Q39. A 64-year-old man who is known to have ischaemic heart disease is due to start a chemotherapy regime which includes doxorubicin. His cardiologist wants to accurately assess his left ventricular function as he is concerned the doxorubicin may damage his myocardium. Which one of the following is the most accurate method to determine his left ventricular function?

A- Cardiac computed tomography

B- Echocardiography

C- Exercise ECG

**D- MUGA scan**

E- Coronary angiography

Q40. Your next patient is a 74-year-old woman who is known to have type 2 diabetes mellitus. Her blood pressure has been borderline for a number of weeks now but you have decided she would benefit from treatment. Her latest blood pressure is 146/88 mmHg, HbA1c is 7.5% and her BMI is 25 kg/m^2. What is the most appropriate drug to prescribe?

A- Bisoprolol

B- Bendroflumethiazide

C- Amlodipine

**D- Ramipril**

E- Orlistat

Q41. Which of the following features is not associated with patent ductus arteriosus?

A- Continuous 'machinery' murmur

**B- Bisferiens pulse**

C- Heaving apex beat

D- Wide pulse pressure

E- Left subclavicular thrill

Q42. A 78-year-old woman with no past medical history of note is admitted with palpitations and shortness of breath, having been unwell for the past three days. Examination reveals an irregularly irregular pulse of 130 bpm, blood pressure of 108/70 mmHg, oxygen saturations of 94% on air and bibasal lung crepitations. What is the most appropriate therapy to control her heart rate?

A- Amiodarone

B- Flecainide

C- Verapamil

**D- Digoxin**

E- Bisoprolol

Q43. A 57-year-old man with NYHA class III heart failure is currently treated with furosemide and ramipril. What is the most suitable beta-blocker to add to improve his long-term prognosis?

A- Acebutolol

B- Labetalol

**C- Bisoprolol**

D- Sotalol

E- Esmolol

Q44. You review a 62-year-old man who has recently been discharged from hospital in Hungary following a myocardial infarction. He brings a copy of an echocardiogram report which shows his left ventricular ejection fraction is 48%. On examination his pulse is 78 / min and regular, blood pressure is 124 / 72 mmHg and his chest is clear. His current medications include aspirin, simvastatin and lisinopril. What is the most appropriate next step in terms of his medication?

A- Add atenolol

B- Add furosemide

**C- Add bisoprolol**

D- Add isosorbide mononitrate

E- Make no changes

Q45. Which one of the following is least associated with aortic regurgitation?

A- Rheumatic fever

**B- William's syndrome**

C- Syphilis

D- Bicuspid aortic valve

E- Post-rheumatic disease

Q46. A 71-year-old man who is known to have atrial fibrillation comes for review. He had a transient ischaemic attack two weeks ago and takes bendroflumethiazide for hypertension but is otherwise well. His latest blood pressure is 124/76 mmHg. You are discussing management options to try and reduce his future risk of having a stroke. What is his CHA2DS2-VASc score?

A- 1

B- 2

C- 3

**D- 4**

E- 5

Q47. A 64-year-old female presents with central chest pain radiating down her left arm of 20 minutes duration. On examination the pulse is 90 bpm and regular and the BP is 205/110 mmHg. ECG shows 2 mm ST elevation in leads V2-6. Morphine and aspirin have already been given. What is the most appropriate next step?

A- Observe

B- IV streptokinase

C- IV alteplase

**D- IV GTN**

E- Temporary pacing

Q48. A 65-year-old man is admitted to the Emergency Department with chest pain, nausea and feeling lethargic. He has a history of type 1 diabetes mellitus and is known to have chronic kidney disease stage 4 secondary to diabetic nephropathy. An ECG taken on admission shows widespread ST elevation. Bloods tests show the following: Na+ 140 mmol/l K + 5.8 mmol/l Urea 26 mmol/l Creatinine 305 µmol/l His renal function one month ago was as follows: Na+ 142 mmol/l K + 4.9 mmol/l Urea 7.9 mmol/l Creatinine 199 µmol/l An echocardiogram shows a small effusion. What is the most appropriate next step in management?

A- Oral colchicine

B- Pericardiectomy

C- Pericardiocentesis

D- Intravenous corticosteroids

**E- Haemodialysis**

Q49. A 62-year-old man is reviewed two hours after a successful elective DC cardioversion for atrial fibrillation. Six weeks ago he presented in fast atrial fibrillation. A decision was made at the time to warfarinise him for six weeks after which he was to be cardioverted. During this time he had a normal transthoracic echocardiogram. He has no past medical history of note other than treatment for a basal cell carcinoma. What is the most appropriate plan regarding anticoagulation?

A- Can stop immediately

B- Continue warfarinisation for 1 week then review following

C- Lifelong warfarin

D- Lifelong aspirin

**E- Continue warfarinisation for 4 weeks then review**

Q50. Which one of the following is an example of a centrally acting antihypertensive?

A- Minoxidil

B- Hydralazine

C- Sodium nitroprusside

**D- Moxonidine**

E- Diazoxide

Q51. A 28-year-old female with a history of primary amenorrhoea and short stature is reviewed in clinic. On examination blood pressure in her right arm is 175/84 mmHg and 170/82 mmHg in her left. What is the most likely cause for her elevated blood pressure?

**A- Coarctation of the aorta**

B- Conn's syndrome

C- Essential hypertension

D- Renal aplasia

E- Renal artery stenosis

Q52. Eight months after having a prosthetic heart valve a patient develops infective endocarditis. What is the most likely causative organism?

**A- Streptococcus viridans**

B- Staphylococcus aureus

C- Staphylococcus epidermidis

D- Coxiella burnetii

E- One of the HACEK group

Q53. Which one of the following is not a recognised treatment in primary pulmonary hypertension?

**A- Endothelin-1 receptor agonists**

B- Heart-lung transplant

C- IV prostaglandins

D- Diuretics

E- Calcium channel blockers

Q54. Which part of the jugular venous waveform is associated with the fall in atrial pressure during ventricular systole?

A- y descent

B- v wave

**C- x descent**

D- c wave

E- a wave

Q55. A 55-year-old man is admitted to the Emergency Department with 'tearing' chest pain radiating through to his back. Examination reveals a pulse of 96 / min regular, blood pressure of 130/85 mmHg and oxygen saturations of 97% on room air. A chest x-ray shows mediastinal widening. A CT shows dissection of the ascending aorta. What is the most suitable initial management?

A- IV sodium nitroprusside

B- Oral verapamil

C- Observe only

**D- IV labetalol**

E- Surgical repair

Q56. Each one of the following may cause left bundle branch block, except:

A- Cardiomyopathy

**B- Atrial septal defect**

C- Hypertension

D- Idiopathic fibrosis

E- Ischaemic heart disease

Q57. A 37-year-old woman presents for review. She is 26 weeks pregnant and has had no problems with her pregnancy to date. Blood pressure is 144/92 mmHg, a rise from her booking reading of 110/80 mmHg. Urine dipstick reveals the following: Protein negative Leucocytes negative Blood negative What is the most appropriate description of her condition?

A- Moderate pre-eclampsia

B- Mild pre-eclampsia

**C- Gestational hypertension**

D- Normal physiological change in blood pressure

E- Pre-existing hypertension

Q58. A 68-year-old man with a past history of aortic stenosis is reviewed in clinic. Which one of the following features would most guide the timing of surgery?

**A- Symptomatology of patient**

B- Aortic valve gradient of 50 mmHg

C- Pulse pressure

D- Loudness of murmur

E- Left ventricular ejection fraction

Q59. Which of the following conditions is least associated with coarctation of the aorta?

A- Neurofibromatosis

B- Bicuspid aortic valve

**C- Prader-Willi syndrome**

D- Turner's syndrome

E- Berry aneurysms

Q60. Which one of the following statements regarding prosthetic heart valves is correct? procedures

A- Antibiotic prophylaxis is still recommended for patients with mechanical valves who have dental

B- The majority of mechanical valves are of the ball-and-cage type

C- Bioprosthetic valves are now usually obtained from human cadavers

D- The target INR for patients with mechanical aortic valves is 3.0-4.0

**E- Mechanical valves have a lower failure rate than bioprosthetic valves**

Q61. Which one of the following statements regarding percutaneous coronary intervention (PCI) is incorrect?

A- Stent thrombosis usually occurs in the first month

B- Restenosis is more common than stent thrombosis

C- Around 95% of patients have a stent fitted during a PCI

D- Renal impairment is a risk factor for restenosis

**E- Patients with drug-eluting stents require a shorter duration of clopidogrel therapy**

Q62. You review a 75-year-old man who complains of palpitations. He was diagnosed with atrial fibrillation around four months ago and started on digoxin 125 mcg od and warfarin. Despite this treatment he still feels his 'heart race' regularly. On examination his pulse is 96 / min irregularly irregular and respiratory examination is unremarkable. What is the most appropriate next step in management?

A- Switch digoxin for verapamil

B- Refer for electrical cardioversion

C- Add amiodarone

**D- Add bisoprolol**

E- Make no change to his regular medication but prescribe flecainide as a 'pill in the pocket'

Q63. A 34-year-old man is investigated following an unexplained collapse whilst at work. A resting ECG shows convex ST elevation in V1-V3 with a partial right bundle branch block pattern. What is the most likely diagnosis?

A- Catecholaminergic polymorphic ventricular tachycardia

B- Hypertrophic obstructive cardiomyopathy

C- Arrhythmogenic right ventricular cardiomyopathy

**D- Brugada syndrome**

E- Normal variant

Q64. A 74-year-old man is admitted with chest pain associated with ECG changes. A troponin T taken 12 hours after admission indicates an acute myocardial infarction. Which one of the following is most likely to predict a poor prognosis?

A- History of diabetes mellitus

B- Loss of heart rate variability

**C- Left ventricular ejection fraction of 40%**

D- Diastolic blood pressure of 110 mmHg

E- Male sex

Q65. A 62-year-old patient presents to the Emergency Department with a 25 minute history of crushing central chest pain. ECG shows ST elevation in leads I and aVL. Which coronary territory is likely to be affected?

**A- Lateral**

B- Posterior

C- Anteroseptal

D- Anterolateral

E- Inferior

Q66. A 72-year-old man presents with lethargy and palpitations for the past four or five days. On examination his pulse is 123 bpm irregularly irregular, blood pressure is 118/70 mmHg and his chest is clear. An ECG confirms atrial fibrillation. What is the appropriate drug to control his heart rate?

A- Amiodarone

**B- Atenolol**

C- Digoxin

D- Amlodipine

E- Flecainide

Q67. A 64-year-old man with a history of ischaemic heart disease and poor left ventricular function presents with a broad complex tachycardia of 140 bpm. On examination blood pressure is 110/74 mmHg. Fusion and capture beats are seen on the 12 lead ECG. What is the first line drug management?

A- Sotalol

**B- Amiodarone**

C- Adenosine

D- Flecainide

E- Lidocaine

Q68. You have ordered a B-type natriuretic peptide (BNP) test on a patient with suspected heart failure. It has come back as being slightly elevated. Which one of the following factors may account for a falsely elevated BNP?

A- ACE inhibitor therapy

B- Beta-blocker therapy

C- Furosemide therapy

D- Obesity

**E- COPD**

Q69. A 52-year-old female is referred from the Emergency Department with a pulse of 36 beats/min. The ECG shows complete heart block with a narrow QRS complex. Blood pressure is 88/50 mmHg and there is no evidence of heart failure. What is the most appropriate management?

A- Transvenous pacing

B- Transcutaneous pacing

C- Isoprenaline infusion, titrated to heart rate

D- No intervention but cardiac monitoring

**E- Intravenous atropine**

Q70. A 60-year-old man is admitted with severe central chest pain to the resus department. The admission ECG shows ST elevation in leads V1-V4 with reciprocal changes in the inferior leads. Which one of the following is most likely to account for these findings?

A- 75% occlusion of the left anterior descending artery

B- 75% occlusion of the left circumflex artery

C- 75% occlusion of the right coronary artery

D- 100% occlusion of the left circumflex artery

**E- 100% occlusion of the left anterior descending artery**

Q71. A 70-year-old man is admitted to the Acute Medicine Unit as he is pyrexial and feeling generally unwell. He has a history of ischaemic heart disease and had a myocardial infarction 5 years ago. An echocardiogram is arranged which shows a small vegetation around the mitral valve. Blood cultures are taken which are reported as follows: Streptococcus viridans What is the most appropriate antibiotic therapy?

**A- IV benzylpenicillin**

B- IV benzylpenicillin + ceftriaxone

C- IV flucloxacillin + gentamicin

D- IV vancomycin + rifampicin + gentamicin

E- IV vancomycin + benzylpenicillin

Q72. A 54-year-old man with atypical chest pain is referred to cardiology. An exercise ECG shows non-specific ST and T wave changes. Following this an coronary angiogram is performed which demonstrates no evidence of atherosclerosis. A diagnosis of Prinzmetal's angina is suspected. What is the most appropriate first-line treatment?

A- Nicorandil

B- Atenolol

**C- Felodipine**

D- Fluoxetine

E- Isosorbide mononitrate

Q73. A 76-year-old man is reviewed. He was recently admitted after being found to be in atrial fibrillation. This was his second episode of atrial fibrillation. He also takes ramipril for hypertension but has no other history of note. During admission he was warfarinised and discharged with planned follow-up in the cardiology clinic. However, on review today he is found to be in sinus rhythm. What should happen regarding anticoagulation?

A- Stop warfarin

B- Continue warfarin for 1 month

C- Stop warfarin + start aspirin

**D- Continue lifelong warfarin**

E- Continue warfarin for 6 months

Q74. Which of the following is responsible for the rapid depolarisation phase of the myocardial action potential?

**A- Rapid sodium influx**

B- Slow sodium efflux

C- Slow efflux of calcium

D- Efflux of potassium

E- Rapid calcium influx

Q75. Which one of the following types of hyperlipidaemia are eruptive xanthoma most commonly associated with?

**A- Familial hypertriglyceridaemia**

B- Familial hypercholesterolaemia

C- Familial combined hyperlipidaemia

D- Remnant hyperlipidaemia

E- Hyperlipidaemia secondary to nephrotic syndrome

Q76. Which of the following statements concerning the third heart sound is correct?

A- Caused by systolic filling of the ventricle

**B- May be heard in constrictive pericarditis**

C- Associated with atrial septal defects

D- Is characteristically soft in aortic stenosis

E- Caused by atrial contraction against a stiff ventricle

Q77. A 17-year-old female presents with recurrent attacks of collapse. These episodes typically occur without warning and have occurred whilst she was running for a bus. There is no significant past medical history and the only family history of note is that her father died suddenly when he was 38-years-old. What is the likely cause?

A- Vaso-vagal attacks

B- Anxiety

C- Epilepsy

**D- Cardiogenic syncope**

E- Malingering

Q78. A 14-year-old boy is admitted with palpitations and is noted to have a long QT interval. His only past medical history is deafness. What is the likely diagnosis?

A- Leriche's syndrome

B- Wolff-Parkinson White syndrome

**C- Jervell-Lange-Nielsen syndrome**

D- Romano-Ward syndrome

E- Osler-Weber-Rendu syndrome

Q79. Which of the following congenital heart defects may progress to Eisenmenger's syndrome?

A- Tetralogy of Fallot

B- Coarctation of the aorta

**C- Patent ductus arteriosus**

D- Tricuspid atresia

E- Transposition of the great arteries

Q80. What is the normal cross sectional area of the mitral valve?

A- 1-2 sq cm

B- 3-4 sq cm

**C- 4-6 sq cm**

D- 6-8 sq cm

E- 8-10 sq cm

Q81. The use of beta-blockers in treating hypertension has declined sharply in the past five years. Which one of the following best describes the reasons why this has occurred? blockers)

**A- Less likely to prevent stroke + potential impairment of glucose tolerance**

B- Less likely to prevent myocardial infarctions + potential impairment of glucose tolerance

C- High rate of interactions with other commonly prescribed medications (e.g. Calcium channel

D- Increased incidence of reported adverse effects

E- Increased incidence of chronic obstructive pulmonary disease

Q82. A 29-year-old woman is investigated for increasing dyspnoea and feeling generally week and lethargic. Over the past few months she has had five episodes of syncope, some of which occured following exercise. There is no past medical history of note although her grandmother died aged 44 years after suffering increasing shortness-of-breath and syncope. On examination her oxygen saturations are 98% on room air and the pulse is 78 / min. The second heart sound is loud but no murmurs are heard. Auscultation of the chest is unremarkable. What is the most likely diagnosis?

**A- Pulmonary arterial hypertension**

B- Familial pulmonary stenosis

C- Hypertropic obstructive cardiomyopathy

D- Catecholaminergic polymorphic ventricular tachycardia

E- Arrhythmogenic right ventricular dysplasia

Q83. Each one of the following may cause secondary hypertension, except:

**A- Patent ductus arteriosus**

B- Cushing's syndrome

C- Liddle's syndrome

D- 11-beta hydroxylase deficiency

E- Combined oral contraceptive pill

Q84. A 29-year-old woman who is 28 weeks pregnant is reviewed. She has developed pre-eclampsia with her current blood pressure being 156/104 mmHg and the urine dipstick reported as follows: Protein + Leucocytes negative Blood negative There is no oedema and the patient is otherwise asymptomatic. Of the following drugs, which one is least suitable to use?

A- Labetalol

B- Nifedipine

**C- Losartan**

D- Methyldopa

E- Hydralazine

Q85. A 60-year-old man who is investigated for exertional chest pain is diagnosed as having angina pectoris. Which one of the following drugs is most likely to improve his long-term prognosis?

A- Atenolol

**B- Aspirin**

C- Isosorbide mononitrate

D- Ramipril

E- Nicorandil

Q86. Which one of the following is least associated with Tetralogy of Fallot?

A- Right ventricular outflow tract obstruction

B- Overriding aorta

C- Ejection systolic murmur

**D- Left-to-right shunt**

E- Right ventricular hypertrophy

Q87. Each one of the following is an indication for an implantable cardiac defibrillator, except:

A- Previous myocardial infarction with non-sustained VT on 24 hr monitoring

**B- Wolff-Parkinson White syndrome**

C- Hypertrophic obstructive cardiomyopathy

D- Previous cardiac arrest due to VF

E- Long QT syndrome

Q88. A 52-year-old man is seen in the hypertension clinic. He was diagnosed around three months ago and started on ramipril. This has been titrated up to 10mg od but his blood pressure remains around 156/92 mmHg. What is the most appopriate next step in management?

A- Add bendroflumethiazide

B- Add bisoprolol

C- Switch ramipril to perindopril

**D- Add amlodipine**

E- Add losartan

Q89. Which one of the following statements regarding catecholaminergic polymorphic ventricular tachycardia (CPVT) is correct?

A- Resting ECG typically shows T wave inversion in leads V1-V3

B- Beta-blockers are contraindicated in patients with CPVT

C- Is associated with cleft palate

D- In the majority of cases is due to a defect in the potassium channel

**E- Symptoms generally develop before the age of 20 years**

Q90. Which one of the following is least associated with Wolff-Parkinson White syndrome?

A- Mitral valve prolapse

B- Ebstein's anomaly

C- Thyrotoxicosis

**D- Coarctation of the aorta**

E- Hypertrophic cardiomyopathy

Q91. Which one of the following cardiac conditions is most associated with a louder murmur following the Valsalva manoeuvre?

A- Mitral stenosis

B- Aortic stenosis

C- Ventricular septal defect

**D- Hypertrophic obstructive cardiomyopathy**

E- Aortic regurgitation

Q92. You are called to review a 78-year-old man on the surgical wards. He is three days post-op following a colectomy. He was recently diagnosed with colon cancer (Duke's C) and has a history of polymyalgia rheumatica. Current medications include co-codamol 30/500, prednisolone and prophylactic dose lowmolecular weight heparin. Five minutes ago he started to complain of severe central chest pain. An ECG performed by the nurses shows ST elevation in the anterior leads. Aspirin and oxygen have been given by the Foundation 1 doctor. What is the most appropriate treatment? prednisolone dose

A- IV diamorphine + increase low-molecular weight heparin to treatment dose + double his

B- IV diamorphine + arrange echocardiogram urgently to exclude pericardial tamponade

C- IV diamorphine + call the family in to discuss withdrawal of treatment

**D- IV diamorphine + arrange percutaneous coronary intervention**

E- IV diamorphine + thrombolysis

Q93. You are considering prescribing an antibiotic to a 28-year-old man who tells you he has Long QT syndrome. Which antibiotic is it most important to avoid?

A- Doxycycline

B- Trimethoprim

**C- Erythromycin**

D- Rifampicin

E- Co-amoxiclav

Q94. Which part of the ECG complex corresponds with the closure of the mitral valve?

A- P wave

B- PR interval

**C- QRS complex**

D- ST segment

E- T wave

Q95. Where is the most common site for primary cardiac tumours to occur in adults?

**A- Left atrium**

B- Right ventricle

C- Right atrium

D- Left atrial appendage

E- Left ventricle

Q96. A 56-year-old man with a past history of ischaemic heart disease is admitted with central chest pain radiating to his left arm associated with nausea. On arrival in the Coronary Care Unit he is noted to be in complete heart block. Which coronary artery is likely to be affected?

A- Circumflex

**B- Right coronary**

C- Obtuse marginal

D- Left anterior descending

E- Posterior descending

Q97. A 70-year-old man with a background of ischaemic heart disease and peripheral arterial disease presents to the Emergency Department. He has been feeling generally unwell for the past two days with fever and myalgia but this morning developed a purple, cold left middle toe. On examination there are signs of early ischaemia to the toe and a faint livedo reticularis rash is seen on the foot. A diagnosis of cholesterol embolisation is suspected. Which of the following features would be most supportive of this diagnosis?

A- Lymphocytosis

B- Thrombocytosis

C- Neutrophilia

D- Thrombocytopaenia

**E- Eosinophilia**

Q98. A 58-year-old man who is taking lithium for bipolar disorder presents for review. During routine examination he found to be hypertensive with a blood pressure of 166/82 mmHg. This is confirmed with two separate readings. Urine dipstick is negative and renal function is normal. What is the most appropriate medication to start?

**A- Amlodipine**

B- Ramipril

C- Losartan

D- Bendroflumethiazide

E- Doxazosin

Q99. A 65-year-old man is found to have an ejection systolic murmur and narrow pulse pressure on examination. He has experienced no chest pain, breathlessness or syncope. An echo confirms aortic stenosis and shows an aortic valve gradient of 40 mmHg. How should this patient be managed?

A- Routine aortic valve replacement

B- Urgent aortic valve replacement

C- Anticoagulation

D- Aortic valvuloplasty

**E- Regular cardiology outpatient review**

Q100. Which one of the following features is not part of the modified Duke criteria used in the diagnosis of infective endocarditis?

**A- Prolonged PR interval**

B- Positive serology for Coxiella burnetii

C- Fever > 38ºC

D- Roth spots

E- Positive microbiology from embolic fragments

Q101. A 71-year-old man who had rheumatic fever as a child is admitted to the cardiology ward with suspected infective endocarditis. This is confirmed by blood cultures and echocardiography. Which one of the following is most likely to be represent a need for surgical intervention?

A- A septic embolism in the right kidney

B- Persistent pyrexia after 48 hours of antibiotics

**C- Lengthening of the PR interval on ECG**

D- Pre-existing left ventricular impairment

E- Streptococcus viridans isolated on blood cultures

Q102. A 61-year-old man is admitted with central crushing chest pain to the Emergency Department. An ECG taken immediately on arrival shows ST-elevation in leads II, III and aVF. His only past medical history of note is hypertension for which he takes ramipril, aspirin and simvastatin. What is the optimum management of this patient?

A- Aspirin + clopidogrel + LMWH + repeat ECG in 20 minutes

B- Clopidogrel + LMWH + alteplase

C- Aspirin + clopidogrel + LMWH + tenecteplase

D- Aspirin + clopidogrel + LMWH + alteplase

**E- Aspirin + clopidogrel + IV heparin + immediate percutaneous coronary intervention**

Q103. Which one of the following drugs is best avoided in patients with hypertrophic obstructive cardiomyopathy?

A- Amiodarone

B- Verapamil

**C- Ramipril**

D- Amoxicillin

E- Atenolol

Q104. Each one of the following is associated with aortic dissection, except:

**A- Ventricular septal defect**

B- Turner's syndrome

C- Noonan's syndrome

D- Pregnancy

E- Marfan's syndrome

Q105. Which part of the jugular venous waveform is associated with the opening of the tricuspid valve?

A- x descent

B- v wave

C- a wave

D- c wave

**E- y descent**

Q106. A 60-year-old man is investigated for progressive shortness of breath. On examination a loud P2 is noted associated with a left parasternal heave. An ECG shows evidence of right ventricular strain and a diagnosis of pulmonary hypertension is suspected. Which one of the following is the single most important test to confirm the diagnosis?

A- Echocardiography

B- High resolution CT thorax

**C- Cardiac catheterisation**

D- Pulmonary angiography

E- Ventilation perfusion scanning

Q107. A 49-year-old man with idiopathic pulmonary arterial hypertension has a negative acute vasodilator test. Which one of the following medications is least likely to be beneficial in his long-term management?

**A- Nifedipine**

B- Treprostinil

C- Bosentan

D- Sildenafil

E- Warfarin

Q108. Which of the following is least associated with primary pulmonary hypertension?

A- HIV

B- Fenfluramine

**C- Recurrent pulmonary embolism**

D- Loud P2

E- Right ventricular heave

Q109. You review a 47-year-old man in clinic. He has been referred with difficult to control hypertension despite taking a combination of lisinopril, indapamide and amlodipine. Whilst examining the patient you note over 15 large cafe-au-lait spots on his trunk. Some axillary freckling is also present. His blood pressure (despite medication) is 170/94 mmHg and pulse 90/min. Routine bloods are ordered: Hb 15.2 g/dl Platelets 201 \* 109 /l WBC 5.2 \* 109 /l Na+ 141 mmol/l K + 4.3 mmol/l Urea 6.1 mmol/l Creatinine 88 µmol/l Urine dipstick is normal. Which one of the following investigations is most likely to be diagnostic?

A- MRI brain

B- 24 hr urinary cortisol

C- Glucose tolerance test with growth hormone measurements

D- Renal arteriography

**E- 24 hr urinary collection of catecholamines**

Q110. A 30-year-old woman presents to the Emergency Department with a one-day history of central chest pain. The pain is described as severe, non-radiating and eases on expiration. Clinical examination of her cardiorespiratory system is unremarkable other than a heart rate of 96 / min. An ECG shows widespread ST elevation in the anterior, inferior and lateral leads. Bloods show the following: Full blood count Normal Urea and electrolystes Normal Troponin I 0.8 ng/mL (< 0.2 ng/mL) What is the most likely diagnosis?

A- Pulmonary embolism

B- Acute coronary syndrome

C- Hypertrophic obstructive cardiomyopathy

**D- Acute pericarditis**

E- Arrhythmogenic right ventricular cardiomyopathy

Q111. A 65-year-old man is admitted with palpitations. The ECG shows a ventricular rate of 150/min with an underlying atrial rate of 300/min. A diagnosis of atrial flutter is suspected. What is the treatment of choice to permanently restore sinus rhythm?

A- Radiofrequency ablation of the accessory pathway

B- Radiofrequency ablation of the AV node

**C- Radiofrequency ablation of the tricuspid valve isthmus**

D- Lifelong amiodarone

E- Permanent pacemaker

Q112. A 29-year-old man with myotonic dystrophy has an electrocardiogram. Which one of the following findings is most likely to be present?

A- Wide QRS complex

B- Atrial fibrillation

C- Voltage criteria for left ventricular hypertrophy

D- Right axis deviation

**E- Prolonged PR interval**

Q113. A 35-year-old man who is an intravenous drug user is admitted to hospital. He has had three previous admissions with infective endocarditis but presents on this occasion feeling generally unwell, complaining of upper abdominal discomfort and leg swelling. On examination he has an elevated jugular venous pressure, tender hepatomegaly and peripheral oedema. A diagnosis of tricuspid regurgitation is suspected. Which one of the following additional features would be most supportive of this diagnosis?

A- Split first heart sound

B- Early diastolic murmur

**C- Left parasternal heave**

D- Wide pulse pressure

E- Cannon 'a' waves

Q114. A 55-year old man with a history of ischaemic heart disease presents to the Emergency Department with palpitations for the past 10 days. Examination of his pulse reveals a rate of 130 bpm which is irregularly irregular. He has had one previous episode of atrial fibrillation 3 months ago which was terminated by elective cardioversion following warfarinisation. What term best describes his arrhythmia?

A- Paroxysmal atrial fibrillation

B- Atrial flutter

C- Permanent atrial fibrillation

**D- Persistent atrial fibrillation**

E- Secondary atrial fibrillation

Q115. Which of the following is least associated with a poor prognosis in hypertrophic cardiomyopathy?

A- Non-sustained ventricular tachycardia on 24 or 48-hour Holter monitoring

**B- Reduced left ventricular outflow gradient**

C- Family history of sudden death

D- Syncope

E- Early age at presentation

Q116. Which one of the following statements regarding arrhythmogenic right ventricular cardiomyopathy is correct?

A- Inherited in an autosomal recessive pattern

B- It is now the most common cause of sudden cardiac death in the UK

C- All patients should have an implantable cardioverter defibrillator fitted

**D- It is characterised by fibrofatty infiltration of the right ventricular myocardium**

E- Naxos disease is the association of arrhythmogenic right ventricular cardiomyopathy with deafness

Q117. A 62-year-old female with a known history of a sigmoid adenocarcinoma is admitted to hospital with shortness of breath and pyrexia. On examination a murmur is heard and an echo reveals a vegetation on the aortic valve. Which one of the following organisms is most characteristically associated with causing infective endocarditis in patients with colorectal cancer?

A- Escherichia coli

B- Enterococcus faecalis

C- Salmonella

D- Campylobacter

**E- Streptococcus bovis**

Q118. The most common cause of restrictive cardiomyopathy in the UK is:

A- Diabetes mellitus

B- Systemic lupus erythematous

C- Haemochromatosis

D- Tuberculosis

**E- Amyloidosis**

Q119. Which of the following is a cause of a loud second heart sound?

A- Aortic regurgitation

B- Ventricular septal defect

**C- Systemic hypertension**

D- Aortic stenosis

E- Mitral stenosis

Q120. A 53-year-old man is reviewed in the cardiology clinic with a history of chest pain and syncope. On examination he has an ejection systolic murmur radiating to the carotid area. What is the most likely cause of his symptoms?

**A- Bicuspid aortic valve**

B- Aortic root abscess

C- Post rheumatic fever

D- Posterior myocardial infarction

E- Calcification of the aortic valve

Q121. A 58-year-old man with no past medical history of note is admitted to hospital with crushing central chest pain. ECG on arrival shows anterior ST elevation and he is subsequently thrombolysed with a good resolution of symptoms and ECG changes. Two months following discharge from hospital, which combination of drugs should he be taking?

**A- ACE inhibitor + beta-blocker + statin + aspirin**

B- Spironolactone + beta-blocker + statin + aspirin

C- ACE inhibitor + beta-blocker + statin + aspirin + clopidogrel

D- ACE inhibitor + statin + aspirin + clopidogrel

E- Beta-blocker + statin + aspirin + clopidogrel

Q122. An 82-year-old man is reviewed. He is known to have ischaemic heart disease and is still getting regular attacks of angina despite taking atenolol 100mg od. Examination of his cardiovascular system is unremarkable with a pulse of 72 bpm and a blood pressure of 148/92 mmHg. What is the most appropriate next step in management?

A- Add verapamil 80mg tds

B- Add nicorandil 10mg bd

C- Add diltiazem 60mg tds

**D- Add nifedipine MR 30mg od**

E- Add isosorbide mononitrate 30mg bd

Q123. A 58-year-old man presents to the Emergency Department following an episode of transient right-sided weakness which lasted approximately 20 minutes. He has had two previous episodes of a similar nature. On examination he is found to be in atrial fibrillation at a rate of 80 bpm. CT head normal He is started on aspirin 300mg od. Two days later he has a carotid doppler which is normal. What is the most appropriate management?

A- Start digoxin

B- Switch to aspirin 300mg od + dipyridamole 200mg bd long-term

C- Wait two weeks from the date of the last event then switch from aspirin to warfarin

D- Switch to aspirin 75mg od long-term

**E- Start warfarin**

Q124. Which one of the following clinical signs would best indicate severe calcified aortic stenosis?

A- Loudness of murmur

B- Loud second heart sound

C- Radiation to the carotids

D- Hypertension

**E- Displaced apex beat**

Q125. A 51-year-old man presents four weeks after being discharged from hospital. He had been admitted with chest pain and thrombolysed for a myocardial infarction. This morning he developed marked tongue and facial swelling. Which one of the following drugs is most likely to be responsible?

A- Atorvastatin

B- Isosorbide mononitrate

C- Atenolol

D- Aspirin

**E- Ramipril**

Q126. A 24-year-old female develops transient slurred speech following a flight from Australia to the United Kingdom. Both a CT head and ECG are normal. Which one of the following tests is most likely to reveal the underlying cause?

**A- Transoesophageal echo**

B- MRI brain

C- Carotid USS Doppler

D- Cerebral angiogram

E- Transthoracic echo

Q127. A 42-year-old man of Afro-Caribbean origin is diagnosed as having hypertension. Secondary causes of hypertension have been excluded. What is the most appropriate initial drug therapy?

A- Losartan

B- Bisoprolol

C- Indapamide

D- Ramipril

**E- Amlodipine**

Q128. A 17-year-old girl with Turner's syndrome is reviewed in the cardiology clinic. Other than coarctation of the aorta, what is the most common cardiac abnormality found in patients with Turner's syndrome?

A- Ventricular septal defect

**B- Bicuspid aortic valve**

C- Aortic stenosis

D- Pulmonary stenosis

E- Partial anomalous venous drainage

Q129. A 67-year-old man is admitted with palpitations. During examination of his JVP he is noted to have regular cannon waves. Which one of the following arrhythmias is most likely to be responsible for this finding?

**A- Atrio-ventricular nodal re-entry tachycardia**

B- Atrial fibrillation

C- Atrial flutter

D- Complete heart block

E- Ventricular fibrillation

Q130. A 75-year-old woman is brought to the Emergency Department by her family. She has been getting more short-of-breath over the last 6 weeks and says her energy levels are low. An ECG on arrival shows atrial fibrillation at a rate of 114 / min. Blood pressure is 128/80 mmHg and a chest x-ray is unremarkable. What is the appropriate drug to control the heart rate?

A- Felodipine

B- Amiodarone

C- Digoxin

D- Flecainide

**E- Bisoprolol**

Q131. A 75-year-old woman is reviewed following a 'collapse' yesterday. Her husband found her unconscious on the bathroom floor and describes her 'quickly coming round'. What is the most likely cause of collapse in this patient?

A- Orthostatic syncope

B- Cardiac syncope

**C- Reflex syncope**

D- Drug-induced syncope

E- Unexplained

Q132. A 71-year-old man is reviewed in the coronary care unit. He was admitted with an anterior ST-elevation myocardial infarction and received thrombolysis with alteplase. Ninety minutes following this an ECG shows a 30-40% resolution in the ST elevation. What is the most appropriate management? coronary intervention

**A- Percutaneous coronary intervention**

B- Repeat ECG in 4 hours, if still not a 50% resolution in ST elevation then proceed to percutaneous

C- Repeat thrombolysis with alteplase

D- Start a nitrate infusion

E- Inform his relatives that further intervention is futile and ensure adequate pain relief

Q133. A 76-year-old woman is admitted to the resus department after collapsing whilst shopping. The paramedics report she is hypotensive and tachycardia. Initial observations include a heart rate of 160 bpm and a blood pressure of 98 / 60 mmHg. A 12 lead ECG shows a broad complex tachycardia. Which one of the following features on the ECG would suggest a ventricular tachycardia rather than a supraventricular tachycardia with aberrant conduction?

A- QRS < 160 ms

B- A corrected QT interval of 420ms

**C- Atrioventricular dissociation**

D- Marked right axis deviation

E- Heart rate of 160 bpm

Q134. A 30-year-old woman is admitted to the Emergency Department following the acute onset of palpitations. Blood pressure is 124/84 mmHg and her pulse is 150/min. An ECG shows a narrow complex tachycardia. Intravenous access is gained and 6mg of adenosine is given with no effect. What is the most appropriate next step?

**A- Intravenous adenosine 12 mg**

B- Intravenous adenosine 6mg

C- Intravenous verapamil 2.5-5 mg

D- Radio-frequency ablation

E- Electrical cardioversion

Q135. A 60-year-old man is admitted following an acute coronary syndrome. He receives aspirin, clopidogrel, nitrates and morphine. His 6-month risk score is high and percutaneous coronary intervention is planned. He is therefore given intravenous tirofiban. What is the mechanism of action of this drug?

A- Inhibits the production of thromboxane A2

B- Activates antithrombin III

C- Coronary vasodilator

**D- Glycoprotein IIb/IIIa receptor antagonist**

E- Reversible direct thrombin inhibitor

Q136. A 65-year-old female is admitted with a suspected infective exacerbation of chronic obstructive pulmonary disease. On examination she is dyspnoeic with a blood pressure of 112/68 mmHg. Electrocardiogram shows an irregular, narrow-complex tachycardia with a rate of 130 bpm. At least three different P wave morphologies are seen. A diagnosis of multifocal tachycardia is suspected. What is the most appropriate management?

A- Adenosine

B- Digoxin

**C- Verapamil**

D- Atenolol

E- DC cardioversion

Q137. Which one of the following treatments is not appropriate in the management of Wolff-Parkinson White?

**A- Verapamil**

B- Sotalol

C- Amiodarone

D- Flecainide

E- Radiofrequency ablation of the accessory pathway

Q138. A 65-year-old man is discharged from hospital following a thrombolysed ST-elevation myocardial infarction. Other than a history of depression he has no past medical history of note. His stay on the coronary care unit was complicated by the development of dyspnoea and an echo show a reduced left ventricular ejection fraction. The patient was not given clopidogrel during his hospital admission. Other than standard treatment with an ACE inhibitor, beta-blocker, aspirin and statin, what other type of drug should he be taking?

A- Angiotensin 2 receptor antagonist

B- Potassium channel activator

**C- Aldosterone antagonist**

D- Thiazide diuretic

E- Clopidogrel

Q139. A 62-year-old man who had a mechanical mitral valve replacement four years ago is reviewed. What long term antithrombotic therapy is he likely to be taking?

A- Nothing

B- Warfarin

C- Aspirin

D- Aspirin + clopidogrel for the first 12 months

**E- Warfarin + aspirin**

Q140. Which one of the following conditions is most associated with angiodysplasia?

A- Aortic regurgitation

B- Ventricular septal defect

**C- Aortic stenosis**

D- Hypertrophic obstructive cardiomyopathy

E- Mitral regurgitation

Q141. A 65-year-old man admitted to the Acute Medical Unit is noted to have cannon 'a' waves of his jugular venous pressure during cardiovascular examination. Which one of the following would not cause this finding?

**A- Tricuspid stenosis**

B- Complete heart block

C- Ventricular tachycardia

D- Single chamber ventricular pacing

E- Nodal rhythm

Q142. Which of the following is responsible for the early repolarisation phase of the myocardial action potential?

A- Rapid sodium influx

B- Rapid calcium influx

C- Slow sodium efflux

D- Slow efflux of calcium

**E- Efflux of potassium**

Q143. A 59-year-old female is admitted to the Emergency Department with a 30 minute history of central chest pain radiating to her left arm. An ECG shows ST elevation in leads II, III, aVF. Which coronary artery is most likely to be affected?

**A- Right coronary**

B- Left anterior descending

C- Left main stem

D- Left circumflex

E- Anterior interventricular

Q144. A 45-year-old man presents with pleuritic central chest pain. Which one of the following ECG findings is most specific for pericarditis?

**A- PR depression**

B- T wave inversion

C- Short PR interval

D- U waves

E- ST elevation

Q145. A 78-year-old man with a four month history of exertional chest pain is reviewed. The pain typically comes on when he is walking up a hill, is centrally located and radiates to the left arm. It then settles with rest after about 2-3 minutes. Clinical examination and a resting 12 lead ECG are normal. Following NICE guidelines, what is the most appropriate diagnostic strategy?

A- CT calcium scoring

**B- Manage as angina, no further diagnostic tests required**

C- Exercise tolerance test

D- MPS with SPECT

E- Coronary angiography

Q146. Dilated cardiomyopathy may be caused by deficiency of which one of the following:

A- Chromium

B- Magnesium

C- Pyridoxine

D- Molybdenum

**E- Selenium**

Q147. A 72-year-old man is started on amlodipine 5mg od for hypertension. He has no other past medical history of note and routine bloods (including fasting glucose) and ECG were normal. What should his target blood pressure (based on clinic readings) be once on treatment?

A- 130/80 mmHg

B- 140/80 mmHg

C- 140/85 mmHg

**D- 140/90 mmHg**

E- 150/90 mmHg

Q148. Which one of the following agents is most useful in the maintenance of sinus rhythm in patients with atrial fibrillation?

A- Verapamil

B- Diltiazem

C- Ibutilide

**D- Amiodarone**

E- Digoxin

Q149. Which one of the following non-invasive methods provides the most accurate assessment of whether a patient has coronary artery disease?

**A- Contrast enhanced cardiac CT**

B- Cardiac MRI with gadolinium

C- Exercise ECG

D- Cardiac SPECT with reversibility studies

E- Transoesophageal echocardiography

Q150. You review a 69-year-old man who is known to have angina and heart failure. His current medications include aspirin, simvastatin, bisoprolol, glyceryl trinitrate, ramipril and frusemide. Despite his current medications he is still having frequent angina attacks when he exerts himself. You decide to add a calcium channel blocker. Which one of the following is it most appropriate to add?

**A- Felodipine**

B- Diltiazem

C- Nimodipine

D- Lacidipine

E- Verapamil

Q151. Which one of the following clinical signs would best indicate severe aortic stenosis?

A- Valvular gradient of less than 30 mmHg

**B- Soft second heart sound**

C- Quiet first heart sound

D- Development of an opening snap

E- Carotid radiation of ejection systolic murmur

Q152. You review a 60-year-old man who had a drug-eluding stent inserted 6 months ago for ischaemic heart disease. His current medication includes aspirin, clopidogrel, atorvastatin, ramipril and bisoprolol. He has developed an inguinal hernia and is keen for surgical repair. The cardiologists plan was to continue clopidogrel for 12 months following stent insertion. What is the most appropriate course of action? dose)

A- Stop clopidogrel the day before the operation

B- Stop clopidogrel 7 days before the operation

C- Continue clopidogrel as normal

**D- Delay operation for 6 months**

E- Stop clopidogrel the day before the operation and start low-molecular weight heparin (prophylaxis

Q153. A 55-year-old man is admitted with central chest pain. His ECG shows ST depression in the inferior leads and the chest pain requires intravenous morphine to settle. Past medical history includes a thrombolysed myocardial infarction 2 years ago, asthma and type 2 diabetes mellitus. Treatment with aspirin, clopidogrel and unfractionated heparin is commenced. Which one of the following factors should determine if an intravenous glycoprotein IIb/IIIa receptor antagonist is to be given? coronary intervention is to be performed

**A- High GRACE (Global Registry of Acute Cardiac Events) risk score + whether a percutaneous**

B- Degree of ST depression

C- High GRACE (Global Registry of Acute Cardiac Events) risk score

D- Presence of a left ventricular thrombus

E- The presence of recurrent cardiac chest pain

Q154. A 55-year-old presents to the Emergency Department with shortness-of-breath since the morning. Last year he was admitted following an inferior myocardial infarction. He was started on aspirin, atorvastatin, lisinopril and bisoprolol. An echocardiogram performed following the myocardial infarction showed normal left ventricular function. He is still a smoker despite repeated attempts to give up. Examination today reveals bibasal crackles whilst the chest x-ray shows upper lobe diversion and perihilar shadowing. The ECG and cardiac enzymes are normal. What is the most likely cause of his breathlessness?

A- Infective endocarditis

B- Phaeochromocytoma

C- Fibromuscular dysplasia

**D- Renal artery stenosis**

E- Anterior myocardial infarction

Q155. A 13-year-old girl presents with palpitations, fatigue and dyspnoea. She has had symptoms for around a year. There is no history of syncope or chest pain. On examination she has a pan-systolic murmur associated with giant V waves in the jugular venous pulse. Auscultation of the chest is unremarkable. A resting ECG is normal but a 24 hour tape shows a short burst of supraventricular tachycardia. What is the most likely diagnosis?

A- Atrial septal defect

B- Pulmonary stenosis

C- Hypertrophic obstructive cardiomyopathy

D- Arrhythmogenic right ventricular cardiomyopathy

**E- Ebstein's anomaly**

Q156. You review a 24-year-old woman who has recently been diagnosed as having long QT syndrome type I (LQTS1). You are discussing the need to avoid certain drugs and other aggravating factors. Which one of the following should be avoided if possible?

A- Methotrexate

**B- Sertraline**

C- Grapefruit juice

D- Carbamazepine

E- Doxycycline

Q157. You review an 82-year-old woman in clinic. Last month she had a one-off blood pressure reading of 150/92 mmHg and was offered ambulatory blood pressure monitoring. This shows an average reading of 146/94 mmHg. She has no significant past medical history of note other than hypothyroidism. Her 10-year cardiovascular risk is calculated to be 16%. What is the most appropriate management?

A- Arrange further ambulatory blood pressure monitoring

B- Start a thiazide-type diuretic

**C- Give lifestyle advice and repeat blood pressure in 6 months**

D- Start an ACE inhibitor

E- Start a calcium channel blocker

Q158. What is the target INR for a patient with a mechanical mitral valve?

A- 4.0-4.5

B- 4.0

C- 3.0-4.0

**D- 2.5-3.5**

E- 2.0-3.0

Q159. What is the main reason for checking the urea and electrolytes prior to commencing a patient on amiodarone?

A- To detect hyponatraemia

B- To detect impaired renal function

C- To detect a metabolic acidosis

D- To detect hyperkalaemia

**E- To detect hypokalaemia**

Q160. Which one of the following statements regarding Brugada syndrome is correct?

A- Usually inherited as an autosomal recessive disease

B- Is associated with left bundle branch block

C- Most common presentation is dilated cardiomyopathy

D- Management is with beta-blockers

**E- More common in Asians**

Q161. A 62-year-old female with no past medical history is admitted to hospital with a left-sided hemiparesis. Examination reveals that she is in atrial fibrillation. CT scan of her brain shows a cerebral infarction. What is the most appropriate anticoagulation strategy for this patient?

A- Life-long warfarin, started immediately

**B- Aspirin started immediately switching to life-long warfarin after 2 weeks**

C- Life-long aspirin, started immediately

D- Life-long aspirin started after 2 weeks

E- 6 months of warfarin, started immediately

Q162. A 62-year-old man is examined in the cardiology clinic. During cardiac auscultation it is noted that the pulmonary component of the second heart sound occurs before the aortic. Which one of the following is associated with this finding?

A- Pulmonary stenosis

**B- Left bundle branch block**

C- Right bundle branch block

D- Atrial septal defect

E- Deep inspiration

Q163. A 45-year-old man presents with fever. On examination he is noted to have a pan-systolic murmur and splinter haemorrhages. He is generally unwell with a blood pressure of 100/60 mmHg and a temperature of 38.8ºC. What is the most suitable antibiotic therapy until blood culture results are known?

**A- IV flucloxacillin + gentamicin**

B- IV benzylpenicillin + gentamicin

C- IV vancomycin + gentamicin

D- IV vancomycin + benzylpenicillin

E- IV ceftriaxone + benzylpenicillin

Q164. An 18-year-old female who is known to have Turner's syndrome is referred to cardiology as she has a murmur. On examination a soft ejection systolic murmur is heard. What is the most likely cause of this finding?

A- Coarctation of the aorta

B- Ventricular septal defect

C- Pulmonary stenosis

D- Supravalvular aortic stenosis

**E- Bicuspid aortic valve**

Q165. A 74-year-old man presents for a medication review. Blood pressure is recorded as 184/72 mmHg. This is confirmed on two further occasions. What is the most appropriate first line therapy?

A- Ramipril

B- Losartan

C- Bendroflumethiazide

**D- Amlodipine**

E- Atenolol

Q166. Which one of the following is not an indication for insertion of a temporary pacemaker?

**A- Complete heart block following an inferior MI- blood pressure normal**

B- Complete heart block following an anterior MI- blood pressure normal

C- Trifascicular block prior to surgery

D- Mobitz type II heart block following an anterior MI- blood pressure normal

E- Symptomatic bradycardia not responding to drug treatment

Q167. Which one of the following treatments have not been shown to improve mortality in patients with chronic heart failure?

A- Beta-blockers

B- Spironolactone

**C- Frusemide**

D- Nitrates and hydralazine

E- Enalapril

Q168. A 70-year-old woman is brought to the Emergency Department by her relatives. For the past two hours she has experienced palpitations and 'tightness' in her chest. An ECG taken on arrival shows baseline atrial activity of around 300/min with a ventricular rate of 150/min. What is the most likely diagnosis?

A- Atrioventricular nodal re-entry tachycardia (AVNRT)

**B- Atrial flutter**

C- Atrioventricular re-entry tachycardia (AVRT)

D- Junctional tachycardia

E- Atrial fibrillation

Q169. You review a patient who has been admitted with a non-ST elevation myocardial infarction in the Emergency Department. Following recent NICE guidance, which patients should receive clopidogrel?

**A- Those who have a predicted 6 month mortality > 1.5%**

B- Patients who have a history of hypertension, ischaemic heart disease or diabetes mellitus

C- Those who have a predicted 12 month mortality > 10%

D- Those who have a predicted 6 month mortality < 10%

E- All patients

Q170. A 54-year-old man is admitted to the Emergency Department with a 15 minute history of crushing central chest pain. Which one of the following rises first following a myocardial infarction?

A- AST

B- Troponin I

C- CK

D- CK-MB

**E- Myoglobin**

Q171. Six weeks after having a prosthetic heart valve a patient develops infective endocarditis. What is the most likely causative organism?

A- Streptococcus viridans

**B- Staphylococcus epidermidis**

C- Staphylococcus aureus

D- Streptococcus bovis

E- One of the HACEK group

Q172. A 60-year-old man presents with increasing shortness-of-breath on exertion. During the examination a third heart sound is heard. Examination of the respiratory system is unremarkable. Which one of the following is most consistent with this finding?

**A- Dilated cardiomyopathy**

B- Hypertrophic obstructive cardiomyopathy

C- Atrial fibrillation

D- Mitral stenosis

E- Normal variant

Q173. A 74-year-old man with symptomatic aortic stenosis is reviewed in the cardiology clinic. He is otherwise fit and well and keen for intervention if possible. What type of intervention is he most likely to be offered?

A- Annual echocardiography, intervention when valve gradient > 75 mmHg

B- Aortic bypass graft

**C- Bioprosthetic aortic valve replacement**

D- Balloon valvuloplasty

E- Mechanical aortic valve replacement

Q174. A 36-year-old woman presents for a routine antenatal review. She is now 15 weeks pregnant. Her blood pressure in clinic is 154/94 mmHg. This is confirmed with ambulatory blood pressure monitoring. On reviewing the notes it appears her blood pressure four weeks ago was 146/88 mmHg. A urine dipstick shows protein + and nothing else. There is no significant past medical history of note. What is the most likely diagnosis?

A- Pre-eclampsia

B- Pregnancy-induced hypertension

C- White-coat hypertension

D- Normal physiological change

**E- Pre-existing hypertension**

Q175. A 52-year-old female with a known history of systemic sclerosis presents for annual review to the rheumatology clinic. Which one of the following symptoms is most characteristic in patients who have developed pulmonary arterial hypertension?

**A- Exertional dyspnoea**

B- Paroxysmal nocturnal dyspnoea

C- Cough

D- Early morning dyspnoea

E- Orthopnoea

Q176. Which one of the following features would indicate cardiac tamponade rather than constrictive pericarditis?

A- Raised JVP

B- Muffled heart sounds

**C- No Y descent on JVP**

D- Hypotension

E- Tachycardia

Q177. A 24-year-old male is diagnosed as having hypertrophic obstructive cardiomyopathy. Which one of the following markers is most useful in assessing risk of sudden death?

**A- Abnormal blood pressure changes on exercise**

B- Left ventricular outflow tract gradient

C- QT interval

D- Right atrial diameter

E- QRS duration

Q178. Each one of the following is associated with right axis deviation on ECG, except:

A- Right ventricular hypertrophy

B- Pulmonary embolism

**C- Wolf-Parkinson-White syndrome with right-sided accessory pathway**

D- Chronic lung disease

E- Left posterior hemiblock

Q179. A 28-year-old intravenous drug user is brought into the Emergency Department as a stand-by call following a cardiac arrest. He has been using methadone for the past 3 months. Unfortunately attempts to resuscitate him fail. Which one of following underlying problems is most likely to have caused his sudden death?

**A- Prolonged QT interval**

B- Complete heart block

C- Pulmonary arterial hypertension

D- Cardiomyopathy

E- Hypokalaemia

Q180. A 60-year-old man is transferred from the local psychiatric unit to the Emergency Department. Throughout the day he has complained of palpitations and feeling light-headed. The psychiatry consultant noted he was tachycardic and requested a transfer. An ECG taken following admission shows a broad complex tachycardia consistent with torsardes de pointes, rate 120/min. His blood pressure is 122/80 mmHg and there are no signs of heart failure. What is the most appropriate management?

A- Intravenous naloxone

**B- Intravenous magnesium sulphate**

C- DC cardioversion

D- Intravenous amiodarone

E- Intravenous verapamil

Q181. A 17-year-old girl is brought into resus in cardiac arrest. On admission she is in asystole and attempts to resuscitate are unsuccessful. She collapsed whilst competing in a 1,500m race at college. The only past medical of note was asthma for which she occasionally used a salbutamol inhaler. There is no relevant family history. What is the most likely underlying cause of death?

A- Long QT syndrome

**B- Hypertrophic obstructive cardiomyopathy**

C- Catecholaminergic polymorphic ventricular tachycardia

D- Brugada syndrome

E- Arrhythmogenic right ventricular dysplasia

Q182. A 50-year-old man is admitted to Resus with a suspected anterior myocardial infarction. An ECG on arrival confirms the diagnosis and thrombolysis is prepared. The patient is stable and his pain is well controlled with intravenous morphine. Clinical examination shows a blood pressure of 140/84 mmHg, pulse 90 bpm and oxygen saturations on room air of 97%. What is the most appropriate management with regards to oxygen therapy?

A- 2-4 l/min via nasal cannulae

**B- No oxygen therapy**

C- 15 l/min via reservoir mask

D- 28% via Venturi mask

E- 35% via Venturi mask

Q183. A 60-year-old man is admitted with palpitations to the Emergency Department. An ECG on admission shows a broad complex tachycardia at a rate of 150 bpm. His blood pressure is 124/82 mmHg and there is no evidence of heart failure. Which one of the following is it least appropriate to give?

A- Procainamide

B- Lidocaine

C- Synchronised DC shock

D- Adenosine

**E- Verapamil**

Q184. A 41-year-old man is admitted with left-sided pleuritic chest pain. He has a dry cough and reports that the pain is relieved by sitting forward. For the past three days he has been experiencing flu-like symptoms. Given the likely diagnosis, what is the most likely finding on ECG?

A- Large S wave in lead I, a large Q wave in lead III and an inverted T wave in lead III

B- Atrial fibrillation

**C- Widespread ST elevation**

D- ST segment depression in the anterior leads

E- Hyperacute T waves

Q185. A 72-year-old man is investigated for exertional chest pain and has a positive exercise tolerance test. He declines an angiogram and is discharged on a combination of aspirin 75mg od, simvastatin 40mg on, atenolol 50mg od and a GTN spray prn. Examination reveals a pulse of 72 bpm and a blood pressure of 130/80 mmHg. On review he is still regularly using his GTN spray. What is the most appropriate next step in management?

A- Add nifedipine MR 30mg od

B- Add isosorbide mononitrate 30mg bd

**C- Increase atenolol to 100mg od**

D- Add nicorandil 10mg bd

E- Add verapamil 80mg tds

Q186. Which one of the following conditions is most associated with a bisferiens pulse?

A- Cardiac tamponade

B- Severe left ventricular failure

C- Aortic stenosis

D- Patent ductus arteriosus

**E- Mixed aortic valve disease**

Q187. What is the most common cardiac defect seen in patients with Down's syndrome?

A- Ventricular septal defect

**B- Endocardial cushion defect**

C- Secundum atrial septal defect

D- Tetralogy of Fallot

E- Patent ductus arteriosus

Q188. A 17-year-old male is taken to the Emergency Department due to alcohol intoxication. On examination he is noted to be tachycardic with a rate of 140bpm. An ECG shows atrial fibrillation. The following morning he is noted to be in sinus rhythm. What is the most appropriate management?

A- Sotalol and aspirin

B- Sotalol and warfarin

C- Refer for accessory pathway ablation

D- Amiodarone and aspirin

**E- Discharge**

Q189. A woman who is 34 weeks pregnant is admitted to the obstetric ward. She has been monitored for the past few weeks due to pregnancy-induced hypertension but has now developed proteinuria. Her blood pressure is 162/94 mmHg. Which one of the following antihypertensives is it most appropriate to commence?

A- Nifedipine

B- Atenolol

**C- Labetalol**

D- Losartan

E- Methyldopa

Q190. Which one of the following drugs causes shortening of the QT interval?

**A- Digoxin**

B- Sotalol

C- Amiodarone

D- Tricyclic antidepressants

E- Chloroquine

Q191. A 45-year-old man is diagnosed with endocarditis of the aortic valve. He is treated with intravenous benzylpenicillin and gentamicin. What is the most important ECG change to monitor for?

A- Left ventricular hypertrophy (by voltage criteria)

B- Reflex tachycardia

C- ST segment depression

D- Prolonged QT interval

**E- Prolonged PR interval**

Q192. You review a 34-year-old woman who is 13 weeks pregnant. During her previous pregnancy she developed pre-eclampsia and had to have a caesarean section at 36 weeks gestation. Her blood pressure both following the last pregnancy and today is normal. Which one of the following interventions should be offered to reduce the risk of developing pre-eclampsia again?

A- Prophylactic nifedipine therapy

B- Prophylactic labatelol therapy

C- Vitamin B6 supplementation

D- Extended folic acid supplementation

**E- Low-dose aspirin**

Q193. A 25-year-old woman is brought to the Emergency Department by a friend. She developed palpitations around 30 minutes ago whilst drinking a cup of coffee. Her only past medical history of note is asthma and menorrhagia for which she uses a salbutamol inhaler and takes tranexamic acid respectively. The admission ECG shows a supraventricular tachycardia at a rate of 160 bpm. Vagal manoeuvres are unsuccessful. What is the most appropriate next step in her management?

**A- Intravenous verapamil**

B- Intravenous amiodarone

C- Intravenous adenosine

D- Electrical cardioversion

E- Intravenous esmolol

Q194. A 37-year-old woman who was investigated for progressive shortness-of-breath is diagnosed with primary pulmonary hypertension and started on bosentan. What is the mechanism of action of bosentan?

A- Activator of soluble guanylate cyclase

B- Phosphodiesterase type 5 inhibitors

**C- Endothelin receptor antagonist**

D- Prostanoid

E- Slow calcium channel blocker

Q195. Which part of the jugular venous waveform is associated with the closure of the tricuspid valve?

A- a wave

**B- c wave**

C- x descent

D- y descent

E- v wave

Q196. A 71-year-old woman presents with palpitations and 'lightheadedness'. An ECG shows that she is in atrial fibrillation with a rate of 130 / min. Her blood pressure is normal and examination of her cardiorespiratory system is otherwise unremarkable. Her past medical history includes well controlled asthma (salbutamol & beclomethasone) and depression (citalopram). Her symptoms have been present for around three days. What is the most appropriate medication to use for rate control?

**A- Diltiazem**

B- Sotalol

C- Digoxin

D- Atenolol

E- Amiodarone

Q197. A 62-year-old man is referred from the Emergency Department with a pulse of 40 beats/min. Which one of the following factors carries the least risk of asystole when risk stratifying the patient?

A- Ventricular pause of 5 seconds

B- Recent asystole

**C- Complete heart block with a narrow complex QRS**

D- Mobitz type II AV block

E- Complete heart block with a broad complex QRS

Q198. A 34-year-old man is seen in the cardiology clinic. He has been referred by his GP with a history of increasing dyspnoea and exercise-related syncope. His father died suddenly when at the age of 42-yearsold. An ECG attached to the admission letter shows left ventricular hypertrophy with widespread T wave inversion. Given the likely diagnosis, what is the most appropriate next investigation?

A- Cardiac angiogram

**B- Transthoracic echo**

C- Transoesophageal echo

D- Exercise ECG

E- 24-hour ECG

Q199. Which one of the following features is not part of the modified Duke criteria used in the diagnosis of infective endocarditis?

A- Fever > 38ºC

B- Positive molecular assays for specific gene targets

**C- Indwelling central line**

D- Intravenous drug use

E- Janeway lesions

Q200. A 57-year-old man presents to the Emergency Department with palpitations for the past 36 hours. He has no past history of note. There is no associated chest pain or shortness of breath. Clinical examination is unremarkable other than an irregular tachycardia. An ECG shows atrial fibrillation at a rate of 126 bpm with no other changes. What is the most appropriate management?

A- Beta-blocker + warfarin

B- Digoxin + aspirin

**C- Heparinise + cardioversion in the Emergency Department**

D- Beta-blocker + aspirin

E- Warfarinise + transthoracic echo with elective electrical cardioversion in 4 weeks

Q201. A 35-year-old female presents with a deep vein thrombosis in the third trimester of pregnancy. Whilst in the Emergency Department she develops a left hemiparesis. What underlying cardiac abnormality is most likely to be responsible?

A- Primum ASD

B- Secundum ASD

**C- Patent foramen ovale**

D- VSD

E- Patent ductus arteriosus

Q202. A 71-year-old patient presents to the Emergency Department with a two hour history of crushing central chest pain. He is known to have a history of ischaemic heart disease. The ECG shows the following:  ST elevation greater in lead II than in lead III with abnormal Q waves in II, III, and aVF  Tall R waves in V1-2, tall and pointed T waves in V1-V3  ST elevation in V5-V6 Where is the lesion most likely to be?

A- Left anterior descending

**B- Left circumflex**

C- Right coronary artery

D- Left main stem

E- Posterior interventricular

Q203. A 54-year-old male with no past medical history is found to be in atrial fibrillation during a consultation regarding a sprained ankle. He reports no history of palpitations or dyspnoea. After discussing treatment options he elects not to be cardioverted. According to the latest European Society of Cardiology guidelines, if the patient remains in chronic atrial fibrillation what is the most suitable treatment to offer?

**A- No treatment**

B- Warfarin

C- Dabigatran

D- Aspirin + dipyridamole

E- Aspirin

Q204. A 72-year-old man is admitted to the Emergency Department with chest pain. On initial assessment he is noted to be pale, have a heart rate of 40/min and a blood pressure of 90/60 mmHg. Which one of the coronary arteries is most likely to be affected?

A- Posterior descending

B- Left anterior descending

**C- Right coronary**

D- Anterior interventricular

E- Left circumflex

Q205. A 1-year-old girl is noted to have a continuous murmur, loudest at the left sternal edge. She is not cyanosed. A diagnosis of patent ductus arteriosus is suspected. What pulse abnormality is most associated with this condition?

**A- Collapsing pulse**

B- Bisferiens pulse

C- Pulsus parodoxus

D- 'Jerky' pulse

E- Pulsus alternans

Q206. A 61-year-old woman is admitted to the Emergency Department with central chest pain. It feels like her previous angina but is not relieved by nitrates. She has a history of ischaemic heart disease and 4 weeks ago underwent a percutaneous coronary intervention during which a stent was placed. This is her first episode of angina since the procedure. What is the most likely diagnosis?

A- Pericarditis

B- Aortic dissection

C- Coronary artery dissection

D- Restenosis

**E- Stent thrombosis**

Q207. Which of the following is responsible for the plateau phase of the myocardial action potential?

A- Slow calcium efflux

B- Efflux of potassium

C- Rapid sodium influx

**D- Slow influx of calcium**

E- Slow sodium efflux

Q208. A 40-year-old woman who is being treated for refractory hypertension undergoes a coronary angiogram after developing non-specific chest pains. The cardiologist takes a number of measurements during the procedure: Pressure (mmHg) Right femoral artery 122/68 Left ventricle 202/104 Aorta 194/84 The blood pressure in her left arm taking during the procedure was 188/74 mmHg. What is the most likely underlying diagnosis?

A- Left subclavian artery stenosis

B- Renal artery stenosis

**C- Coarctation of the aorta**

D- Aortic stenosis

E- Results consistent with essential hypertension

Q209. A 57-year-old man who had a prosthetic mitral valve replacement 7 years ago presents with fever. An urgent echocardiogram shows features consistent with endocarditis. What is the most suitable antibiotic therapy until blood culture results are known?

A- IV ceftriaxone + benzylpenicillin

**B- IV vancomycin + rifampicin + gentamicin**

C- IV benzylpenicillin + gentamicin

D- IV flucloxacillin + gentamicin

E- IV vancomycin + benzylpenicillin

Q210. A 65-year-old female with a known history of heart failure presents for an annual check-up. She is found to have a blood pressure of 170/100 mmHg. Her current medications are furosemide and aspirin. What is the most appropriate medication to add?

A- Bendroflumethiazide

B- Spironolactone

C- Bisoprolol

D- Verapamil

**E- Enalapril**

Q211. A patient with severe aortic stenosis is noted to have a fourth heart sound. Which part of the ECG does this best correlate with?

A- U wave

B- QRS complex

**C- P wave**

D- ST segment

E- T wave

Q212. Which of the following signs is not associated with the development of Eisenmenger's syndrome in a patient with a ventricular septal defect?

**A- Worsening of systolic murmur**

B- Raised JVP

C- Loud second heart sound

D- Cyanosis

E- Large 'a' waves in jugular venous waveform

Q213. A 79-year-old woman is reviewed. She has taken bendroflumethiazide 2.5mg od for the past 10 years for hypertension. Her current blood pressure is 150/94 mmHg. Clinical examination is otherwise unremarkable. An echocardiogram from two months ago is reported as follows: Ejection fraction 48%, moderate left ventricular hypertrophy. Minimal MR noted What is the most appropriate next step in management?

A- Increase bendroflumethiazide to 5mg od

B- Stop bendroflumethiazide + start frusemide 40mg od

**C- Add ramipril 1.25mg od**

D- Stop bendroflumethiazide + start ramipril 1.25mg od

E- Add amlodipine 5mg od

Q214. A 54-year-old man is admitted following a myocardial infarction associated with ST elevation. He is treated with thrombolysis and does not undergo angioplasty. What advice should he be given regarding driving?

A- Can continue driving but must inform DVLA

B- Cannot drive until an angiogram has been performed and reviewed by a cardiologist

C- Cannot drive for 1 week

**D- Cannot drive for 4 weeks**

E- Cannot drive for 12 weeks

Q215. Which one of the following would not be considered a normal variant on the ECG of an athletic 28-year-old man?

A- Wenckebach phenomenon

B- Sinus bradycardia

C- Junctional rhythm

D- First degree heart block

**E- Left bundle branch block**

Q216. Which one of the following statements regarding B-type natriuretic peptide is incorrect?

A- Effective treatment for heart failure lowers a patients BNP level

B- Acts as a diuretic

C- A hormone produced mainly by the left ventricular myocardium in response to strain

D- Is a good marker of prognosis in patients with chronic heart failure

**E- The positive predictive value of BNP is greater than the negative predictive value**

Q217. One of your patients who has a family history of Marfan's syndrome has recently been diagnosed with the condition. What is the most important investigation to monitor their condition?

A- Urea and electrolytes

**B- Echocardiography**

C- Spirometry

D- Electrocardiogram

E- DEXA scan

Q218. An elderly man with aortic stenosis is assessed. Which one of the following would make the ejection systolic murmur quieter?

**A- Left ventricular systolic dysfunction**

B- Thyrotoxicosis

C- Mixed aortic valve disease

D- Expiration

E- Anaemia

Q219. An 82-year-old man is referred to cardiology by his GP with increasing dyspnoea or exertion and a systolic murmur. Examination demonstrates a blood pressure of 100/80 mmHg and a slow rising pulse. What is the most likely cause of his underlying condition?

A- Bicuspid aortic valve

B- Ventricular septal defect

C- Post rheumatic fever

**D- Calcification of the aortic valve**

E- Hypertrophic obstructive cardiomyopathy

Q220. You are called to the coronary care unit. A patient who has been admitted following a myocardial infarction has developed a broad complex tachycardia. You suspect a diagnosis of polymorphic ventricular tachycardia. Which one of the following factors is most likely to have precipitated this?

A- Hypoglycaemia

B- Bisoprolol

**C- Hypomagnesaemia**

D- Dehydration

E- Hyperkalaemia

Q221. Which one of the following features would best indicate severe aortic stenosis?

A- Valvular gradient of 35 mmHg

B- Quiet first heart sound

C- Loudness of ejection systolic murmur

**D- Fourth heart sound**

E- Development of an opening snap

Q222. A 28-year-old man with hypertrophic obstructive cardiomyopathy is investigated for palpitations. A 24 hour ECG reveals runs of non-sustained ventricular tachycardia. What is the most appropriate management?

A- AV node ablation

B- Accessory pathway ablation

C- Amiodarone

**D- Implantable cardioverter defibrillator**

E- Sotalol

Q223. A 34-year-old man is noted to have a pan-systolic murmur associated with large V waves in the JVP and pulsatile hepatomegaly. Which one of the following types of congenital heart disease is most associated with tricuspid regurgitation?

A- Atrial septal defect

**B- Ebstein's anomaly**

C- Coarctation of the aorta

D- Patent ductus arteriosus

E- Ventricular septal defect

Q224. How long should a patient stop driving for following an elective cardiac angioplasty?

A- No restriction

**B- 1 week**

C- 2 weeks

D- 4 weeks

E- 8 weeks

Q225. A 62-year-old man is admitted with to the cardiology ward with infective endocarditis. Blood cultures grow Streptococcus bovis. What is the most appropriate investigation given the blood culture findings?

A- Small bowel meal

B- Bronchoscopy

C- Cystoscopy

D- Gastroscopy

**E- Colonoscopy**

Q226. A 56-year-old man is admitted to the Emergency Department with headaches, chest pain and confusion. His initial observations show a blood pressure of 250/140 mmHg, pulse 90/min and temperature of 36.4º. On examination the blood pressure is confirmed and is equal in both arms. Blurring of the optic discs is noted on examination. He has no significant medical history and takes no regular medications. What is the most suitable initial management?

A- Oral ramipril

B- Intravenous phentolamine

C- Venesection

**D- Intravenous nitroprusside**

E- Intravenous hydralazine

Q227. Each one of the following physiological changes occur during exercise, except:

A- Increased myocardial contractibility

B- 50% increase in stroke volume

C- Up to 3-fold increase in heart rate

**D- Rise in diastolic blood pressure**

E- Venous constriction

Q228. A 62-year-old man comes for review. In the past month he has had two episodes of 'passing out'. The first occurred whilst going upstairs. The second occurred last week whilst he was getting out of a swimming pool. There were no warning signs prior to these episodes. He was told by people who witnessed the episode last week that he was only 'out' for around 15 seconds. He reports feeling 'groggy' for only a few seconds after the episode. On examination pulse is 90 / minute, blood pressure 110/86 mmHg, his lungs are clear and there is a systolic murmur which radiates to the carotid area. Which one of the following investigations should be arranged first?

A- 24 hour ECG monitor

**B- Echocardiogram**

C- Exercise tolerance test

D- CT head

E- Carotid doppler

Q229. A 44-year-old female is investigated for suspected idiopathic pulmonary hypertension. Which one of the following is the best method for deciding upon management strategy?

A- Genetic testing

**B- Acute vasodilator testing**

C- Trial of endothelin receptor antagonists

D- Serial echocardiography

E- Trial of calcium channel blockers

Q230. Which one of the following is least associated with myocarditis?

A- Chagas' disease

B- Lyme disease

**C- Leishmaniasis**

D- Coxsackie virus

E- Toxoplasmosis

Q231. Which one of the following ECG findings is least associated with digoxin use?

A- Bradycardia

B- Down-sloping ST depression

C- Flattened T waves

**D- Prolonged QT interval**

E- AV block

Q232. Which one of the following features would indicate cardiac tamponade rather than constrictive pericarditis?

**A- Pulsus parodoxus**

B- Tachycardia

C- Raised JVP

D- Hypotension

E- Muffled heart sounds

Q233. You are asked to urgently review a 61-year-old female on the cardiology ward due to difficulty in breathing. On examination she has a raised JVP with bilateral fine crackles to the mid zones. Blood pressure is 94/60 mmHg and the pulse is 140-150 and irregular. ECG confirms atrial fibrillation. What is the most appropriate management?

A- IV amiodarone

B- IV digoxin

**C- Urgent synchronised DC cardioversion**

D- Oral digoxin

E- IV flecainide

Q234. Pulmonary arterial hypertension may be seen in each one of the following conditions, except:

**A- Hepatitis B**

B- Eisenmenger's syndrome

C- Sickle cell anaemia

D- HIV

E- Sarcoidosis

Q235. A 43-year-old man who is known to have Wolff-Parkinson White syndrome presents to the Emergency Department with palpitations. He has no other significant history of note. The palpitations started around 4 hours ago and are not associated with chest pain or shortness of breath. On examination blood pressure is 124/80 mmHg and the chest is clear on auscultation. An ECG show atrial fibrillation at a rate of 154 bpm. Of the following options, what is the most appropriate management?

A- Adenosine

**B- Flecainide**

C- Verapamil

D- Digoxin

E- Sotalol

Q236. A 65-year-old man with a history of paroxysmal atrial fibrillation presents with palpitations. He has no other history of note and a recent echocardiogram was normal. An ECG confirms fast atrial fibrillation. Which one of the following agents is most likely to cardiovert him into sinus rhythm?

A- Atenolol

B- Procainamide

**C- Flecainide**

D- Disopyramide

E- Digoxin

Q237. A 62-year-old man is admitted to hospital following a myocardial infarction. Four days after admission he develops a further episode of central crushing chest pain. Which is the best cardiac marker to investigate his chest pain?

A- LDH

B- Troponin I

C- Troponin T

**D- CK-MB**

E- AST

Q238. Which one of the following is a cause of a soft second heart sound?

**A- Aortic stenosis**

B- Aortic regurgitation

C- Mitral stenosis

D- Mitral regurgitation

E- Pulmonary hypertension

Q239. A 72-year-old man with a history of chronic heart failure secondary to ischaemic cardiomyopathy is reviewed. He was discharged two weeks ago from hospital following a myocardial infarction. An echocardiogram done during his admission showed a left ventricular ejection fraction of 40% but did not demonstrate any valvular problems. Despite his current treatment with furosemide, ramipril, carvedilol, aspirin and simvastatin he remains short of breath on minimal exertion such as walking 30 metres. On examination his chest is clear and there is minimal peripheral oedema. What is the most appropriate next step in management?

A- Stop aspirin

B- Refer for cardiac resynchronisation therapy

C- Switch carvedilol to bisoprolol

D- Add angiotensin-2 receptor blocker

**E- Add an aldosterone antagonist**

Q240. A 76-year-old female is admitted after being found on the floor at her home. On examination she has a core temperature of 30ºC. Her serum electrolytes are within normal range. Which one of the ECG findings is most likely to be seen?

**A- Long QT interval**

B- 'U' waves

C- Short PR interval

D- Second degree heart block

E- Flattened T waves

Q241. A 62-year-old man is reviewed. His blood pressure is poorly controlled at 152/90 mmHg despite treatment with ramipril 10mg od, bendroflumethiazide 2.5mg od and amlodipine 10mg od. In addition to the antihypertensives he also takes aspirin and simvastatin. His most recent blood tests show the following: Na+ 139 mmol/l K + 4.2 mmol/l Urea 5.5 mmol/l Creatinine 98 µmol/l What is the most appropriate change to his medication?

A- Add frusemide

B- Increase ramipril to 20mg od

**C- Add spironolactone**

D- Add candesartan

E- Add atenolol

Q242. A patient with known heart failure has slight limitation of physical activity. She is comfortable at rest but housework results in fatigue, palpitations or dyspnoea. What New York Heart Association class best describes the severity of their disease?

A- NYHA Class 0

B- NYHA Class I

**C- NYHA Class II**

D- NYHA Class III

E- NYHA Class IV

Q243. A 51-year-old female presents to the Emergency Department following an episode of transient right sided weakness lasting 10-15 minutes. Examination reveals the patient to be in atrial fibrillation. If the patient remains in chronic atrial fibrillation what is the most suitable form of anticoagulation?

A- Aspirin

**B- Warfarin, target INR 2-3**

C- No anticoagulation

D- Warfarin, target INR 3-4

E- Warfarin, target INR 2-3 for six months then aspirin

Q244. A 52-year-old man with no significant past medical history is admitted to the Emergency Department with chest pain. His admission ECG shows anterior T wave inversion. On examination his blood pressure is 120/82 mmHg, pulse 90 / min and oxygen saturations are 97% on room air. He is now pain free. You calculate his 6 month mortality using GRACE to be 1.0%. What initial therapy should be given?

A- Oxygen + aspirin + enoxaparin

B- Aspirin + unfractionated heparin

C- Oxygen + aspirin + clopidogrel + enoxaparin

**D- Aspirin + fondaparinux**

E- Aspirin

Q245. In patients with atrial fibrillation (AF), which one of the following factors would make a rate control strategy, rather than rhythm control, more suitable?

A- Congestive heart failure

B- AF secondary to a corrected precipitant

C- Symptomatic

**D- Age > 65 years**

E- First presentation

Q246. A 23-year-old woman is investigated after collapsing whilst jogging. She felt briefly unwell and dizzy prior to collapsing but quickly recovered. There has been no previous similar episodes. Routine blood tests are normal but the ECG shows a corrected QT interval of 480ms. What is the most appropriate management?

A- Implantable cardioverter defibrillator

**B- Propranolol**

C- Amiodarone

D- Reassurance

E- Accessory pathway ablation

Q247. A 2-day-old baby girl is noted to become cyanotic whilst feeding and crying. A diagnosis of congenital heart disease is suspected. What is the most likely cause?

**A- Transposition of the great arteries**

B- Coarctation of the aorta

C- Patent ductus arteriosus

D- Tetralogy of Fallot

E- Ventricular septal defect

Q248. A 34-year-old woman is admitted to the Emergency Department following a collapse. An ECG shows a polymorphic ventricular tachycardia. Which one of the following is not associated with an increased risk of developing torsade de pointes?

A- Tricyclic antidepressants

B- Subarachnoid haemorrhage

**C- Hypercalcaemia**

D- Romano-Ward syndrome

E- Hypothermia

## **Chapter 4 Infectious Diseases**

Q1. A health care assistant sustains a needlestick injury whilst taking blood from a patient who is known to be HIV positive. Following thorough washing of the wound what is the most appropriate management?

A- HIV test of health care worker in 3 months to determine treatment

B- Immediate p24 HIV test of health care worker to determine treatment

**C- Oral antiretroviral therapy for 4 weeks**

D- Oral antiretroviral therapy for 3 months

E- Intravenous zidovudine

Q2. Which one of the following is a Gram negative coccus?

A- Haemophilus influenzae

**B- Moraxella catarrhalis**

C- Enterococcus faecalis

D- Listeria monocytogenes

E- Campylobacter jejuni

Q3. A man presents with severe vomiting. He reports not being able to keep fluids down for the past 12 hours. You suspect a diagnosis of gastroenteritis and on discussing possible causes he mentions reheating curry with rice the night before. What is the most likely causative organism?

A- Escherichia coli

B- Campylobacter

C- Salmonella

D- Shigella

**E- Bacillus cereus**

Q4. A patient with HIV is reviewed. Which one of the following is an example of a nucleoside analogue reverse transcriptase inhibitors?

**A- Zidovudine**

B- Indinavir

C- Ritonavir

D- Ribavirin

E- Efavirenz

Q5. A 17-year-old girl presents with a sore throat. On examination she has inflamed tonsils covered in white patches. Tender cervical lymphadenopathy and a low grade pyrexia are also present. Which one of the following organisms is most likely to be responsible?

A- Streptococcus viridans

B- Streptococcus agalactiae

C- Streptococcus pneumoniae

D- Staphylococcus aureus

**E- Streptococcus pyogenes**

Q6. Which of the following anti-retroviral drugs is most characteristically associated with pancreatitis?

A- Zidovudine

**B- Didanosine**

C- Indinavir

D- Ritonavir

E- Nevirapine

Q7. A 19-year-old man presents asking for advice. His girlfriend has recently been diagnosed with meningococcal meningitis. He is worried he may have 'caught it'. What is the recommended antibiotic prophylaxis for close contacts such as this man?

A- Oral co-amoxiclav

B- Oral phenoxymethylpenicillin

**C- Oral rifampicin**

D- Oral erythromycin

E- Intramuscular cefotaxime

Q8. A baby is born to a mother who is known to have chronic hepatitis B. The mothers latest results are as follows: HBsAg Positive HBeAg Positive What is the most appropriate strategy for reducing the vertical transmission rate?

**A- Give the newborn hepatitis B vaccine + hepatitis B immunoglobulin**

B- Give the newborn hepatitis B vaccine

C- Give the newborn hepatitis B immunoglobulin

D- Give the mother intravenous zidovudine during labour

E- Give the mother hepatitis B immunoglobulin shortly before birth + the newborn hepatitis B vaccine

Q9. Which of the following infections usually has the longest incubation period?

A- Typhoid

B- Diphtheria

C- Dengue fever

D- Measles

**E- Chickenpox**

Q10. What is the mechanism of action of rifampicin?

A- Inhibits DNA synthesis

B- Interferes with cell wall formation

**C- Inhibits RNA synthesis**

D- Causes misreading of mRNA

E- Inhibits protein synthesis

Q11. A 17-year-old female presents for review. Four days ago she presented to her doctor with a severe sore throat, lethargy and headache. Her doctor prescribed a course of amoxicillin to treat an upper respiratory tract infection. Two days ago she developed a widespread, pruritic maculopapular rash. Her original symptoms have also not improved. What is the most likely diagnosis?

**A- Infectious mononucleosis**

B- Kawasaki disease

C- Penicillin allergy

D- HIV seroconversion

E- Beta-lactamase producing streptococcal sore throat

Q12. A 31-year-old female presents to the genitourinary medicine clinic due to four fleshy, protuberant lesions on her vulva which are slightly pigmented. She has recently started a relationship with a new partner. What is the most appropriate initial management?

A- Oral aciclovir

**B- Topical podophyllum**

C- Topical salicylic acid

D- Topical aciclovir

E- Electrocautery

Q13. A 31-year-old man from Russia who is known to be HIV positive presents with purple plaques on his skin. Which of the following viruses is thought to be the cause of Kaposi's sarcoma?

A- HTLV-1

B- HIV-2

**C- HHV-8**

D- CMV

E- HPV-8

Q14. Which one of the following is least associated with rabies?

A- Hydrophobia

**B- Opisthotonus**

C- Pyrexia

D- Headache

E- Hypersalivation

Q15. A 22-year-old woman presents with lethargy, pyrexia and headaches. She is a student and returned from a holiday in Ibiza ten days ago. These symptoms have been present for the past six days and she is wondering whether she may need an antibiotic. She also has a history of menorrhagia and is concerned that she may be anaemic. Clinical examination reveals a temperature of 37.9ºC and marked cervical lymphadenopathy. You order a full blood count which is reported as follows: Hb 12.1 g/dl Platelets 189 \* 109 /l WCC 13.1 \* 109 /l Neutrophils 5.2 \* 109 /l Lymphocytes 6.2 \* 109 /l Film Atypical lymphocytes seen What is the most likely diagnosis?

A- Acute lymphoblastic leukaemia

B- Hashimoto's thyroiditis

**C- Infectious mononucleosis**

D- HIV seroconversion

E- Septicaemia secondary to streptococcal throat infection

Q16. A 45-year-old man presents with pain and swelling of his left big toe. He has recently started treatment for active tuberculosis. Which one of the following medications is likely to be responsible?

A- Streptomycin

B- Rifampicin

C- Ethambutol

D- Isoniazid

**E- Pyrazinamide**

Q17. A 34-year-old female presents with fever and lower abdominal pain. Over the past five days she has noticed deep dyspareunia and some post-coital bleeding. Her last period began 10 days ago. She is diffusely tender in the suprapubic area and vaginal examination reveals cervical excitation. Endocervical swabs are taken. A diagnosis of pelvic inflammatory disease is suspected. What is the most appropriate management?

A- Oral doxycycline

B- Await endocervical swab results

C- Oral amoxicillin + ciprofloxacin

D- Oral doxycycline + ciprofloxacin

**E- Oral ofloxacin + metronidazole**

Q18. A 30-year-old man comes for review. He lives with a woman who has recently being diagnosed with having tuberculosis. The man was born in the UK, has no past medical history of note and is currently asymptomatic. His records show that he had the BCG vaccination as a child. What is the most appropriate test to check for latent tuberculosis?

A- Heaf test

**B- Mantoux test**

C- Sputum culture

D- Chest x-ray

E- Interferon-gamma blood test

Q19. A 37-year-old sewer worker presents to the Emergency Department with flu-like symptoms and pyrexia for the past 3 days. Since this morning he has started to develop a headache and signs of meningism are found on examination. Blood tests show: Sodium 145 mmol/l Potassium 4.7 mmol/l Urea 10.3 mmol/l Creatinine 133 µmol/l What is the antibiotic treatment of choice?

A- Co-trimoxazole

B- Ciprofloxacin

C- Metronidazole

**D- Benzylpenicillin**

E- Erythromycin

Q20. Which one of the following organisms causes lymphogranuloma venereum?

A- Haemophilus ducreyi

B- Klebsiella granulomatis

C- Herpes simplex virus

**D- Chlamydia**

E- Treponema pallidum

Q21. A 74-year-old female presents with headache and neck stiffness to the Emergency Department. Following a lumbar puncture the patient was started on IV ceftriaxone. CSF culture grows Listeria monocytogenes. What is the most appropriate treatment?

A- Add IV amoxicillin

**B- Change to IV amoxicillin + gentamicin**

C- Add IV ciprofloxacin

D- Add IV co-amoxiclav

E- Continue IV ceftriaxone as monotherapy

Q22. A 35-year-old homosexual man is referred to the local genitourinary clinic following the development of a solitary painless penile ulcer associated with painful inguinal lymphadenopathy. He has recently developed rectal pain and tenesmus. What is the most likely diagnosis?

A- Herpes simplex infection

B- Syphilis

C- Granuloma inguinale

D- Chancroid

**E- Lymphogranuloma venereum**

Q23. Which one of the following organisms causes West African sleeping sickness?

A- Leishmania tropica

**B- Trypanosoma gambiense**

C- Trypanosoma rhodesiense

D- Leishmania mexicana

E- Trypanosoma cruzi

Q24. An 18-year-old man is bitten by a frantic dog whilst taking a gap year in Ecuador. He is worried about rabies and phones for advice. He was not immunised against prior to travelling to Ecuador. What is the most appropriate advice after thorough cleansing of the wound?

**A- Give human rabies immunoglobulin + full course of vaccination**

B- Give human rabies immunoglobulin + oral penicillin for the next 2 weeks

C- Advise low risk but take oral co-amoxiclav for the dog bite

D- Give human rabies immunoglobulin

E- Give full course of vaccination

Q25. A 12-year-old boy who had a splenectomy following a road traffic accident is reviewed in clinic. He had his full immunisation course as a child and was given a repeat pneumococcal vaccination 5 days following surgery. What is the most appropriate ongoing management?

A- Booster dose of Hib and MenC vaccine + lifelong penicillin V

B- Booster dose of Hib and MenC vaccine + penicillin V for 2 years

C- Lifelong penicillin V

D- Booster dose of Hib and MenC vaccine + annual influenza vaccination + penicillin V for 2 years

**E- Booster dose of Hib and MenC vaccine + annual influenza vaccination + lifelong penicillin V**

Q26. A 27-year-old woman develops fever and lymph node swelling after being scratched by her cat. Which one of the organisms is responsible for cat scratch disease?

A- Bordetella pertussis

B- Moraxella catarrhalis

**C- Bartonella henselae**

D- Francisella tularensis

E- Yersinia enterocolitica

Q27. A 40-year-old man is admitted to the intensive care unit following a severe episode of acute pancreatitis. On the third day of his admission he becomes pyrexial. A septic screen is ordered including cultures taken from both peripheral blood and the internal jugular line. There is no signs of infection on the chest x-ray or urine sample. The microbiology laboratory phone to report signs of bacterial infection in the sample from the central line. What is the most likely organism to be isolated?

A- Pseudomonas aeruginosa

B- Escherichia coli

**C- Staphylococcus epidermidis**

D- Streptococcus pneumoniae

E- Staphylococcus aureus

Q28. A 19-year-old man from a travelling community presents to the Emergency Department with breathing difficulties. On examination he has a temperature of 38.2ºC and stridor. A diagnosis of acute epiglottitis is suspected. Which one of the following organisms is most likely to be responsible?

A- Epstein Barr Virus

B- Streptococcus pneumoniae

C- Neisseria meningitidis

**D- Haemophilus influenzae**

E- Staphylococcus aureus

Q29. Which of the following types of viral meningitis may be characteristically associated with a low cerebrospinal fluid glucose level?

**A- Mumps**

B- Cytomegalovirus

C- Measles

D- HIV

E- Echovirus

Q30. A 39-year-old man returns from a two week business trip to Kenya. Four weeks after his return he presents complaining of malaise, headaches and night sweats. On examination there is a symmetrical erythematous macular rash over his trunk and limbs associated with cervical and inguinal lymphadenopathy. What is the most likely diagnosis?

A- Typhoid fever

B- Tuberculosis

C- Dengue fever

D- Schistosomiasis

**E- Acute HIV infection**

Q31. A 62-year-old woman who has recently been treated for ascending cholangitis is referred to hospital due to persistent fever and anorexia. An ultrasound scan reveals the presence of a liver abscess. What is the most appropriate antibiotic therapy to accompany drainage of the abscess?

A- Vancomycin + meropenem

B- Co-amoxiclav + metronidazole

**C- Amoxicillin + ciprofloxacin + metronidazole**

D- Clindamycin + metronidazole

E- Metronidazole + vancomycin

Q32. A prison GP is bitten by a patient who is known to have hepatitis B. The GP has a documented full history of hepatitis B vaccination and was known to be a responder. What is the most appropriate action to reduce the chance of contracting hepatitis B?

A- Admit for intravenous interferon

B- Give hepatitis B immune globulin

C- Give hepatitis B immune globulin + hepatitis B vaccine booster

**D- Give hepatitis B vaccine booster**

E- Give oral ribavirin for 4 weeks

Q33. Which one of the following organisms causes erysipelas?

A- Staphylococcus aureus

B- Streptococcus pneumoniae

C- Staphylococcus epidermidis

**D- Streptococcus pyogenes**

E- Streptococcus viridans

Q34. A 31-year-old woman who is known to be HIV positive presents following a positive pregnancy test. Her last menstrual period was 6 weeks ago. The last CD4 count was 420 \* 106 /l and she does not take any antiretroviral therapy. What is the most appropriate management with regards to antiretroviral therapy?

A- Check CD4 at 12 weeks and initiate antiretroviral therapy if CD4 count is less than 350 \* 106/l

B- Do not give antiretroviral therapy

**C- Start antiretroviral therapy at 20-32 weeks**

D- Start antiretroviral therapy at 10-12 weeks

E- Start antiretroviral therapy immediately

Q35. A 60-year-old man with a past medical history of osteoarthritis presents with a swollen, red and hot left knee joint. He is unable to move it due to the pain. On examination he is pyrexial with a temperature of 38.7 C and a blood sample shows a white cell count of 22.8 \*109 /l. Following joint aspiration, what is the most appropriate antibiotic therapy?

A- IV flucloxacillin + benzylpenicillin

B- IV gentamicin + benzylpenicillin

**C- IV flucloxacillin**

D- IV vancomycin + cefotaxime

E- IV gentamicin + rifampicin + benzylpenicillin

Q36. A 27-year-old pregnant woman is found to have Chlamydia. What is the most appropriate treatment?

A- No antibiotic therapy is indicated

B- Cefixime

**C- Erythromycin**

D- Doxycycline

E- Ciprofloxacin

Q37. A 43-year-old sheep farmer presents with a lesion on his right hand. It initially started as a small, raised, red papule but has now become larger. On examination a 2cm, flat-topped haemorrhagic lesion is seen. What is the most likely diagnosis?

**A- Orf**

B- Staphylococcal furuncle

C- Hand, foot and mouth disease

D- Paronychia

E- Anthrax

Q38. A 35-year-old woman is referred to hospital. As part of a liver screen the following results are obtained: Anti-HBs Negative Anti-HBc Positive HBs antigen Positive IgM anti-HBc Negative Anti-HBs = Hepatitis B Surface Antibody; Anti-HBc = Hepatitis B Core Antibody; HBs antigen = Hepatitis B Surface Antigen What is the patient's hepatitis B status?

A- Probable hepatitis D infection

B- Acute hepatitis B infection

C- Previous immunisation to hepatitis B

**D- Chronic hepatitis B**

E- Previous hepatitis B infection, not a carrier

Q39. A 23-year-old man is admitted to the Emergency Department with an evolving purpuric rash, pyrexia and confusion. His GP had given him intramuscular benzylpenicillin in the surgery and dialled 999. Which one of the following investigations is most likely to reveal the diagnosis?

A- Urinary antigen

**B- Blood PCR for meningococcus**

C- Blood culture

D- CT head

E- Lumbar puncture

Q40. A 19-year-old woman is reviewed in the genitourinary medicine clinic. She presented with vaginal discharge and dysuria. Microscopy of an endocervical swab showed a Gram-negative coccus that was later identified as Neisseria gonorrhoea. This is her third episode of gonorrhoea in the past two years. What is the most likely complication from repeated infection?

A- Lymphogranuloma venereum

B- Cervical cancer

C- Arthropathy

**D- Infertility**

E- Uterine abscess

Q41. The most appropriate treatment for cutaneous larva migrans is:

**A- Thiabendazole**

B- Sulfadoxine

C- Pyrimethamine

D- Metronidazole

E- Dapsone

Q42. A 19-year-old medical student undergoes primary immunisation against hepatitis B. His post immunisation bloods are reported as follows: Anti-HBs < 10 mIU/ml What is the most appropriate course of action?

A- Give one further dose of hepatitis B vaccine

B- Do a HIV test

**C- Test for current or past hepatitis B + repeat course (i.E- 3 doses) of vaccine**

D- Give two further doses of hepatitis B vaccine

E- Give a course of hepatitis B immune globulin (HBIG) + one further dose of hepatitis B vaccine

Q43. A 34-year-old who has recently returned from Southeast Asia is investigated for abdominal cramping, anorexia and chronic diarrhoea. He has also recently developed a cough which is blood-streaked. Stool microscopy reveals Strongyloides stercoralis larvae. Which one of the following is the most appropriate treatment?

**A- Albendazole**

B- Ciprofloxacin

C- Praziquantel

D- Diethylcarbamazine

E- Metronidazole

Q44. A 39-year-old man is admitted to hospital with decompensated liver disease of unknown aetiology. As part of a liver screen the following results are obtained: Anti-HBs Positive Anti-HBc Negative HBs antigen Negative Anti-HBs = Hepatitis B Surface Antibody; Anti-HBc = Hepatitis B Core Antibody; HBs antigen = Hepatitis B Surface Antigen What is this man's hepatitis B status?

A- Chronic hepatitis B- highly infectious

**B- Previous immunisation to hepatitis B**

C- Probable hepatitis D infection

D- Acute hepatitis B infection

E- Chronic hepatitis B- not infectious

Q45. Which one of the following is least associated with a false negative tuberculin skin test?

A- Lymphoma

B- Miliary tuberculosis

C- Sarcoidosis

**D- Chronic kidney disease stage 3**

E- HIV

Q46. A 24-year-old woman presents due to an itchy vulva and pain during sex. She also mentions a green, offensive vaginal discharge for the past 2 weeks. What is the most likely diagnosis?

A- Candida

B- Bacterial vaginosis

C- Gonorrhoea

**D- Trichomonas vaginalis**

E- Chlamydia

Q47. A 34-year-old man is diagnosed as being HIV positive. He was born and brought up in the United Kingdom and is currently fit and well with no past medical history. At what point should anti-retroviral therapy be started?

A- At the time of diagnosis

B- CD4 < 200 \* 106/l

C- CD4 < 250 \* 106/l

D- CD4 < 300 \* 106/l

**E- CD4 < 350 \* 106/l**

Q48. You are counselling a 26-year-old man who has recently had a positive HIV test. His most recent CD4 count is 650 cells/mm^3. Which one of the following vaccinations is contraindicated?

**A- Oral poliomyelitis**

B- Yellow fever

C- Pneumococcus

D- Parenteral poliomyelitis

E- Measles, Mumps, Rubella

Q49. A 62-year-old female with chronic renal failure (GFR = 35 ml/min) is diagnosed as having pulmonary tuberculosis. What changes need to be made to her anti-tuberculosis regime given her renal impairment?

A- Reduction in isoniazid dose

B- Reduction in rifampicin dose

C- Reduction in pyrazinamide dose

**D- Reduction in ethambutol dose**

E- No changes

Q50. A 63-year-old man who migrated from India 7 months ago is referred to the acute medical unit with a history of headache and pyrexia. A lumbar puncture suggests a diagnosis of meningeal tuberculosis. What treatment should he be started on?

A- Rifampicin, isoniazid, pyrazinamide and ethambutol

B- Rifampicin and streptomycin

C- Rifampicin, isoniazid, pyrazinamide, ethambutol and streptomycin

D- Rifampicin and isoniazid with prednisolone

**E- Rifampicin, isoniazid, pyrazinamide and ethambutol with prednisolone**

Q51. A 39-year-old female who has recently emigrated from sub-Saharan Africa is screened for tuberculosis. She reports being fit and well with no past medical history and has never had a BCG vaccination. Her chest x-ray is normal so she has a Mantoux test which is positive. An interferon gamma test is also performed which is positive. A HIV test is requested which is negative. What treatment would you recommend? and isoniazid for 4 months

**A- Isoniazid for 6 months**

B- Rifampicin, isoniazid, pyrazinamide and ethambutol for 6 months

C- Observe

D- Rifampicin, isoniazid, pyrazinamide and ethambutol for 2 months then step down to rifampicin

E- Rifampicin and isoniazid for 6 months

Q52. A 12-year-old girl is prescribed oseltamivir for suspected influenza. What is the mechanism of action of oseltamivir?

A- Inhibits RNA polymerase

B- Interferes with the capping of viral mRNA

**C- Neuraminidase inhibitor**

D- Inhibits DNA polymerase

E- Protease inhibitor

Q53. A 29-year-old HIV positive man is admitted with right-sided hemiplegia. For the past four days he has been complaining of headache and flu-like symptoms. CT scan shows multiple ring enhancing lesions. A diagnosis of cerebral toxoplasmosis is suspected. What is the most suitable management?

A- Artemether and lumefantrine

B- Co-trimoxazole

C- Supportive treatment

**D- Pyrimethamine and sulphadiazine**

E- Metronidazole and gentamicin

Q54. A 22-year-old female presents with an offensive vaginal discharge. History and examination findings are consistent with a diagnosis of bacterial vaginosis. What is the most appropriate initial management?

A- Oral azithromycin

B- Topical hydrocortisone

**C- Oral metronidazole**

D- Clotrimazole pessary

E- Advice regarding hygiene and cotton underwear

Q55. A 38-year-old man presents to the genitourinary clinic with multiple, painless genital ulcers. A diagnosis of granuloma inguinale is made. What is the causative organism?

**A- Klebsiella granulomatis**

B- Chlamydia

C- Herpes simplex virus

D- Treponema pallidum

E- Haemophilus ducreyi

Q56. A 29-year-old woman presents to the genitourinary medicine clinic for treatment of recurrent genital warts. Which one the following viruses are most likely to be responsible?

A- Human papilloma virus 16 & 18

B- Human papilloma virus 13 & 17

**C- Human papilloma virus 6 & 11**

D- Human papilloma virus 12 & 14

E- Human papilloma virus 15 & 21

Q57. Which one of the following vaccines uses an inactivated preparation of the organism or virus?

A- Tetanus

B- Meningococcus

C- Oral polio

**D- Rabies**

E- Diphtheria

Q58. Which one of the following congenital infections is most characteristically associated with chorioretinitis?

A- Cytomegalovirus

B- Treponema pallidum

C- Rubella

**D- Toxoplasma gondii**

E- Parvovirus B19

Q59. Infection with Schistosoma haematobium is most strongly associated with:

A- Transitional cell bladder cancer

B- Lung cancer

C- Hepatoma

D- Vulval carcinoma

**E- Squamous cell bladder cancer**

Q60. Which of the following is least recognised as a cause of a false positive VDRL test?

A- Pregnancy

B- SLE

**C- Oral contraceptive pill**

D- Tuberculosis

E- HIV

Q61. A man develops vomiting and abdominal pain 2 hours after leaving a Chinese restaurant. What is the most likely causative organism?

A- Escherichia coli

B- Shigella

C- Staphylococcus aureus

**D- Bacillus cereus**

E- Clostridium perfringens

Q62. A 34-year-old man from Venezuela presents with a flu-like illness and periorbital oedema. Generalised lymphadenopathy is noted. A diagnosis of Chagas' disease is confirmed on blood smear. What is the most appropriate treatment?

**A- Benznidazole**

B- Sodium stibogluconate

C- Metronidazole

D- Pentamidine

E- Atovaquone-proguanil

Q63. A 48-year-old salesman presents with a 5 day history of cough and pleuritic chest pain. He has no past medical history of note. On examination his temperature is 38.2ºC, blood pressure is 120/80 mmHg, respiratory rate 18/min and pulse 84/min. Auscultation of the chest reveals bronchial breathing in the left base and the same area is dull to percussion. What is the most suitable management?

**A- Oral amoxicillin + discharge**

B- Oral co-amoxiclav + discharge

C- Oral amoxicillin + erythromycin + discharge

D- Oral erythromycin + discharge

E- Admit

Q64. What is the first line treatment in hydatid disease?

A- Metronidazole

B- Ciprofloxacin

C- Itraconazole

**D- Albendazole**

E- Sodium stibogluconate

Q65. Which one of the following is least likely to result from Streptococcus pyogenes infection?

A- Rheumatic fever

B- Scarlet fever

C- Cellulitis

D- Type 2 necrotizing fasciitis

**E- Pneumonia**

Q66. A 19-year-old man presents with an annular rash, pyrexia and polyarthralgia to an the Emergency Department. He has just returned from the New Forest and remembers being bitten by a tick. Given the likely diagnosis, what is the most appropriate antibiotic therapy?

A- Ciprofloxacin

B- Amoxicillin

C- Metronidazole

**D- Doxycycline**

E- Ceftriaxone

Q67. Which one of the following organisms is most contagious?

**A- Varicella zoster virus**

B- Epstein Barr virus

C- Rotavirus

D- Herpes simplex virus

E- Haemophilus influenzae

Q68. A 50-year-old sewage worker presents with a one week history of fever and feeling generally unwell. Which one of the following features would be least consistent with a diagnosis of leptospirosis?

A- Meningism

B- Conjunctival erythema

**C- Productive cough**

D- Decreased urine output

E- Severe myalgia

Q69. A 33-year-old man presents 6 weeks after visiting North Africa on business. He describes feeling lethargic, abdominal pain and having episodic fever. A blood screen is sent which reveals the following: Hb 15.9 g/dl WBC 7.1 \*109 /l Platelets 343 \*109 /l Bilirubin 53 µmol/l ALP 169 u/l ALT 364 u/l Hepatitis A IgM Negative HBsAg Negative What is the most likely diagnosis?

A- Infectious mononucleosis

B- Hepatitis B

C- Hepatitis C

D- HIV

**E- Hepatitis E**

Q70. What is the most appropriate antibiotic to use in cholera?

A- Erythromycin

B- Metronidazole

**C- Doxycycline**

D- Penicillin V

E- Trimethoprim

Q71. A 17-year-old man attends the local sexual health clinic. He has developed a large, keratinised genital wart on the shaft of his penis. This has been present for around three months but he has been too embarrassed to present before now. What is the most appropriate initial management?

A- Topical aciclovir

**B- Cryotherapy**

C- Topical salicylic acid

D- Electrocautery

E- Topical podophyllum

Q72. A 24-year-old man is admitted to the Emergency Department with breathing difficulties and confusion three weeks after returning from a holiday in Cambodia. His partner says he has had 'the flu' for the past two weeks. A blood film is positive for malarial parasites and a chest x-ray and arterial blood gases suggest acute respiratory distress syndrome. A diagnosis of severe falciparum malaria is suspected. What is the treatment of choice?

**A- Intravenous artesunate**

B- Intravenous clindamycin + oral artemether-lumefantrine

C- Intravenous artemether-lumefantrine

D- Oral atovaquone-proguanil

E- Intravenous quinine

Q73. A phlebotomist gives herself a needlestick injury whilst taking blood from a patient who is known to have the HIV infection. What is the chance that the phlebotomist will develop HIV?

A- 0.03%

**B- 0.3%**

C- 1%

D- 3%

E- 5-10%

Q74. Which one of the following statements regarding hepatitis B is correct? vaccine

A- Ribavirin is the treatment of choice for chronic hepatitis B

B- All patient immunised against hepatitis B require an anti-HBs check to assess their response to the

**C- 10-15% of adults fail to respond or respond poorly to 3 doses of the vaccine**

D- The vaccine is of the live-attenuated type

E- An anti-HBs level of 20 mIU/ml indicates an adequate response to the vaccine

Q75. A 35-year-old man returns from a two week holiday in Italy. He has a 10 day history of rectal bleeding associated with lower back pain. On examination there is a painful swelling of his right knee. What is the most likely diagnosis?

**A- Gonococcal septicaemia**

B- Amoebiasis

C- Crohn's disease

D- Tuberculosis

E- Ulcerative colitis

Q76. A 27-year-old male presents with malaise, pyrexia, lymphadenopathy and a maculopapular rash. The Monospot test is negative. Given a history of high-risk sexual behaviour you are asked to exclude a HIV seroconversion illness. What is the most appropriate investigation?

A- Antibodies to HIV-2

B- gp120 polymerase chain reaction

**C- p24 antigen test**

D- CCR5 polymerase chain reaction

E- Antibodies to HIV-1

Q77. A 47-year-old lady is referred by her GP with a two day history of fever and headache. She is normally fit and well and has no past medical history of note. On examination you note nuchal rigidity. Investigations show the following: Serum glucose 4.9 mmol/l Lumbar puncture reveals: Opening pressure 14 cmCSF Appearance Cloudy Glucose 1.7 mmol/l Protein 1.9 g/l White cells 900 / mm³ (90% polymorphs) What is the most likely infective agent?

**A- Streptococcus pneumoniae**

B- E- coli

C- Listeria monocytogenes

D- Enterovirus

E- Streptococcus pyogenes

Q78. A male child from a travelling community is diagnosed with measles. Which one of the following complications is he at risk from in the immediate aftermath of the initial infection?

A- Arthritis

B- Pancreatitis

C- Infertility

D- Subacute sclerosing panencephalitis

**E- Pneumonia**

Q79. A 34-year-old postman attends the Emergency Department following a dog bite to his right hand. What is the most appropriate antibiotic therapy?

A- Metronidazole + amoxicillin

B- Erythromycin

**C- Co-amoxiclav**

D- Metronidazole

E- Flucloxacillin + penicillin

Q80. A 34-year-old man with a past history of HIV infection presents to the Emergency Department with watery diarrhoea. Cryptosporidium infection is confirmed on ZN staining. What is the most suitable management?

A- Metronidazole

B- Sulfadiazine + pyrimethamine

**C- Supportive therapy**

D- Rifampicin + ethambutol + clarithromycin

E- Co-trimoxazole

Q81. You review a 14-year-old boy who has recently emigrated from Russia. He was involved in car accident two years ago and underwent an emergency splenectomy. Following this he takes penicillin V on a daily basis. He is unsure of his vaccination history. Which organism is he particularly suscepitble to?

A- Staphylococcus aureus

B- HIV

**C- Haemophilus influenzae**

D- Streptococcus pneumoniae

E- Mycobacterium tuberculosis

Q82. A 25-year-old man returns from a gap-year in Central and South America and presents with a 2 month history of an ulcerating lesion on his lower lip. Examination of his nasal and oral mucosae reveals widespread involvement. What is the likely cause?

**A- Leishmania brasiliensis**

B- Leishmania mexicana

C- Trypanosoma cruzi

D- Basal cell carcinoma

E- Leishmania donovani

Q83. A 33-year-old man who is HIV positive is admitted to the Emergency Department with confusion and drowsiness. A CT head shows multiple ring enhancing lesions. What is the most likely diagnosis?

A- Progressive multifocal leukoencephalopathy

B- Cryptococcal infection

**C- Cerebral toxoplasmosis**

D- CMV encephalitis

E- Tuberculosis

Q84. A 30-year-old man is diagnosed as having malaria following a recent trip to Zimbabwe. Which one of the following is most likely to indicate severe malaria?

A- Parasitaemia 1%

B- Heart rate 102 per minute

C- White blood cells 18.2 \* 109/l

D- Platelets 105 \* 109/l

**E- Respiratory rate 30 per minute**

Q85. A 30-year-old intravenous drug user is diagnosed as having osteomyelitis of the right tibia. What is the most likely causative organism?

A- Salmonella species

B- Haemophilus influenzae

**C- Staphylococcus aureus**

D- Enterobacter species

E- Streptococcus pyogenes

Q86. A 30-year-old woman presents with a white, malodorous vaginal discharge. There is no associated itch or dyspareunia. A diagnosis of bacterial vaginosis is suspected. Overgrowth of which one of the following organisms is most likely to cause this presentation?

A- Lactobacilli

B- Trichomonas

C- Candida

D- Mycoplasma hominis

**E- Gardnerella**

Q87. A 33-year-old woman who was diagnosed as having HIV-1 two years ago is reviewed in clinic. She is fit and well currently and has no symptoms of note. The only medication she takes is the occasional paracetamol for tension headaches. Her latest blood tests are as follows: CD4 325 \* 106 /l What is the most appropriate action?

A- Wait until the CD4 count is below 200 \* 106/l

B- Wait until the CD4 count is above 350 \* 106/l

C- Wait until the CD4 count is below 250 \* 106/l

**D- Start antitretroviral thearpy now**

E- Wait until the CD4 count is below 300 \* 106/l

Q88. A 19-year-old student is brought to the Emergency Department by friends due to a severe headache and drowsiness. On examination he has a widespread purpuric rash. Meningococcal infection is strongly suspected but he is known to be penicillin allergic (previous anaphylaxis). What is the antibiotic of choice?

**A- Chloramphenicol**

B- Meropenem

C- Teicoplanin

D- Erythromycin

E- Ciprofloxacin

Q89. A 43-year-old man from South Africa is reviewed in clinic. He has recently started treatment for tuberculosis but is complaining of a deterioration in his vision. Which one of the following drugs is most likely to cause decreased visual acuity?

A- Rifampicin

B- Streptomycin

C- Isoniazid

**D- Ethambutol**

E- Pyrazinamide

Q90. Which one of the following statements is true regarding Listeria monocytogenes?

A- Multiples rapidly at high temperatures

B- The organism is resistant to ampicillin

C- It is a Gram negative bacillus

D- It is diagnosed by the presence of urinary antigen

**E- May cause ataxia**

Q91. Which one of the following is a live attenuated vaccine?

**A- Yellow fever**

B- Rabies

C- Pertussis

D- Diphtheria

E- Tetanus

Q92. Following a diagnosis of tetanus, what is the most appropriate antibiotic therapy to give with human tetanus immunoglobulin?

A- IV clarithromycin

B- IV benzylpenicillin

C- IV gentamicin

**D- IV metronidazole**

E- IV ciprofloxacin

Q93. Which one of the following congenital infections is most characteristically associated with sensorineural deafness?

A- Toxoplasma gondii

B- Parvovirus B19

**C- Rubella**

D- Treponema pallidum

E- Cytomegalovirus

Q94. A 31-year-old man who is known to be HIV positive presents with dyspnoea and a dry cough. He is currently homeless and has not been attending his outpatient appointments or taking antiretroviral medication. Clinical examination reveals a respiratory rate of 24 / min. Chest auscultation is unremarkable with only scattered crackles. His oxygen saturation is 96% on room air but this falls rapidly after walking the length of the ward. Given the likely diagnosis, what is the most appropriate first-line treatment?

A- Fluconazole

**B- Co-trimoxazole**

C- Erythromycin

D- Ganciclovir

E- Sulfadiazine and pyrimethamine

Q95. A 19-year-old man presents with a compound fracture of his leg following a fall from scaffolding. Examination reveals soiling of the wound with mud. He is sure he has had five previous tetanus vaccinations. What is the most appropriate course of action to prevent the development of tetanus?

**A- Clean wound + intramuscular human tetanus immunoglobulin**

B- Clean wound + tetanus vaccine

C- Clean wound + tetanus vaccine + intramuscular human tetanus immunoglobulin

D- Clean wound + tetanus vaccine + benzylpenicillin

E- Clean wound

Q96. A 44-year-old farmer presents with headache, fever and muscle aches. He initially thought he had a bad cold but his symptoms have got progressively worse over the past week. During the review of systems he reports nausea and a decreased urine output. On examination his temperature is 38.2ºC, pulse 102 / min and his chest is clear. Subconjunctival haemorrhages are noted but there is no evidence of jaundice. What is the most likely diagnosis?

A- Mycoplasma pneumonia

B- Lyme disease

C- Legionella pneumonia

D- Listeria

**E- Leptospirosis**

Q97. A 57-year-old female presents with headache and fever to the Emergency Department. On examination neck stiffness is noted along with a positive Kernig's sign. A lumbar puncture is performed and reported as follows: CSF culture Gram positive bacilli What is the most likely causative organism?

A- Cryptococcus

B- Haemophilus influenzae

C- Streptococcus pneumoniae

D- E- coli

**E- Listeria monocytogenes**

Q98. Which one of the following is true regarding linezolid?

**A- Active against both MRSA and VRE (Vancomycin-Resistant Enterococcus)**

B- Bactericidal in action

C- No activity against GISA (Glycopeptide Intermediate Staphylococcus aureus)

D- Adverse effects include raised platelet count

E- Inhibits RNA synthesis

Q99. A 43-year-old Asian man presents with headache and neck stiffness. CT brain is normal and a lumbar puncture is performed with the following results Serum glucose 4.7 mmol/l Lumbar puncture reveals: Opening pressure 15 cmCSF Appearance Cloudy Glucose 3.3 mmol/l Protein 0.7 g/l White cells 100 / mm³ (70% lymphocytes) What is the most likely diagnosis?

A- Bacterial meningitis

**B- Viral meningitis**

C- Tuberculous meningitis

D- Normal CSF result

E- Cryptococcal meningitis

Q100. A 23-year-old woman comes for review. She has had recurrent genital warts for the past 4 years which have failed to respond to topical podophyllum. On one occasion she had cryotherapy but will not have it again due to local discomfort. On examination she has a large number of fleshy genital warts around her introitus. What is the most appropriate next step in treatment?

A- Topical glutaraldehyde

B- Oral podophyllum

**C- Topical imiquimod**

D- Oral aciclovir

E- Topical salicylic acid

Q101. A 30-year-old man presents to the genito-urinary medicine clinic. He has been handed a slip from an ex-girlfriend stating she has tested positive for Chlamydia. He last slept with her 2 months ago. He has no symptoms of note, in particular no dysuria or discharge. What is the most appropriate management?

A- Reassure symptoms would have presented by now

B- Offer antibiotic therapy

**C- Offer Chlamydia testing and antibiotic treatment immediately without waiting for the results**

D- Offer Chlamydia testing and antibiotic treatment if positive

E- Notify public health

Q102. A 22-year-old woman who is an immigrant from Malawi presents for review as she thinks she is pregnant. This is confirmed with a positive pregnancy test. She is known to be HIV positive. Which one of the following should not be part of the management plan to ensure an optimal outcome?

A- Oral zidovudine for the newborn until 6 weeks of age

B- Maternal antiretroviral therapy

**C- Encourage breast feeding**

D- Intrapartum zidovudine infusion

E- Elective caesarean section

Q103. A 33-year-old man is admitted due to profuse diarrhoea. He has a history of HIV infection and Cryptosporidium diarrhoea is suspected. What investigation is most likely to confirm the diagnosis?

A- Blood cultures

B- Sigmoidoscopy with biopsy

C- Abdominal x-ray

**D- Acid-fast staining of stool sample**

E- Cryptosporidium PCR of stool sample

Q104. A 62-year-old patient with type 2 diabetes mellitus presents with a 'rash' on his left shin. This has grown in size over the past two days and is now a painful, hot, erythematous area on his anterior left shin spreading around to the back of the leg. He is systemically well and a decision is made to give oral treatment. He has a past history of penicillin allergy. What is the most appropriate antibiotic to give?

A- Ciprofloxacin

B- Cefaclor

C- Flucloxacillin

D- Vancomycin

**E- Clarithromycin**

Q105. A 72-year-old woman is reviewed following a course of oral flucloxacillin for right lower limb cellulitis. The local protocol suggest oral clindamycin should be used next-line. Which one of the following side-effects is it most important to warn her about?

A- Heartburn or indigestion

B- Jaundice

C- Sore throat, bruising or lethargy

D- Avoid any food or drink containing alcohol

**E- Diarrhoea**

Q106. A 37-year-old immigrant from Bolivia is admitted to the Emergency Department following a collapse. He is known to have a history of Chagas' disease. Which one of the following complications of Chagas' disease accounts for the majority of mortality in affected patients?

A- Large bowel perforation secondary to megacolon

**B- Myocarditis**

C- Perinephric abscess

D- Meningoencephalitis

E- Pulmonary haemorrhage

Q107. A 31-year-old woman presents as she has noted an offensive, fishy vaginal discharge. She describes a grey, watery discharge. What is the most likely diagnosis?

A- Trichomonas vaginalis

B- Candida

C- Chlamydia

**D- Bacterial vaginosis**

E- Physiological discharge

Q108. Which one of the following statements regarding scabies is false?

A- All members of the household should be treated

B- Typically affects the fingers, interdigital webs and flexor aspects of the wrist in adults

C- Scabies causes a delayed type IV hypersensitivity reaction

**D- Patients who complain of pruritus 4 weeks following treatment should be retreated**

E- Malathion is suitable for the eradication of scabies

Q109. A 44-year-old farmer presents to the Emergency Department due to a high temperature and confusion. On examination his pulse is 124 bpm, blood pressure 84/56 mmHg and temperature 39.8ºC. He has a generalised erythematous rash which is starting to desquamate on his palms and is also noted to have a paronychial infection of a fingernail on the left hand. What is the most likely diagnosis?

A- Paraquat overdose

B- Leptospirosis

**C- Staphylococcal toxic shock syndrome**

D- Disseminated herpes simplex infection

E- Organophosphate poisoning

Q110. A 45-year-old man presents to the Emergency Department due to severe pain in the perineal area over the past 6 hours. On examination the skin is cellulitic, extremely tender and haemorrhagic bullae are seen. What is the most appropriate management?

**A- Surgical debridement**

B- IV cefuroxime and metronidazole

C- IV flucloxacillin and benzylpenicillin

D- Plasma exchange

E- Urgent microscopy of wound swab

Q111. Which one of the following features is least likely to occur in a patient with visceral leishmaniasis?

A- Massive splenomegaly

B- Diarrhoea

C- Pyrexia

D- Pancytopaenia

E- Grey skin

Q112. You attend a meeting with the hospital management. There is currently an increased incidence of MRSA septicaemia in the hospital and a strategy is being drawn up to tackle this. What is the most effective single step to reduce the incidence of MRSA?

A- The use of personal protective equipment for staff including gloves and aprons

**B- Hand hygiene**

C- Screening patients for MRSA on admission

D- Cohort nursing

E- Limiting the number of visitors

Q113. A 34-year-old man from Zimbabwe is admitted with abdominal pain to the Emergency Department. An abdominal x-ray reveals urinary bladder calcification. What is the most likely cause?

A- Schistosoma mansoni

B- Sarcoidosis

C- Leishmaniasis

D- Tuberculosis

**E- Schistosoma haematobium**

Q114. A newly qualified staff nurse at the local hospital undergoes vaccination against hepatitis B. The following results are obtained three months after completion of the primary course: Anti-HBs 10- 100 mIU/ml What is the most appropriate course of action?

A- Repeat course (i.E- 3 doses) of hepatitis B vaccine

B- Repeat anti-HBs level in three months time

C- Give a course of hepatitis B immune globulin (HBIG) + one further dose of hepatitis B vaccine

**D- Give one further dose of hepatitis B vaccine**

E- Do a HIV test

Q115. You are reviewing test results. The midstream specimen of urine (MSU) from a 24-year-old woman who is 11 weeks pregnant shows a urinary tract infection. On discussing the result with the patient she does describe some dysuria and 'smelly urine'. What is the most appropriate management?

A- Ciprofloxacin for 7 days

**B- Amoxicillin for 7 days**

C- Repeat MSU

D- Trimethoprim for 3 days

E- No treatment

Q116. A 26-year-old man returns to the genito-urinary medicine clinic. He is a known intravenous drug user. Five days ago he was seen with a urethral discharge. A swab taken in the clinic showed a Gram-negative diplococcus and treatment with IM ceftriaxone was given. Unfortunately his symptoms have not resolved. What is the most likely explanation?

A- Gonorrhoea-resistant to ceftriaxone

B- Co-existent Candida infection

C- HIV infection

D- Co-existent syphilis infection

**E- Co-existent Chlamydia infection**

Q117. PassMedicine 2013- Infectious Diseases A pregnant 34-year-old female presents with uncomplicated Falciparum malaria following a trip to Kenya. Which one of the following is the most suitable treatment? Management of Chlamydia Cochrane

A- Chloroquine

B- Artemether-lumefantrine

C- Doxycycline

**D- Quinine**

E- Atovaquone-proguanil

Q118. Which one of the following features is not associated with Lyme disease?

A- Jarisch-Herxheimer reaction

B- Meningitis

C- Prolonged PR interval on ECG

**D- Erythema marginatum**

E- Arthralgia

Q119. A 31-year-old woman is admitted to hospital. As part of a liver screen the following results are obtained: Anti-HBs Positive Anti-HBc Positive HBs antigen Negative Anti-HBs = Hepatitis B Surface Antibody; Anti-HBc = Hepatitis B Core Antibody; HBs antigen = Hepatitis B Surface Antigen What is the patient's hepatitis B status?

A- Previous immunisation to hepatitis B

B- Chronic hepatitis B- highly infectious

**C- Previous hepatitis B infection, not a carrier**

D- Chronic hepatitis B- not infectious

E- Acute hepatitis B infection

Q120. Which of the following is true regarding the Salmonella species?

A- Rose spots appear in all patients with typhoid

B- They are normally present in the gut as commensals

C- They are anaerobic organisms

**D- A relative bradycardia is often seen in typhoid fever**

E- Salmonella typhi can be categorised into type A, B and C

Q121. Which one of the following is true regarding Escherichia coli infection?

A- It is a Gram negative coccus

**B- E coli is an important cause of neonatal meningitis**

C- The O157:H7 strain is typically spread via shellfish

D- Severe infection should be treated with teicoplanin

E- It is an aerobic bacteria

Q122. A 34-year-old man presents with a widespread maculopapular rash and mouth ulcers. Two months ago he presented to the local GUM clinic after developing a painless penile ulcer. At the time he was noted to have inguinal lymphadenopathy. Which one of the following organisms is most likely to be responsible?

A- Lymphogranuloma venereum

B- Herpes simplex virus type 2

C- Mycoplasma genitalium

D- Haemophilus ducreyi

**E- Treponema pallidum**

Q123. A 34-year-old HIV positive man is being treated for Pneumocystis carinii pneumonia with cotrimoxazole. Arterial blood gases show a pO2 of 8.2 kPa. What drug should be added to treatment?

A- Meropenem

B- Chloramphenicol

**C- Steroids**

D- Nebulised fluconazole

E- Magnesium sulphate

Q124. Which one of the following best describes the action of aciclovir?

A- Inhibits uncoating of virus in the cell

**B- Inhibits DNA polymerase**

C- Interferes with the capping of viral mRNA

D- Inhibits RNA polymerase

E- Protease inhibitor

Q125. What is the mechanism of action of the antiviral agent ribavirin?

A- Inhibits DNA polymerase

B- Inhibits uncoating of virus in the cell

C- Protease inhibitor

D- Nucleoside analogue reverse transcriptase inhibitor

**E- Interferes with the capping of viral mRNA**

Q126. Which of the following anti-retroviral drugs is most characteristically associated with nephrolithiasis?

A- Zidovudine

B- Didanosine

**C- Indinavir**

D- Ritonavir

E- Nevirapine

Q127. Each of the following organisms commonly cause respiratory tract infections in patients with cystic fibrosis, except:

A- Aspergillus

B- Pseudomonas aeruginosa

C- Burkholderia cepacia

D- Staphylococcal aureus

**E- Strongyloides stercoralis**

Q128. A 30-year-old man comes for review. He returned from a holiday in Egypt yesterday. For the past two days he has been passing frequent bloody diarrhoea associated with crampy abdominal pain. Abdominal examination demonstrates diffuse lower abdominal tenderness but there is no guarding or rigidity. His temperature is 37.5ºC. What is the most likely causative organism?

A- Giardiasis

B- Enterotoxigenic Escherichia coli

C- Staphylococcus aureus

D- Salmonella

**E- Shigella**

Q129. A 45-year-old man is diagnosed as having primary syphilis. Six hours after receiving his first injection of benzylpenicillin he complains of feeling generally unwell. On examination he appears flushed. His blood pressure is 94/62 mmHg, pulse 96/min and temperature 37.9º. These symptoms settle after around four hours. Which one of the following is most likely to explain this finding.

A- Arunan-Leadbetter reaction

**B- Jarisch-Herxheimer reaction**

C- Concurrent infectious mononucleosis infection

D- Allergic reaction to benzylpenicillin

E- Undiagnosed tertiary syphilis

Q130. Which one of the following is least likely to cause a pyrexia of unknown origin?

A- Hypernephroma

**B- Colorectal cancer**

C- Lymphoma

D- Atrial myxoma

E- Tuberculosis

Q131. Which one of the following is the most common cause of visceral larva migrans?

A- Cryptococcus neoformans

B- Strongyloides stercoralis

C- Visceral leishmaniasis

**D- Toxocara canis**

E- Giardiasis

Q132. A 7-year-old male presents with generalised lymphadenopathy. Which one of the following is least likely to result in this presentation?

**A- Kawasaki disease**

B- Cytomegalovirus

C- Acute lymphoblastic leukaemia

D- Phenytoin therapy

E- Infectious mononucleosis

Q133. A 23-year-old male presents with a purulent urethral discharge. A sample of the discharge is shown to be a Gram negative diplococcus. What is the most appropriate antimicrobial therapy?

A- Ciprofloxacin 500mg BD PO for 7 days

B- Penicillin V 500mg QDS PO for 7 days

C- Doxycycline 100mg BD PO for 7 days

D- Ciprofloxacin 500mg PO (single dose)

**E- Cefixime 400mg PO (single dose)**

Q134. A 43-year-old man from Sierra Leone presents with a flu-like illness. On examination he has very large posterior cervical lymph nodes. A diagnosis of African trypanosomiasis is confirmed on blood smear. What is the most appropriate treatment?

A- Atovaquone-proguanil

B- Sodium stibogluconate

C- Benznidazole

D- Metronidazole

**E- Pentamidine**

Q135. A 24-year-old woman who is 18 weeks pregnant presents to the Emergency Department. Earlier on in the morning she came into contact with a child who has chickenpox. She is unsure if she had the condition herself as a child. What is the most appropriate action?

A- Advise her to present within 24 hours of the rash developing for consideration of IV aciclovir

B- Reassure her that there is no risk of fetal complications at this point in pregnancy

C- Give varicella immunoglobulin

**D- Check varicella antibodies**

E- Prescribe oral aciclovir

Q136. A 39-year-old man with HIV is admitted due to shortness of breath. Chest x-ray shows bilateral pulmonary infiltrates and Pneumocystis carinii pneumonia is suspected. What type of staining should be applied to the bronchoalveolar lavage to demonstrate the organism?

A- Rubeanic acid

**B- Silver stain**

C- Pearl's stain

D- Rose Bengal

E- Congo red

Q137. A 77-year-old female presents with a non-healing ulcer on her right foot. Blood cultures grow MRSA. Which antibiotic would you consider in addition to vancomycin?

A- Flucloxacillin

B- Ceftazidime

C- Ciprofloxacin

D- Metronidazole

**E- Rifampicin**

Q138. Which one of the following vaccines uses an extract of the organism or virus?

A- Rabies

B- Yellow fever

C- Oral polio

D- Measles

E- Meningococcus

Q139. A woman who is 14 weeks pregnant presents as she came into contact with a child who has chickenpox around 4 days ago. She is unsure if she had the condition herself as a child. Blood tests show the following: Varicella IgM Negative Varicella IgG Negative What is the most appropriate management?

**A- Varicella zoster immunoglobulin**

B- No action required

C- IV aciclovir

D- Varicella zoster vaccination

E- Varicella zoster vaccination + varicella zoster immunoglobulin

Q140. Which of the following infections usually has the longest incubation period?

A- Meningococcus

B- Scarlet fever

**C- Typhoid**

D- Diphtheria

E- Influenza

Q141. A 14-year-old boy presents with pyrexia, myalgia and lethargy. Clinical examination reveals a temperature of 38.8ºC. He is haemodynamically stable and his chest is clear. Given the current pandemic a presumptive diagnosis of H1N1 influenza is made and oseltamivir is prescribed. What is the most likely side-effect he will experience?

A- Dry mouth

B- Headache

C- Bronchospasm

**D- Nausea**

E- Rash

Q142. Which one of the following antibiotics is most likely to cause pseudomembranous colitis?

**A- Cefuroxime**

B- Cefalexin

C- Ciprofloxacin

D- Co-amoxiclav

E- Piperacillin-tazobactam

Q143. A 53-year-old woman is diagnosed with left leg cellulitis. A swab is taken and oral flucloxacillin is started. The following result is obtained: Skin swab: Group A Streptococcus How should the antibiotic therapy be changed?

A- No change

B- Add topical fusidic acid

C- Add clindamycin

**D- Switch to phenoxymethylpenicillin**

E- Add erythromycin

Q144. A 55-year-old business man presents with a 15 day history of watery, nonbloody diarrhoea associated with anorexia and abdominal bloating. His symptoms started 4 days after returning from a trip to Pakistan. On examination he is apyrexial with dry mucous membranes but normal skin turgor. Given the likely organism, what is the most appropriate treatment?

A- Hydroxychloroquine

B- Aciclovir

C- Benzylpenicillin

D- Ciprofloxacin

**E- Metronidazole**

Q145. A 30-year-old man presents for review two weeks after returning from a camping holiday in the New Forest. For the past few days he has felt general unwell with lethargy and arthralgia. On examination he has a rash consistent with erythema chronicum migrans. What is the most appropriate test to perform given the likely diagnosis?

**A- ELISA test for antibodies to Borrelia burgdorferi**

B- Polymerase chain reaction for Borrelia DNA

C- Blood cultures

D- Blood film

E- Bone marrow biopsy

Q146. A 19-year-old man presents with dysuria associated with a watery discharge from his urethral meatus. A urethral swab shows non-specific urethritis and urine is sent for Chlamydia/gonococcus. What is the most appropriate antibiotic to use?

A- Erythromycin

B- Ciprofloxacin

C- Metronidazole

D- Cefixime

**E- Azithromycin**

Q147. What is the mechanism of action of macrolides?

A- Causes misreading of mRNA

B- Interferes with cell wall formation

C- Inhibits DNA synthesis

D- Inhibits RNA synthesis

**E- Inhibits protein synthesis**

Q148. A 34-year-old abattoir worker presents to the Emergency Department following the development of black skin lesions. On examination a black eschar is noted with extensive surrounding oedema. A diagnosis of cutaneous anthrax is suspected. What is the most appropriate initial antibiotic therapy until sensitivities are known?

**A- Ciprofloxacin**

B- Metronidazole

C- Erythromycin

D- Benzylpenicillin

E- Gentamicin

Q149. A 23-year-old man has a Mantoux test prior to receiving the BCG vaccine. He develops a 12 mm indurated lesion on his forearm. Which one of the following cytokines is most involved in this response?

A- Interleukin-8

**B- Interferon-γ**

C- Interferon-β

D- Interferon-α

E- Interleukin-10

Q150. Which one of the following is a Gram positive coccus?

**A- Enterococcus faecalis**

B- Moraxella catarrhalis

C- Haemophilus influenzae

D- Neisseria meningitidis

E- Bacillus anthracis

Q151. A 25-year-old man with a history of epilepsy presents for advice regarding malarial prophylaxis. Next month he plans to travel to Vietnam. His trip will take him to some of the costal tourist destinations but he also plans to travel inland. What is the most appropriate medication to prevent him developing malaria?

A- Quinine

**B- Atovaquone + proguanil**

C- Mefloquine

D- Primaquine

E- Pyrimethamine + sulfadoxine

Q152. Which one of the following statements regarding toxoplasmosis is true?

A- It is a type of flagellate

B- Congenital toxoplasmosis results in optic nerve atrophy

C- Ceftriaxone should be used initially in patients with HIV-associated toxoplasmosis

D- The cat is the only known animal reservoir

**E- infection is usually self-limiting**

Q153. A phlebotomist gives herself a needlestick injury whilst taking blood from a patient who is known to be hepatitis B positive. The phlebotomist has just started her job and is in the process of being immunised for hepatitis B but has only had one dose to date. What is the most appropriate action to minimise her risk of contracting hepatitis B from the needle?

A- No action needed, complete hepatitis B vaccination course as normal

B- Give oral ribavirin for 4 weeks

**C- Give an accelerated course of the hepatitis B vaccine + hepatitis B immune globulin**

D- Give hepatitis B immune globulin + oral ribavirin for 4 weeks

E- Give hepatitis B immune globulin

Q154. What is the first line antibiotic in the treatment of Shigella dysentery?

A- Flucloxacillin

B- Vancomycin

**C- Ciprofloxacin**

D- Metronidazole

E- Ampicillin

Q155. Which one of the following conditions is not associated with prior Epstein-Barr virus infection?

A- Hodgkin's lymphoma

**B- Adult T-cell leukaemia**

C- Burkitt's lymphoma

D- Nasopharyngeal carcinoma

E- Hairy leukoplakia

Q156. A 38-year-old homeless man is diagnosed as having pulmonary tuberculosis. It is decided that directly observed therapy should be used. How often will he need to take anti-tuberculosis medications?

A- Once a week

B- Twice a week

**C- Three times a week**

D- Five times a week

E- Once every day

Q157. A 54-year-old female is admitted with a severe pneumonia following a holiday in Turkey. Bloods reveal both hyponatraemia and deranged liver function tests. A chest x-ray shows patchy alveolar infiltrates with consolidation in the right lower lobe. Which one of the following investigations is most likely to confirm the probable diagnosis?

A- Sputum culture

**B- Urinary antigen**

C- Blood cultures

D- Bone marrow aspirate

E- Lumbar puncture

Q158. A 44-year-old man who is known to have HIV is admitted to the Emergency Department following a seizure. He has been taking antiretroviral therapy for the past two years. A CT scan (without contrast) shows a solitary lesion in the basal ganglia. What is the most effective method to help differentiate between lymphoma and toxoplasmosis?

A- MR spectroscopy

B- CT with contrast

**C- Thallium SPECT**

D- Peripheral blood film

E- Lumbar puncture

Q159. A 23-year-old student returns from India and develops a febrile illness. Following investigation he is diagnosed as having Plasmodium vivax malaria. What is the most appropriate treatment?

**A- Chloroquine**

B- Atovaquone-proguanil

C- Quinine

D- Doxycycline

E- Artemether-lumefantrine

Q160. A nurse undergoes primary immunisation against hepatitis B. Levels of which one of the following should be checked four months later to ensure an adequate response to immunisation?

**A- Anti-HBs**

B- Anti-HBc

C- Hepatitis B viral load

D- HbeAg

E- HBsAg

Q161. A 45-year-old female presents to the Emergency Department three days after returning from Thailand complaining of severe muscle ache, fever and headache. On examination she has a widespread maculopapular rash. Results show: Malaria film: negative Hb 16.2 \*109 g/dl Plt 96 \*109 /l WBC 2.4 \*109 /l ALT 146 iu/l What is the most likely diagnosis?

A- Hepatitis A

B- Japanese encephalitis

C- Rheumatic fever

D- Malaria

**E- Dengue fever**

Q162. A 65-year-old man with a history of type 2 diabetes mellitus and peripheral arterial disease is investigated for fatigue and pyrexia of unknown origin. He recently had an amputation of a toe on his left foot. A diagnosis of osteomyelitis is suspected in the left foot. What is the most appropriate investigation?

**A- MRI**

B- Plain x-ray

C- Positron emission tomographic (PET) scan

D- Bone biopsy

E- CT scan

Q163. What is the mechanism of action of the antiviral agent amantadine?

A- Inhibits DNA polymerase

B- Protease inhibitor

C- Nucleoside analogue reverse transcriptase inhibitor

**D- Inhibits uncoating of virus in the cell**

E- Interferes with the capping of viral mRNA

Q164. A 28-year-old man who has recently emigrated from Nigeria presents with a penile ulcer. It initially started as a papule which later progressed to become a painful ulcer with an undermined ragged edge. Examination of the testes was unremarkable but tender inguinal lymphadenopathy was noted. What is the most likely diagnosis?

**A- Chancroid**

B- Lymphogranuloma venereum

C- Syphilis

D- Herpes simplex infection

E- Granuloma inguinale

Q165. A 24-year-old man presents with a three day history of painful ulcers on the shaft of his penis and dysuria. He has had no similar previous episodes. A clinical diagnosis of primary genital herpes is made. What is the most appropriate management?

A- Topical famciclovir

B- No treatment is indicated

C- Topical podophyllotoxin

D- Topical valaciclovir

**E- Oral aciclovir**

Q166. Which one of the following tests is most likely to remain positive in a patient with syphilis despite treatment?

A- Wassermann reaction

B- Rapid plasma reagin (RPR)

C- Venereal disease research laboratory (VDRL)

D- Blood culture

**E- Treponema pallidum haemagglutination test (TPHA)**

Q167. Which of the following antibiotics is predominately bactericidal?

A- Trimethoprim

B- Erythromycin

**C- Ciprofloxacin**

D- Chloramphenicol

E- Minocycline

Q168. A 28-year-old man is admitted to the Emergency Department with dyspnoea and fever. Two days ago he developed an itchy, vesicular rash after coming into contact with a child who had chickenpox. On examination his temperature is 38.6ºC, respiratory rate 24 / min, pulse 120 / min and blood pressure 135/68 mmHg. Oxygen saturations are 95% on room air. Examination of chest reveals only occasional fine crackles bilaterally. What is the most important intervention?

A- Elective intubation within the next 2 hours

B- Prednisolone

C- Varicella zoster immunoglobulin

**D- IV aciclovir**

E- Paracetamol

## **Chapter 5 Clinical Pharmacology**

Q1. A patient with glucose-6-phosphate dehydrogenase (G6PD) deficiency presents for advice about malaria prophylaxis. He is about to go on a 'gap year' during which he will be travelling abroad for 12 months. Which one of the following medications is it most important that he avoids?

A- Artemether with lumefantrine

B- Mefloquine

C- Proguanil

D- Doxycyline

**E- Primaquine**

Q2. A 57-year-old man with a history of ischaemic heart disease is keen to try sildenafil for erectile dysfunction. Which one of the following medications may contraindicate its use?

A- Nebivolol

B- Losartan

**C- Nicorandil**

D- Nifedipine

E- Ramipril

Q3. Which one of the following drugs used in the management of diabetes mellitus is most likely to cause cholestasis?

A- Metformin

**B- Gliclazide**

C- Acarbose

D- Rosiglitazone

E- Insulin

Q4. An 80-year-old woman is started on oral alendronate following a fractured neck of femur. How would you explain how to take the tablet? afterwards following

A- Take it on a full stomach to minimise gastric irritation and avoid lying down for 30 minutes

B- Dissolve tablet in water and take just before breakfast + sit-upright for 30 minutes following

C- Take during main evening meal + sit-upright for 2 hours following

**D- Take at least 30 minutes before breakfast with plenty of water + sit-upright for 30 minutes**

E- Take at least 30 minutes after a main meal + sit-upright for 30 minutes following

Q5. The INR of a patient who has recently started treatment for tuberculosis drops from 2.6 to 1.3. Which one of the following medications is most likely to be responsible?

**A- Rifampicin**

B- Streptomycin

C- Ethambutol

D- Isoniazid

E- Pyrazinamide

Q6. Which one of the following statements regarding quinupristin is incorrect?

A- Thrombophlebitis is a recognised side-effect

B- Has broad Gram positive cover

C- Inhibits bacterial protein synthesis

D- Acts as a P450 inhibitor

**E- Particularly useful against Enterococcus faecalis**

Q7. A patient with testicular cancer is started on cisplatin therapy. Which of the following side-effects is most characteristically associated with cisplatin?

A- Liver cirrhosis

B- Alopecia

**C- Peripheral neuropathy**

D- Haemorrhagic cystitis

E- Cardiomyopathy

Q8. What is the most appropriate time to take blood samples for therapeutic monitoring of ciclosporin levels?

A- 6 hours after last dose

**B- Immediately before next dose**

C- At any time

D- 12 hours after last dose

E- 4 hours after last dose

Q9. In the Vaughan Williams classification of antiarrhythmics lidocaine is an example of a:

A- Class Ia agent

**B- Class Ib agent**

C- Class Ic agent

D- Class II agent

E- Class IV agent

Q10. In line with NICE guidelines on the secondary prevention of osteoporotic fractures in postmenopausal women, which one of the following patients should not automatically be started on treatment? 3.1 SD DEXA scan shows a T-score of-2.7 SD

A- A 81-year-old woman who has had a fractured neck of femur

B- A 64-year-old women with a wedge fractures of her thoracic spinE- DEXA scan shows a T-score of-

C- A 55-year-old women who had a Colles fracture of the wrist. DEXA scan shows a T-score of-3.3 SD

D- A 64-year-old women with a BMI of 18 kg/m2. She has a wedge fractures of her thoracic spinE-

**E- A 71-year-old women who had a Colles fracture of the wrist. DEXA scan shows a T-score of-2.1 SD**

Q11. A patient is started on cyclophosphamide for vasculitis associated with Wegener's granulomatosis. Which of the following is most characteristically associated with cyclophosphamide?

**A- Haemorrhagic cystitis**

B- Cardiomyopathy

C- Ototoxicity

D- Alopecia

E- Weight gain

Q12. A 71-year-old man who has atrial fibrillation and heart failure is started on digoxin. What is the mechanism of action of digoxin?

A- Blocks Ca2+ release from the sarcoplasmic reticulum

B- Blocks Na+ entry into myocytes

C- Agonist of the myocyte sodium-calcium exchanger

D- K+ channel blocker

**E- Inhibits the Na+/K+ ATPase pump**

Q13. You receive the blood results of a 76-year-old man who takes warfarin following a pulmonary embolism two months ago. He recently completed a course of antibiotics. INR 8.4 On reviewing the patient he is well with no bleeding or bruising. What is the most appropriate action? restarted

A- Stop warfarin + restart when INR < 5.0 + give low-molecular weight heparin until warfarin

**B- Oral vitamin K 5mg + stop warfarin + repeat INR after 24 hours**

C- Stop warfarin + restart when INR < 3.0

D- Stop warfarin + restart when INR < 5.0

E- Fresh frozen plasma + restart warfarin when INR < 5.0

Q14. A 72-year-old man is reviewed in the diabetes clinic. He has a history of heart failure and type 2 diabetes mellitus. His current medications include furosemide 40mg od, ramipril 10mg od and bisoprolol 5mg od. Clinical examination is unremarkable with no evidence of peripheral oedema, a clear chest and blood pressure of 130/76 mmHg. Recent renal and liver function tests are normal. Which one of the following medications is contraindicated?

A- Sitagliptin

**B- Pioglitazone**

C- Gliclazide

D- Exenatide

E- Metformin

Q15. A 45-year-old man presents to the Emergency Department stating he has drunk a bottle of antifreeze. Which one of the following features are least associated with this kind of poisoning?

A- Metabolic acidosis with high anion gap

B- Acute renal failure

C- Hypertension

D- Confusion

**E- Loss of vision**

Q16. Which one of the following is not a recognised indication for the use of octreotide?

A- Acute variceal haemorrhage

B- Acromegaly

C- VIPoma

D- Carcinoid syndrome

**E- Hepatic encephalopathy**

Q17. Which one of the following adverse effects is most likely to be seen in patients taking ciclosporin?

**A- Hypertension**

B- Hypokalaemia

C- Alopecia

D- Dehydration

E- Atrophy of the gums

Q18. Which one of the following enzymes is involved in phase I drug metabolism?

A- UDP-glucuronosyl transferases

B- Pyruvate carboxylase

C- Succinic dehydrogenase

D- N-acetyl transferases

**E- Alcohol dehydrogenase**

Q19. Which one of the following is least recognised as an adverse effect of taking bendroflumethiazide?

A- Photosensitivity rash

B- Agranulocytosis

C- Hypokalaemia

D- Pancreatitis

**E- Hirsutism**

Q20. Which one of the following drugs cannot be cleared by haemodialysis?

A- Aspirin

**B- Tricyclics**

C- Lithium

D- Barbiturates

E- Aminophylline

Q21. A 62-year-old woman who is known to have metastatic breast cancer presents with increasing shortness of breath. She is currently receiving a chemotherapy regime. On examination she has a third heart sound and the apex beat is displaced to the 6th intercostal space, anterior axillary line. Which one of the following chemotherapeutic agents is most likely to be responsible?

A- Paclitaxel

B- Docetaxel

C- Bleomycin

D- Dactinomycin

**E- Doxorubicin**

Q22. Which one of the following statements regarding statin-induced myopathy is incorrect?

A- Rhabdomyolysis may cause renal failure

B- Patients with an elevated creatine kinase often have no symptoms

C- Female sex is a risk factor

D- Creatine kinase does not need to be routinely checked prior to commencing a statin

**E- Pravastatin is more likely to cause myopathy than simvastatin**

Q23. A 67-year-old man with a history of atrial fibrillation and ischaemic heart disease presents with symptoms consistent with a chest infection. His current medication includes amiodarone, warfarin and simvastatin. Which one of the following antibiotics is it most important to avoid if possible?

A- Trimethoprim

B- Co-amoxiclav

C- Cefaclor

D- Levofloxacin

**E- Erythromycin**

Q24. A 46-year-old man with a history of hyperlipidaemia is reviewed in clinic. He is currently taking simvastatin 10mg on but his cholesterol level remains high. Previous attempts to increase the dose of simvastatin have resulted in myalgia. Given the history of myalgia, which lipid-regulating drug should be avoided?

A- Nicotinic acid

**B- Bezafibrate**

C- Colestyramine

D- Omega-3 fatty acid

E- Ezetimibe

Q25. Which one of the following ECG changes is most consistent with a tricyclic overdose?

**A- QRS widening**

B- Bradycardia

C- Shortening of QT interval

D- First degree heart block

E- ST elevation

Q26. What is the minimum steroid intake a patient should be taking before they are offered osteoporosis prophylaxis?

A- Equivalent of prednisolone 10 mg or more each day for 6 months

B- Equivalent of prednisolone 7.5 mg or more each day for 6 weeks

C- Equivalent of prednisolone 5 mg or more each day for 6 weeks

**D- Equivalent of prednisolone 7.5 mg or more each day for 3 months**

E- Equivalent of prednisolone 10 mg or more each day for 6 weeks

Q27. A 37-year-old who is 38 weeks pregnancy is an inpatient on the obstetric ward for the management of pre-eclampsia. Blood pressure is 172/114 mmHg and urine dipstick shows proteinuria +++. A decision has been made to start magnesium sulphate therapy as she is deemed at risk of eclampsia. Of the following options, which are the most important parameters to monitor whilst the patient is receiving magnesium?

A- Blood sugar + pulse rate

**B- Reflexes + respiratory rate**

C- Blood sugar + respiratory rate

D- Reflexes + pulse rate

E- Glasgow coma scale + pulse rate

Q28. A 39-year-old woman who has recently been diagnosed with hypertension comes for review. She is sexually active but does not currently use any form of contraception other than barrier methods. Which one of the following medications should be avoided?

A- Hydralazine

B- Nifedipine

C- Methyldopa

D- Labetalol

**E- Lisinopril**

Q29. Which one of the following may be associated with an increased risk of venous thromboembolism?

A- Fluoxetine

B- Selegiline

C- Diazepam

D- Amitriptyline

**E- Olanzapine**

Q30. A 54-year-old female is being investigated for a macrocytic anaemia. Bloods test reveal a low vitamin B12 level. Which one of the following medications may be contributing to this?

A- Bendroflumethiazide

B- Digoxin

C- Amiodarone

D- Sodium valproate

**E- Metformin**

Q31. A 71-year-old woman is presecribed ondansetron to help treat nausea which has not responded to either metoclopramide or cyclizine. What is the mechanism of action of ondansetron?

**A- 5-HT3 antagonist**

B- 5-HT2 antagonist

C- Dopamine antagonist

D- NK1 receptor antagonist

E- Antihistamine

Q32. A 20-year-old student drinks around 500 ml of vodka at a party. The next morning he feels thirsty and finds he is passing more urine than normal. Which one of the following best explains why people who drink excessive amounts alcohol develop polyuria?

**A- Ethanol inhibits ADH secretion**

B- Ethanol induces vasoconstriction of the renal arteries

C- Ethanol increases aquaporin proteins in the proximal convoluted tubule

D- Osmotic diuresis induced by ethanol

E- Supratentorial reflex to cleanse the body of toxins

Q33. A 45-year-old man with a history of depression and gastro-oesophageal reflux disease presents due to a milky discharge from his nipples. The following blood results are obtained: Prolactin 700 mu/l Which one of his medications is most likely to be responsible?

A- Omeprazole

B- Fluoxetine

**C- Metoclopramide**

D- Cimetidine

E- Amitriptyline

Q34. A patient is started on finasteride for the treatment of benign prostatic hyperplasia. How long should the patient be told that treatment may take to be effective?

A- Within 8 hours of taking the tablet

B- Within 3 days

C- Up to 7 days

D- Up to 4 weeks

**E- Up to 6 months**

Q35. A 72-year-old man is prescribed a dipyridamole in addition to aspirin following an ischaemic stroke. What is the mechanism of action of dipyridamole?

**A- Phosphodiesterase inhibitor**

B- Glycoprotein IIb/IIIa inhibitor

C- Inhibits ADP binding to its platelet receptor

D- Agonist of thromboxane synthase

E- Irreversibly acetylating Cyclooxygenase

Q36. A 26-year-old female is commenced on carbamazepine for complex partial seizures. She has no previous medical history of note and consumes a moderate amount of alcohol. Three months later she is admitted due to series of seizures and carbamazepine levels are noted to be subtherapeutic. A pill-count reveals the patient is fully compliant. What is the most likely explanation?

A- Auto-inhibition of liver enzymes

B- Prescription of omeprazole

C- Prescription of fluoxetine

**D- Auto-induction of liver enzymes**

E- Alcohol binge

Q37. A 23-year-old female is commenced on varenicline to help her stop smoking. Which one of the following adverse effects is most likely to occur?

A- Vivid dreams

**B- Nausea**

C- Constipation

D- Insomnia

E- Drug-induced lupus

Q38. Which one of the following is an established indication for the use of Botulinum toxin?

A- Strabismus

B- Hirschsprung's disease

**C- Blepharospasm**

D- Bell's palsy

E- Upper limb rigidity in Parkinson's disease

Q39. Which one of the following drugs is most likely to cause impaired glucose tolerance?

A- Bezafibrate

B- Simvastatin

**C- Nicotinic acid**

D- Cholestyramine

E- Gemfibrozil

Q40. A 51-year-old homeless man is brought to the Emergency Department by an ambulance. He was found collapsed in the street. His friend reports that he has drink two litres of cheap spirits made with methanol. On arrival his GCS is 5, blood pressure 120 / 70 mmHg and pulse 90 / min. His airway is secured and oxygen given. What is the most appropriate treatment?

A- Ethanol

B- Activated charcoal

C- Thiamine

D- Fomepizole

**E- Haemodialysis**

Q41. A 67-year-old female is prescribed simvastatin for hyperlipidaemia. Which one of the following is most likely to interact with her medication?

A- Orange juice

B- Apple juice

**C- Grapefruit juice**

D- Cranberry juice

E- Carrot juice

Q42. A 55-year-old female is admitted following an overdose of amitriptyline. On examination she has dilated pupils and is tachycardic at 160 bpm, with a blood pressure of 96/54 mmHg. ECG reveals a broad complex tachycardia. What is the most appropriate management?

A- IV amiodarone

**B- IV bicarbonate**

C- IV magnesium

D- DC cardioversion

E- Glucagon

Q43. Which of the following drugs is least likely to be affected by a patients acetylator status?

A- Hydralazine

B- Isoniazid

**C- Rifampicin**

D- Procainamide

E- Sulphonamides

Q44. A 62-year-old man is commenced on finasteride for symptoms of bladder outflow obstruction. Which one of the following adverse effects is most associated with this treatment?

A- Alopecia

**B- Gynaecomastia**

C- Prostate cancer

D- Increased levels of serum prostate specific antigen

E- Postural hypotension

Q45. A 35-year-old man with a known history of peanut allergy is admitted to the Emergency Department with a swollen face. On examination blood pressure is 85/60 mmHg, pulse 120 bpm and there is a bilateral expiratory wheeze. What is the most appropriate form of adrenaline to give?

A- 10ml 1:10,000 IV

**B- 0.5ml 1:1,000 IM**

C- 0.5ml 1:10,000 IM

D- 5ml 1:1,000 IM

E- Nebulised adrenaline

Q46. A 19-year-old female is brought to the Emergency Department by her friends following a night out. Her friends state she has taken an unknown drug whilst out clubbing. Which one of the following features would most point towards the use of ecstasy?

**A- Temperature of 39.5ºC**

B- Respiratory depression

C- Hypernatraemia

D- Miosis

E- Urinary incontinence

Q47. A 72-year-old man who is having trouble sleeping is prescribed temazepam. What is the mechanism of action of temazepam?

A- Inhibits the effect of acetylcholine

**B- Enhances the effect of gamma-aminobutyric acid**

C- Inhibits the effect gamma-aminobutyric acid

D- Inhibits the effect of glutamate

E- Inhibits the effect of noradrenaline

Q48. A patient presents to the Emergency Department following the development of an urticarial skin rash following the introduction of a new drug. Which one of the following is most likely to be responsible?

A- Omeprazole

B- Sodium valproate

**C- Aspirin**

D- Paracetamol

E- Simvastatin

Q49. A 59-year-old man with a history of type 2 diabetes mellitus and benign prostatic hypertrophy develops urinary retention associated with acute renal failure. Which one of the following drugs should be discontinued?

A- Gliclazide

B- Paroxetine

C- Atenolol

**D- Metformin**

E- Finasteride

Q50. Which one of the following is least associated with cocaine toxicity?

**A- Metabolic alkalosis**

B- Hyperthermia

C- Psychosis

D- Rhabdomyolysis

E- Seizures

Q51. A 54-year-old man with a history of ischaemic heart disease is currently taking atorvastatin 40mg at night. A repeat lipid profile is ordered: Total cholesterol 3.9 mmol/l HDL 0.7 mmol/l LDL 2.6 mmol/l Triglycerides 1.2 mmol/l What would be the most effective way of increasing HDL levels?

**A- Add nicotinic acid**

B- Add ezetimibe

C- Switch atorvastatin to pravastatin

D- Add bezafibrate

E- Add colestyramine

Q52. Which one of the following features is least recognised in long-term lithium use?

**A- Alopecia**

B- Weight gain

C- Fine tremor

D- Goitre

E- Diarrhoea

Q53. A patient is admitted with central chest pain and a diagnosis of non-ST elevation myocardial infarction is made. Aspirin and fondaparinux are given. What is the mechanism of action of fondaparinux?

A- Reversible direct thrombin inhibitor

B- Glycoprotein IIb/IIIa receptor antagonist

C- Inhibits antithrombin III

D- Inhibits ADP binding to its platelet receptor

**E- Activates antithrombin III**

Q54. Which one of the following symptom is least associated with salicylate overdose?

**A- Tremor**

B- Tinnitus

C- Hyperventilation

D- Seizures

E- Nausea

Q55. A 69-year-old man is started on tamsulosin for benign prostatic hyperplasia. Which one of the following best describes the side-effects he may experience?

A- Urgency + insomnia

**B- Dizziness + postural hypotension**

C- Urinary retention + nausea

D- Urgency + erectile dysfunction

E- Erectile dysfunction + reduced libido

Q56. Which one of the following drugs is least likely to cause gynaecomastia?

A- Spironolactone

**B- Sodium valproate**

C- Digoxin

D- Cimetidine

E- Anabolic steroids

Q57. A 62-year-old man is reviewed in diabetes clinic. His glycaemic control is poor despite weight loss, adherence to a diabetic diet and his current diabetes medications. He has no other past medical history of note. Which one of the following medications would increase insulin sensitivity?

A- Repaglinide

B- Tolbutamide

**C- Pioglitazone**

D- Acarbose

E- Gliclazide

Q58. A 52-year-old homeless man is admitted with suspected ethylene glycol toxicity. Following admission to the High Dependency Unit it is decided to give fomepizole. What is the mechanism of action of fomepizole?

A- Competitive inhibitor of aldehyde dehydrogenase

B- Binds to glycoaldehyde

C- Binds to glycolic acid

D- Promotes renal excretion of ethylene glycol

**E- Competitive inhibitor of alcohol dehydrogenase**

Q59. A 47-year-old lorry driver presents following the development of a widespread urticarial rash. This is associated with pruritus. What is the most appropriate medication to help relieve the itch?

A- Cetirizine

**B- Loratadine**

C- Chlorphenamine

D- Ranitidine

E- Alimemazine

Q60. Which one of the following is a mixed alpha and beta adrenoceptor antagonist?

A- Doxazosin

B- Phenoxybenzamine

C- Yohimbine

D- Propranolol

**E- Carvedilol**

Q61. Which one of the following is an absolute contraindication to combined oral contraceptive pill use?

A- Controlled hypertension

B- History of cholestasis

**C- Women more than 35 years old and smoking more than 15 cigarettes/day**

D- BMI of 38 kg/m^2

E- Migraine without aura

Q62. A 76-year-old man presents with lower urinary tract symptoms. Following a digital rectal examination and prostate specific antigen test a diagnosis of benign prostatic hyperplasia is made and finasteride is started. What is the mechanism of action of this drug?

A- Alpha-1 antagonist

B- 5-alpha receptor antagonist

C- Testosterone receptor antagonist

D- Alpha-1 agonists

**E- Inhibits conversion of testosterone to dihydrotestosterone**

Q63. A 65-year-old man with a history of type 2 diabetes mellitus and ischaemic heart disease presents with erectile dysfunction. It is decided to try sildenafil therapy. Which one of the following existing medications may be continued without making any adjustments?

A- GTN spray

B- Nicorandil

**C- Nateglinide**

D- Doxazosin

E- Isosorbide mononitrate

Q64. Which of the following is least likely to be a precipitating factor in digoxin toxicity?

A- Hypernatraemia

**B- Hypocalcaemia**

C- Hypokalaemia

D- Hypothermia

E- Hypomagnesaemia

Q65. A 65-year-old man with a history of ischaemic heart disease is admitted with chest pain. The 12-hour troponin T is negative. During admission his medications were altered to reduce the risk of cardiovascular disease and to treat previously undiagnosed type 2 diabetes mellitus. Shortly after discharge he presents to his GP complaining of diarrhoea. Which one of the following medications is most likely to be responsible?

A- Gliclazide

B- Clopidogrel

C- Rosiglitazone

**D- Metformin**

E- Atorvastatin

Q66. A 31-year-old woman presents to the Emergency Department complaining of a headache. She has had 'flu' like symptoms for the past three days with the headache developing gradually yesterday. The headache is described as being 'all over' and is worse on looking at bright light or when bending her neck. On examination her temperature is 38.2º, pulse 96 / min and blood pressure 116/78 mmHg. There is neck stiffness present but no focal neurological signs. On close inspection you notice a number of petechiae on her torso. She has been cannulated and bloods (including cultures) have been taken. What is the most appropriate next step?

**A- IV cefotaxime**

B- Arrange a CT head

C- Perform a lumbar puncture

D- IV dexamethasone

E- Intramuscular benzypenicillin

Q67. Which one of the following statements regarding drug metabolism is incorrect?

A- Reduction is an example of a phase I reaction

B- The majority of both phase I and phase II reactions take place in the liver

C- Aspirin undergoes extensive first-pass metabolism

**D- Products of phase I reactions are typically more lipid soluble**

E- Products of phase II reactions are typically inactive and excreted in urine or bile

Q68. A 61-year-old female is reviewed in the rheumatology clinic with increasing shortness of breath. She has been on long-term drug therapy to control her rheumatoid arthritis and has a 40 pack-year history os smoking . Her oxygen saturations on room air are on 89%. Investigations reveal the following: FEV1% 80% Transfer factor coefficient (TLCO) 41% What is the most likely cause for her symptoms?

A- Pulmonary nodules

**B- Methotrexate pneumonitis**

C- Pulmonary haemorrhage

D- Bronchiolitis obliterans

E- Chronic obstructive pulmonary disease

Q69. A 41-year-old alcoholic is admitted with a suspected variceal haemorrhage. Terlipressin is given. What is the main mechanism of action of terlipressin?

A- Portal system vasodilation

B- Antifibrinolytic

C- Constriction of hepatic venules

D- Endothelin-1 antagonist

**E- Constriction of the splanchnic vessels**

Q70. What is the mode of action of bisphosphonates?

A- Promotes osteoblasts

B- Promotes calcium absorption

C- Antagonist of PTH

**D- Inhibit osteoclasts**

E- Promotes phosphate excretion

Q71. A 36-year-old former intravenous drug user is to commence treatment for hepatitis C with interferon-alpha and ribavirin. Which of the following adverse effects are most likely to occur when patients are treated with interferonalpha?

A- Diarrhoea and transient rise in ALT

B- Cough and haemolytic anaemia

C- Flu-like symptoms and transient rise in ALT

D- Haemolytic anaemia and flu-like symptoms

**E- Depression and flu-like symptoms**

Q72. A 44-year-old man asks for advice. He is due to go on a long bus journey but suffers from debilitating motion sickness. Which one of the following medications is most likely to prevent motion sickness?

**A- Cyclizine**

B- Chlorpromazine

C- Metoclopramide

D- Prochlorperazine

E- Domperidone

Q73. What is the mechanism of action of ciclosporin?

A- Monoclonal antibody against IL-2 receptor

B- Interferes with purine synthesis

C- Inhibits inosine monophosphate dehydrogenase

**D- Decreases IL-2 release by inhibiting calcineurin**

E- Mercaptopurine antagonist

Q74. What is the mechanism of action of sumatriptan?

A- 5-HT3 agonist

B- 5-HT2 antagonist

C- 5-HT2 agonist

D- 5-HT1 antagonist

**E- 5-HT1 agonist**

Q75. A 19-year-old man presents to the Emergency Department 5 hours ingesting 20g of paracetamol. N-acetyl cysteine is started straight away. What is the mechanism of action of N-acetyl cysteine?

**A- Replenishes glutathione**

B- Inhibits P450 mixed function oxidases

C- Replenishes glucuronic acid

D- Promotes formation of N-acetyl-B-benzoquinone imine

E- Neutralises mercapturic acid

Q76. Which of the following drugs is considered least likely to precipitate an attack of acute intermittent porphyria?

A- Diazepam

**B- Penicillin**

C- Thiopentone

D- Sulphonamides

E- Alcohol

Q77. A 41-year-old woman is admitted following a deliberate overdose of ethylene glycol. She is confused and unable to give any further history. On examination the pulse is 96 / min, blood pressure is 142/84 mmHg and temperature 37.1ºC. Blood tests show: Na+ 139 mmol/l K + 4.0 mmol/l Chloride 104 mmol/l Bicarbonate 26 mmol/l Urea 4.0 mmol/l Creatinine 88 µmol/l What is the most appropriate management of this patient?

A- Ethanol

**B- Fomepizole**

C- Haemodialysis

D- Haemofiltration

E- Dantrolene

Q78. Which one of the following drugs is contra-indicated whilst breast feeding?

A- Aminophylline

B- Carbamazepine

C- Sodium valproate

D- Methyldopa

**E- Amiodarone**

Q79. A 31-year-old female with a history of epilepsy consults you following an uneventful pregnancy. Which one of the following drugs would it be safe to continue during breast feeding?

A- Phenytoin

B- Carbamazepine

C- Lamotrigine

D- Sodium valproate

**E- All of the above**

Q80. A 47-year-old female is reviewed in the neurology clinic. She was diagnosed with epilepsy whilst a teenager and her seizures are well controlled. She is however concerned about increasing numbness of her fingers and soles of her feet. Which one of the following medications is most likely to be responsible?

**A- Phenytoin**

B- Lamotrigine

C- Sodium valproate

D- Ethosuximide

E- Levetiracetam

Q81. Which of the following conditions may not be treated by dopamine receptor agonists?

A- Parkinson's disease

B- Prolactinoma

**C- Nausea**

D- Cyclical breast disease

E- Acromegaly

Q82. Which one of the following unwanted effects is most likely to occur in patients taking gliclazide?

A- Peripheral neuropathy

B- Cholestasis

C- Photosensitivity

D- Syndrome of inappropriate ADH secretion

**E- Weight gain**

Q83. A 62-year-old man presents four weeks after initiating metformin for type 2 diabetes mellitus. His body mass index is 27.5 kg/m^2. Despite slowly titrating the dose up to 500mg tds he has experienced significant diarrhoea. He has tried reducing the dose back down to 500mg bd but his symptoms persisted. What is the most appropriate action?

A- Switch to pioglitazone 15mg od

B- Switch to gliclazide 40mg od

**C- Start modified release metformin 500mg od with evening meal**

D- Add loperamide as required

E- Arrange colonoscopy

Q84. A 46-year-old man is admitted to hospital with chest pain. An ECG shows an anterior ST elevation myocardial infarction and he receives thrombolysis. His past medical history includes hypertension and he drinks around 70 units of alcohol per week. Three days following admission he becomes confused. What treatment is most likely to help?

**A- Benzodiazepines**

B- Thiamine

C- Frusemide

D- Renal angioplasty

E- Neurosurgical referral

Q85. A 22-year-old man consults you as he and his housemate have been feeling generally unwell for the past few weeks. Which one of the following is the most common feature of carbon monoxide poisoning?

A- Hyperpyrexia

B- Nausea

C- Cherry red skin

D- Confusion

**E- Headache**

Q86. A 61-year-old man with peripheral arterial disease is prescribed simvastatin. What is the most appropriate blood test monitoring?

A- LFTs + creatinine kinase at baseline, 1-3 months and at intervals of 6 months for 1 year

B- LFTs at baseline and every 3 months for first year

C- Routine blood tests not recommended

D- LFTs at baseline and annually

**E- LFTs at baseline, 3 months and 12 months**

Q87. Which one of the following side-effects is least recognised in patients taking isotretinoin?

**A- Hypertension**

B- Teratogenicity

C- Nose bleeds

D- Depression

E- Raised triglycerides

Q88. A 78-year-old woman is discharged following a fractured neck of femur. On review she is making good progress but consideration is given to secondary prevention of further fractures. What is the most suitable management?

A- Arrange DEXA scan + start strontium ranelate if T-score <-2.5 SD

**B- Start oral bisphosphonate**

C- Arrange DEXA scan + start oral bisphosphonate if T-score <-1.0 SD

D- Arrange DEXA scan + start hormone replacement therapy if T-score <-2.5 SD

E- Arrange DEXA scan + start oral bisphosphonate if T-score <-1.5 SD

Q89. Which one of the following statements regarding raloxifene in the management of osteoporosis is incorrect?

A- Has been shown to prevent bone loss and to reduce the risk of vertebral fractures

B- Is a selective oestrogen receptor modulator

C- May worsen menopausal symptoms

D- Increases risk of thromboembolic events

**E- Increases the risk of breast cancer**

Q90. A 55-year-old man who has a history of ischaemic heart disease presents with myalgia. His long-term medications include aspirin, simvastatin and atenolol. Given his statin use a creatine kinase is measured and reported as follows: Creatine kinase 1,420 u/l (< 190 u/l) His problems seem to have followed the prescription of a new medication. Which one of the following is most likely to have caused the elevation in creatine kinase?

A- Rifampicin

B- Felodipine

**C- Clarithromycin**

D- Ciprofloxacin

E- Amitriptyline

Q91. A 76-year-old woman is diagnosed with Alzheimer's disease. Which one of the following could be a contraindication to the prescription of donepezil?

A- History of depression

**B- Sick sinus syndrome**

C- Concurrent simvastatin therapy

D- Concurrent citalopram therapy

E- Ischaemic heart disease

Q92. What is the mechanism of action of nicorandil?

A- Fast-sodium channel antagonist

B- Nitric oxide reductase inhibitor

C- Acts on the If ion current in the sinoatrial node

**D- Potassium-channel activator**

E- Glutathione S-transferase inhibitor

Q93. Which of the following drugs is least likely to cause cholestasis?

A- Gliclazide

**B- Amiodarone**

C- Chlorpromazine

D- Oral contraceptive pill

E- Co-amoxiclav

Q94. A 34-year-old man who is known to have glucose-6-phosphate dehydrogenase deficiency presents with symptoms of a urinary tract infection. He is prescribed an antibiotic. A few days later he becomes unwell and is noticed by his partner to be pale and jaundiced. What drug is mostly likely to have been prescribed?

A- Co-amoxiclav

B- Trimethoprim

**C- Ciprofloxacin**

D- Cefalexin

E- Erythromycin

Q95. Low molecular weight heparin has the greatest inhibitory effect on which one of the following proteins involved in the coagulation cascade?

A- Factor IXa

B- Factor XIa

**C- Factor Xa**

D- Thrombin

E- Factor XIIa

Q96. Which one of the following statements regarding amiodarone-induced thyrotoxicosis (AIT) is correct?

**A- AIT type 2 should be treated with corticosteroids**

B- Amiodarone should be continued in the majority of patients

C- Carbimazole is contraindicated in AIT type 1

D- Goitre is usually present in AIT type 2

E- AIT type 1 is due to a amiodarone-related destructive thyroiditis

Q97. Which one of the following dopamine receptor agonists used in the management of Parkinson's disease is least associated with pulmonary, retroperitoneal and pericardial fibrosis?

A- Pergolide

B- Lisuride

C- Bromocriptine

D- Cabergoline

**E- Ropinirole**

Q98. A 69-year-old man who takes warfarin for atrial fibrillation asks for advice. He is due to have a tooth extraction at the dentist and is unsure what to do with regards to his 'blood-thinning' tablets. There is no other past medical history of note. The last INR was taken two weeks ago and reported as 2.8 with his target INR being 2.0-3.0. What is the most appropriate advice?

A- Admit to hospital + switch to subcutaneous low-molecular weight heparin prior to extraction

B- Switch to aspirin prior to extraction

**C- Check INR 72 hours before procedure, proceed if INR < 4.0**

D- Check INR 72 hours before procedure, proceed if INR < 2.5

E- Admit to hospital + switch to intravenous heparin prior to extraction

Q99. Which one of the following side-effects is least recognised in patients taking ciclosporin?

**A- Hypokalaemia**

B- Hyperplasia of the gum

C- Hypertension

D- Tremor

E- Excessive hair growth

Q100. A 34-year-old man with long-standing gastro-oesophageal reflux disease is reviewed in clinic. He has recently switched from ranitidine to omeprazole. What is the main benefit of omeprazole compared to ranitidine?

A- Increased gastric motility

B- Longer half-life

C- Decreased post-prandial acid production

**D- Irreversible blockade of H+/K+ ATPase**

E- More effective histamine receptor antagonism

Q101. In the Vaughan Williams classification of antiarrhythmics disopyramide is an example of a:

**A- Class Ia agent**

B- Class Ib agent

C- Class Ic agent

D- Class II agent

E- Class IV agent

Q102. A 34-year-old man with a history of migraine finds that paracetamol taken at the recommend dose often fails to relieve his acute attacks. He drinks 12 units of alcohol per week and smokes 15 cigarettes per day. What factor is likely to contribute to this problem?

A- Bacterial overgrowth

**B- Delayed gastric emptying**

C- P450 enzyme induction

D- First pass metabolism

E- P450 enzyme inhibition

Q103. A 55-year-old diabetic man presents to clinic concerned about erectile dysfunction. What is the mechanism of action of sildenafil?

**A- Phosphodiesterase type V inhibitor**

B- Nitric oxide synthetase inhibitor

C- Nitric oxide donor

D- Non-selective phosphodiesterase inhibitor

E- Phosphodiesterase type IV inhibitor

Q104. Which of the following drugs is least likely to cause cholestasis?

A- Anabolic steroids

B- Erythromycin

C- Prochlorperazine

**D- Halothane**

E- Flucloxacillin

Q105. A 30-year-old woman who is 34 weeks pregnant presents with dysuria and urinary frequency. A urine dipstick is positive for nitrites and leucocytes. Of the options given, what is the most suitable antibiotic to use?

A- Ciprofloxacin

**B- Cefalexin**

C- Trimethoprim + folic acid 5mg

D- Doxycycline

E- Nitrofurantoin

Q106. Thrombocytopenia is associated with each of the following drugs except: A. Abciximab B. Quinine C. Warfarin D. Penicillin E. Sodium valproate

Q107. Which one of the following medications is least associated with the development of methaemoglobinaemia?

**A- Phenytoin**

B- Sulphonamides

C- Dapsone

D- Sodium nitroprusside

E- Primaquine

Q108. A 43-year-old man presents with known acute intermittent porphyria is brought to the Emergency Department by the police due to an acute psychosis. What is the most suitable drug for sedation?

A- Chloral hydrate

B- Diazepam

C- Phenobarbitone

**D- Chlorpromazine**

E- Primidone

Q109. A 54-year-old man is diagnosed with type 2 diabetes mellitus. A decision is made to start simvastatin 40mg. What is the ideal time to advise patients to take this medication?

A- After breakfast

**B- Last thing in the evening**

C- After evening meal

D- Just before evening meal

E- First thing in the morning

Q110. A 47-year-old man is reviewed in the smoking cessation clinic. Which one of the following conditions would contraindicate the prescription of bupropion?

A- History of supraventricular tachycardia

B- Previous episodes of acute pancreatitis

**C- Epilepsy**

D- Depression

E- Hypertension

Q111. A 62-year-old is started on allopurinol prophylaxis following his second episode of gout in the past 12 months. What is the mechanism of action of allopurinol?

A- Promotes excretion of uric acid

B- Causes the depolymerisation of intracellular microtubules

C- Uric acid chelator

**D- Inhibits xanthine oxidase**

E- Xanthine oxidase activator

Q112. A patient who is intolerant of aspirin is started on clopidogrel for the secondary prevention of ischaemic heart disease. Concurrent use of which one of the following drugs may make clopidogrel less effective?

A- Warfarin

**B- Omeprazole**

C- Codeine

D- Long-term tetracycline use (e.g. For acne rosacea)

E- Selective serotonin reuptake inhibitors

Q113. A 14-year-old is seen in the Emergency Department. She was diagnosed with having migraines three years ago and requests advice about options for treating an acute attack. Which one of the following medications is it least suitable to recommend?

**A- Aspirin**

B- Paracetamol + prochlorperazine

C- Paracetamol + codeine

D- Ibuprofen

E- Paracetamol

Q114. A 54-year-old man is investigated for recurrent episodes of abdominal pain associated with weakness of his arms and legs. Which one of the following urine tests would best indicate lead toxicity?

A- Haemoglobinuria

**B- Coproporphyrin**

C- Porphobilinogen

D- Uroporphyrin

E- Ham's test

Q115. Which one of the following side-effects is not recognised in patients taking sodium valproate?

A- Alopecia

B- Weight gain

C- Hepatitis

**D- Induction P450 system**

E- Teratogenicity

Q116. Each of the following drugs are known to inhibit cytochrome P450, except:

A- Ketoconazole

B- Ciprofloxacin

C- Erythromycin

**D- Clopidogrel**

E- Amiodarone

Q117. A 45-year-old female with a history of bipolar disorder presents with an acute confusional state. Which one of the following drugs is most likely to precipitate lithium toxicity?

A- Sodium valproate

B- Atenolol

C- Aminophylline

D- Sodium bicarbonate

**E- Bendroflumethiazide**

Q118. A 49-year-old homeless man is admitted to the ITU after drinking a large quantity of methanol. Treatment with fomepizole is started. What is the mechanism of action of fomepizole?

A- Chelates methanol

**B- Competitive inhibition of alcohol dehydrogenase**

C- Converts methanol to ethanol

D- Competitive inhibition of aldehyde dehydrogenase

E- Formaldehyde dehydrogenase inhibitor

Q119. A 26-year-old woman with a history of schizophrenia is reviewed in the Emergency Department. Her carer reports that she has been 'staring' for the past few hours but has now developed abnormal head movements and has gone 'cross-eyed'. On examination the patients neck is extended and positioned to the right. Her eyes are deviated upwards and are slightly converged. Given the likely diagnosis, what is the most appropriate treatment?

**A- Procyclidine**

B- Dopamine

C- Selegiline

D- Haloperidol

E- Diazepam

Q120. Which one of the following statements regarding the management of pregnant women with severe pre-eclampsia and eclampsia is incorrect?

**A- Intravenous fluids should be given to prevent renal failure**

B- Magnesium sulphate treatment should continue for 24 hours post-partum

C- Problems are only seen after 20 weeks gestation

D- Reflexes should be monitored during magnesium sulphate infusion

E- Magnesium sulphate is given to both prevent and treat seizures

Q121. A 33-year-old woman is prescribed varenicline to help her quit smoking. What is the mechanism of action of varenicline?

A- Norepinephrine and dopamine reuptake inhibitor, and nicotinic antagonist

B- Dopamine agonist

C- Dopamine antagonist

D- Selective serotonin reuptake inhibitor

**E- Nicotinic receptor partial agonist**

Q122. A 72-year-old female known to have osteoporosis is started on alendronate. Which one of the following side-effects is it most important to warn her about?

A- Sore throat

**B- Heartburn**

C- Headache

D- Diarrhoea

E- Palpitations

Q123. A 70-year-old woman is prescribed bumetanide for congestive cardiac failure. Where is the site of action of bumetanide?

A- Descending loop of Henle

B- Macula densa

**C- Ascending loop of Henle**

D- Distal collecting duct

E- Proximal collecting duct

Q124. What is the mechanism of action of tacrolimus?

A- Mercaptopurine antagonist

B- Interferes with purine synthesis

C- Inhibits inosine monophosphate dehydrogenase

D- Monoclonal antibody against IL-2 receptor

**E- Decreases IL-2 release by inhibiting calcineurin**

Q125. A 71-year-old man is prescribed digoxin for new onset atrial fibrillation. His doctor explains that the full effect will not be seen for one week. Which one of the following is responsible for this delayed effect?

A- Clearance

B- Volume of distribution

C- Absorption

D- First pass metabolism

**E- Half-life**

Q126. A 62-year-old female is reviewed in the nurse-led heart failure clinic. Despite current treatment with furosemide, bisoprolol, enalapril and spironolactone she remains breathless on minimal exertion. On examination the chest is clear to auscultation and there is minimal ankle oedema. Recent results are as follows: ECG Sinus rhythm, rate 84 bpm Chest x-ray Cardiomegaly, clear lung fields Echo Ejection fraction 35% A combination of isosorbide dinitrate with hydralazine has been tried recently but had to be stopped due to side-effects. What additional medication would best help her symptoms?

A- Bosentan

B- Isosorbide mononitrate

C- Diltiazem

D- Ivabradine

**E- Digoxin**

Q127. A 36-year-old man with difficult to control epilepsy is reviewed in clinic. He is currently taking phenytoin but presents due to fatigue. A full blood count is performed: Hb 10.1 g/dl MCV 121 fl Plt 234 \* 109 /l WCC 4.6 \*109 /l What is the most likely cause for his tiredness?

A- Iron deficiency

B- Vitamin B12 deficiency

C- Liver dysfunction secondary to phenytoin

D- Haemolytic anaemia secondary to phenytoin

**E- Folate deficiency**

Q128. A 44-year-old woman with oestrogen receptor positive breast cancer comes for review, three months after starting tamoxifen. Which one of the following adverse effects is most likely to occur in this patient?

A- Myalgia

B- Cataracts

C- Alopecia

**D- Hot flushes**

E- Cervical cancer

Q129. Where is the site of action of bendroflumethiazide?

A- Proximal convoluted tubules

B- Ascending loop of Henle

C- Descending loop of Henle

**D- Proximal part of the distal convoluted tubules**

E- Distal part of the distal convoluted tubules

Q130. What is the most appropriate time to take blood samples for therapeutic monitoring of phenytoin levels?

A- At any time

B- 12 hours after last dose

C- 6 hours after last dose

D- 4 hours after last dose

**E- Immediately before next dose**

Q131. A 45-year-old man with a known history of seafood allergy is admitted to the Emergency Department. He developed an itchy skin rash whilst having dinner at a restaurant. On examination he has widespread urticaria but no facial or neck swelling. His respiratory rate is 30 per minute with oxygen sats of 99% on room air. The blood pressure is 168/90 mmHg and the pulse 104 bpm. Intravenous hydrocortisone and chlorpheniramine are given. What is the most appropriate next step in management?

A- Inhaled adrenaline

**B- Observe**

C- Subcutaneous adrenaline

D- Intravenous adrenaline

E- Intramuscular adrenaline

Q132. Which one of the following may reduce the effects of adenosine?

A- Dipyridamole

B- Diltiazem

C- Clopidogrel

D- Amiodarone

**E- Aminophylline**

Q133. A 65-year-old female is admitted to the Emergency Department following an overdose of a long-acting propranolol preparation. On admission she is bradycardic with a pulse of 36/min and BP 90/50. The bradycardia fails to respond to atropine. What is the most appropriate management?

A- Temporary cardiac pacing

B- Haemodialysis

**C- Glucagon**

D- Noradrenaline infusion

E- Salbutamol infusion

Q134. A 24-year-old woman presents following a sudden, acute onset of pain at the back of the ankle whilst jogging, during which she heard a cracking sound. Which one of the following medications may have contributed to this injury?

A- Metronidazole

B- Nitrofurantoin

C- Fluconazole

**D- Ciprofloxacin**

E- Terbinafine

Q135. A 45-year-old man develops toxic epidermal necrolysis following a change in his epilepsy medication. He is systemically unwell and is admitted to ITU for supportive care. What is the most appropriate treatment?

**A- Intravenous immunoglobulin**

B- Cyclophosphamide

C- Supportive care only

D- Pulsed methylprednisolone

E- Plasmapheresis

Q136. A patient is given ondansetron for chemotherapy related nausea. What is the most likely side-effect?

**A- Constipation**

B- Dry mouth

C- Insomnia

D- Visual disturbance

E- Pruritus

Q137. A confused 45-year-old man is admitted to the Emergency Department. He tells staff he has drunk two bottles of antifreeze. On examination his pulse is 120 bpm and blood pressure is 140/90 mmHg. Arterial blood gases show an uncompensated metabolic acidosis. He is transferred to the high dependency unit and ethanol is given via a nasogastric tube. What is the mechanism of action of ethanol in this patient?

A- Binds to glycolic acid

B- Inhibits aldehyde dehydrogenase

C- Inhibits alcohol dehydrogenase

**D- Competes with ethylene glycol for alcohol dehydrogenase**

E- Binds to glycoaldehyde

Q138. Which one of the following drugs does not characteristically undergo extensive first-pass metabolism?

A- Propranolol

B- Glyceryl trinitrate

**C- Diazepam**

D- Aspirin

E- Verapamil

Q139. Which of the following drugs is most likely to cause impaired glucose tolerance?

A- Bromocriptine

**B- Interferon-alpha**

C- Strontium

D- Imipramine

E- Montelukast

Q140. A 71-year-old woman who takes warfarin for atrial fibrillation presents with lethargy. A blood test is arranged: Hb 14.7 g/dl Plt 198 \* 109 /l WBC 5.3 \* 109 /l INR 6.1 What is the most appropriate management? restarted

A- Stop warfarin + restart when INR < 3.0

B- Intravenous vitamin K 0.5mg + stop warfarin + restart when INR < 5.0

**C- Withhold 2 doses of warfarin and reduce subsequent maintenance dose**

D- Stop warfarin + restart when INR < 5.0 + give low-molecular weight heparin until warfarin

E- Oral vitamin K 5mg + stop warfarin + restart when INR < 3.0

Q141. Each one of the following is a feature of mercury poisoning, except:

A- Paraesthesia

**B- Epistaxis**

C- Renal tubular acidosis

D- Visual field defects

E- Hearing loss

Q142. A 72-year-old man with metastatic small cell lung cancer is admitted to the local hospice for symptom control. His main problem at the moment is intractable hiccups. What is the most appropriate management?

**A- Chlorpromazine**

B- Codeine phosphate

C- Diazepam

D- Methadone

E- Phenytoin

Q143. A 29-year-old woman is admitted to the Emergency Department with carbon monoxide poisoning. High-flow oxygen is applied on arrival. Which one of the following is not an indication for hyperbaric oxygen therapy?

**A- A carboxyhaemoglobin concentration of 16%**

B- Arrhythmia

C- Extrapyramidal features

D- Loss of consciousness when initially found by paramedics

E- Pregnancy

Q144. A 16-year-old girl is admitted to the Emergency Department late on a Friday night. She is complaining of palpitations and feeling 'unwell'. Her friends state that she has had a bad reaction to the alcohol they've been drinking and deny the use of any illicit substances. On examination she is agitated and clutching her chest. Her pupils are mydriatic and the pulse rate is 108/min, blood pressure 130/90 mmHg. She says that she is going to be sick. Which of the following substances may account for this presentation?

A- Cannabis

**B- Cocaine**

C- LSD

D- Heroin

E- Ketamine

Q145. Which one of the following is not a recognised adverse effect of phenytoin use?

A- Slurred speech

B- Nystagmus

**C- Gynaecomastia**

D- Diplopia

E- Ataxia

Q146. A 75-year-old woman with a history of hypothyoidism is admitted to the Emergency Department following an episode of chest pain. She is diagnosed as having an acute coronary syndrome and irondeficiency anaemia. A percutaneous coronary intervention is performed and a coronary artery stent is inserted. Endoscopies of the upper and lower gastrointestinal tract are performed and reported as normal. She is discharged on the following drugs in addition to her regular levothyroxine: aspirin, clopidogrel, ramipril, lansoprazole, simvastatin and ferrous sulphate. Six weeks later she complains of feeling tired all the time. Her GP arranges some routine blood tests: Hb 11.9 g/dl Platelets 155 \* 109 /l WBC 5.2 \* 109 /l Free T4 8.1 pmol/l TSH 8.2 mu/l Prior to her recent admission the TSH has been within range for the past two years. Which one of the following new drugs most likely explains the raised TSH?

A- Simvastatin

B- Clopidogrel

**C- Ferrous sulphate**

D- Ramipril

E- Lansoprazole

Q147. A 65-year-old female with metastatic breast cancer is reviewed in clinic. Her husband reports that she is increasingly confused and occasionally appears to talk to relatives that are not in the room. Following investigations for reversible causes, what is the most appropriate management?

A- Subcutaneous midazolam

B- Oral lithium

**C- Oral haloperidol**

D- Oral diazepam

E- Oral quetiapine

Q148. A 56 year old man is treated with doxorubicin for transition cell carcinoma of the bladder. Which one of the following adverse effects is most characteristically associated with this drug?

A- Ototoxicity

B- Pulmonary fibrosis

C- Peripheral neuropathy

**D- Cardiomyopathy**

E- Haemorrhagic cystitis

Q149. Which of the following anti-retroviral drugs is a known inducer of cytochrome P450?

**A- Nevirapine**

B- Ritonavir

C- Saquinavir

D- Nelfinavir

E- Zidovudine

Q150. Which one of the following is least recognised as a side-effect of sildenafil?

A- Blue discolouration of vision

**B- Abnormal liver function tests**

C- Flushing

D- Nasal congestion

E- Non-arteritic anterior ischaemic optic neuropathy

Q151. Which of the following drugs is least likely to cause cholestasis?

A- Erythromycin

B- Nitrofurantoin

**C- Methyldopa**

D- Gliclazide

E- Oral contraceptive pill

Q152. A 70-year-old woman is reviewed. She sustained a fracture of her wrist one year ago, following which a DEXA scan was performed. This showed a T-score of-2.8 SD. Calcium and vitamin D supplementation was started along with oral alendronate. This however was stopped due to oesophagitis. In accordance with NICE guidelines, what is the most suitable next management step?

A- Start hormone replacement therapy

B- Start raloxifene

C- Start teriparatide

**D- Switch to risedronate**

E- Refer for hip protectors

Q153. A 55-year-old man presents with multiple erythematous target lesions two days after starting a new medication. Which one of the following drugs is most likely to have been started?

A- Levetiracetam

B- Olanzapine

**C- Carbamazepine**

D- Fluoxetine

E- Diazepam

Q154. Which one of the following drugs is least associated with pancytopaenia?

A- Carbamazepine

B- Carbimazole

**C- Lithium**

D- Gold

E- Chloramphenicol

Q155. A 40-year-old woman who is known to be HIV positive is reviewed in the respiratory clinic. She has recently started treatment for tuberculosis and is complaining of a loss of sensation in her hands Which one of the following drugs is most likely to be responsible?

A- Indinavir

B- Pyrazinamide

C- Zidovudine

D- Streptomycin

**E- Isoniazid**

Q156. Each of the following are true regarding tricyclic overdose, except:

A- Anticholinergic features are prominent early on

B- Metabolic acidosis is a common complication

C- ECG changes include prolongation of the QT interval

**D- Dialysis is indicated in severe toxicity**

E- QRS duration > 160ms is associated with ventricular arrhythmias

Q157. A 34-year-old man with a history of bipolar disorder is admitted with acute confusion. Lithium levels confirm the clinical diagnosis of lithium toxicity. A decision is made to give sodium bicarbonate. What is the mechanism of action of sodium bicarbonate in this situation?

A- Reduce gastrointestinal tract absorption

B- Myocardial stabaliser

C- Neutralises lithium ions

D- Central nervous system membrane stabaliser

**E- Increases urine alkalinity**

Q158. Which of the following drugs is considered most likely to precipitate an attack of acute intermittent porphyria?

A- Morphine

B- Aspirin

C- Atenolol

D- Metformin

**E- Oral contraceptive pill**

Q159. You are considering prescribing varenicline to a 45-year-old man who is trying to stop smoking. Which one of the following conditions is most likely to contradict the prescription of varenicline?

A- Previous or current central nervous system tumour

**B- Past history of deliberate self-harm**

C- Hypertension

D- Epilepsy

E- Obesity

Q160. Which of the following antibiotics is predominately bacteriostatic?

A- Metronidazole

B- Penicillins

C- Isoniazid

**D- Sulphonamides**

E- Aminoglycosides

Q161. What is the mechanism of action of bivalirudin in acute coronary syndrome?

A- Activates antithrombin III

B- Inhibits the production of thromboxane A2

C- Coronary vasodilator

**D- Reversible direct thrombin inhibitor**

E- Glycoprotein IIb/IIIa receptor antagonist

Q162. Which one of the following features is least associated with ecstasy poisoning?

A- Rhabdomyolysis

B- Hyperthermia

C- Ataxia

D- Hypertension

**E- Hypernatraemia**

Q163. Which one of the following is least recognised as an adverse effect of phenytoin use?

A- Megaloblastic anaemia

B- Peripheral neuropathy

**C- Alopecia**

D- Osteomalacia

E- Coarsening of facial features

Q164. An elderly man is admitted to the acute medical unit with dyspnoea. He is known to have ischaemic heart disease and chronic heart failure (NYHA class III). He develops atrial fibrillation with a fast ventricular response during his admission. Which one of the following drugs is contraindicated?

A- Amiodarone

B- Digoxin

C- Bisoprolol

**D- Flecainide**

E- Warfarin

Q165. Which of the following is true regarding the pathophysiology of paracetamol overdose?

A- Paracetamol is normally exclusively metabolised by the P450 system

B- Paracetamol overdose leads to an excessive build up of mercapturic acid

**C- Conjugation of paracetamol becomes saturated in overdose**

D- Glutathione levels increase following paracetamol overdose leading to hepatocellular death

E- N-acetyl cysteine acts by antagonising glutathione

Q166. A 19-year-old student is admitted after being found friends confused and sweating in her room. She is unable to give a history. On examination temperature is 38.1ºC, pulse 108/min, BP 130/70 mmHg and respiratory rate 30/min. Heart sounds are normal but she has bibasal fine inspiratory crackles on her chest. ABGs on air: pH 7.28 pCO2 2.8 kPa pO2 14.2 kPa What is the most likely diagnosis?

A- Paracetamol overdose

B- Acute pancreatitis

C- Mycoplasma septicaemia

D- Legionella pneumonia

**E- Aspirin overdose**

Q167. Which one of the following drugs has been associated with an increased risk of atypical stress fractures of the proximal femoral shaft?

A- Spironolactone

**B- Alendronate**

C- Quetiapine

D- Venlafaxine

E- Clopidogrel

Q168. A patient who was commenced on a simvastatin six months ago presents with generalised muscles aches. Which one of the following is not a risk factor for statin-induced myopathy?

A- Female gender

**B- Large fall in LDL-cholesterol**

C- Low body mass index

D- Advanced age

E- History of diabetes mellitus

Q169. A 35-year-old man with a history of schizophrenia is transferred to the Emergency Department due to an oculogyric crisis. What is the most appropriate treatment?

A- Selegiline

B- Haloperidol

**C- Procyclidine**

D- Bromocriptine

E- Cabergoline

Q170. A patient with type 2 diabetes mellitus is started on sitagliptin. What is the mechanism of action of sitagliptin?

A- Incretin inhibitor

**B- Dipeptidyl peptidase-4 (DPP-4) inhibitor**

C- Alpha-glucosidase inhibitor

D- Glucagon inhibitor

E- Glucagon-like peptide-1 (GLP-1) mimetic

Q171. Which one of the following is not a recognised side-effects of dopamine receptor agonists?

A- Postural hypotension

B- Daytime somnolence

**C- Galactorrhoea**

D- Nausea

E- Hallucinations

Q172. A 64-year-old female with a 30 year history of rheumatoid arthritis is noted to have proteinuria on annual review. Which one of the following drugs is most associated with the development of proteinuria?

A- Ciclosporin

**B- Sodium aurothiomalate**

C- Methotrexate

D- Infliximab

E- Azathioprine

Q173. A 62-year-old woman with a history of recurrent deep vein thrombosis secondary to antiphospholipid syndrome presents for review. She has taken warfarin for the past 7 years, with a target INR of 2.0- 3.0. Her control is normally very good but her last reading was 1.2. Which one of the following would explain her current INR?

A- Starting fluoxetine for depression

B- The formation of lupus anticoagulant autoantibodies

C- Giving up smoking

**D- Recent rifampicin as she was a contact of a patient with meningococcal meningitis**

E- A course of ciprofloxacin for a urinary tract infection

Q174. A 27-year-old woman is started on risperidone for schizophrenia. Which receptor does risperidone have the highest affinity for?

A- Dopamine D1 receptor

**B- Serotonin 5-HT2A receptor**

C- Alpha-adrenoceptor

D- Histamine H1 receptor

E- Dopamine D2 receptor

Q175. Which of the following antibiotics act by inhibiting protein synthesis?

A- Cephalosporins

**B- Gentamicin**

C- Rifampicin

D- Trimethoprim

E- Flucloxacillin

Q176. A 33-year-old woman who is known to have familial hypercholesterolaemia comes for review. She is planning to have children and asks for advice regarding medication as she currently takes atorvastatin 80mg on. What is the most appropriate advice?

A- Switch to atorvastatin 10mg

B- Continue current drug at same dose

**C- Stop atorvastatin before trying to conceive**

D- Switch to ezetimibe

E- Switch to simvastatin 40mg

Q177. A 54-year-old man with a history of hypertension comes for review. He currently takes lisinopril 10mg od, simvastatin 40mg on and aspirin 75mg od. His blood pressure is well controlled at 124/76 mmHg but he also mentions that he is due to have a tooth extraction next week. What advice should be given with regards to his aspirin use?

A- Take aspirin as normal but take tranexamic 1g tds acid 24 hours before and after procedure

B- Stop 72 hours before, restart 24 hours after procedure

C- Stop 24 hours before, restart 12 hours after procedure

**D- Take aspirin as normal**

E- Stop 48 hours before, restart 24 hours after procedure

Q178. A patient is prescribed zanamivir (Relenza) for suspected influenza. Which one of the following underlying problems may increase the likelihood of side-effects?

A- A history of aspirin sensitivity

B- Epilepsy

**C- Asthma**

D- Renal impairment

E- Concurrent use with drugs that prolong the QT interval

Q179. Which of the following cytotoxic agents is most associated with ototoxicity?

A- Vincristine

B- Bleomycin

**C- Cisplatin**

D- Doxorubicin

E- Cyclophosphamide

Q180. Which one of the following side-effects is most associated with ciclosporin use?

**A- Hepatotoxicity**

B- Bone marrow toxicity

C- Red cell aplasia

D- Haemorrhagic cystitis

E- Tinnitus

Q181. A 54-year-old man with hypertension is reviewed in clinic. He complains that over the past two months he has developed ankle swelling. Which one of the following drugs is most likely to be responsible?

A- Perindopril

**B- Amlodipine**

C- Doxazosin

D- Moxonidine

E- Losartan

Q182. Which of the following drugs is most likely to be affected by a patients acetylator status?

A- Ethanol

**B- Hydralazine**

C- Aspirin

D- Phenytoin

E- Verapamil

Q183. What is the most appropriate dose of adrenaline to give during a cardiac arrest?

A- 1ml 1:100,000 IV

B- 10ml 1:1,000 IV

C- 0.5ml 1:1,000 IM

D- 1ml 1:10,000 IV

**E- 10ml 1:10,000 IV**

Q184. Where is the site of action of furosemide?

A- Proximal collecting duct

**B- Ascending loop of Henle**

C- Descending loop of Henle

D- Distal collecting duct

E- Macula densa

Q185. A 62-year-old man with a history of hypertension and epilepsy is noted to have gingival hyperplasia on examination in the cardiology clinic. Which one of the following drugs is most likely to be responsible?

A- Sodium valproate

B- Lisinopril

C- Atorvastatin

**D- Nifedipine**

E- Carbamazepine

Q186. A 40-year-old man with a history of psychiatric problems and epilepsy comes for review. He complains that he is drinking excessive amounts of water and having to urinate frequently. He has not lost any weight and states that he is compliant with his current medications. Blood tests show the following: Na+ 145 mmol/l K + 4.1 mmol/l Urea 6.3 mmol/l Creatinine 101 µmol/l Glucose (random) 6.2 mol/l Which one of the following medications is most likely to be responsible for this presentation?

A- Carbamazepine

B- Fluoxetine

C- Olanzapine

D- Sodium valproate

E- Lithium

Q187. A 54-year-old patient takes hydrocortisone 20mg in the mornings and 5mg at night for Addison's disease. The endocrinology consultant would like her to take prednisolone instead. What dose of prednisolone should be started?

A- 5 mg

B- 6 mg

**C- 7 mg**

D- 10 mg

E- 25 mg

Q188. A patient develops a broad complex tachycardia two days following a myocardial infarction. Intravenous amiodarone is given. Which one of the following best describes the mechanism of action of amiodarone?

**A- Blocks potassium channels**

B- Shortens QT interval

C- Blocks sodium channels

D- Opens sodium channels

E- Blocks calcium channels

Q189. A 70-year-old man who takes warfarin for atrial fibrillation is found to have an INR of 6.2. Which of the following drugs is he most likely to have recently taken?

**A- Ciprofloxacin**

B- Flucloxacillin

C- St John's Wort

D- Carbamazepine

E- Aspirin

Q190. A 25-year-old female who works in a photograph development laboratory is taken to the Emergency Department due to confusion. On admission she is hypoxic and hypotensive. Cyanide poisoning is suspected following discussion with the local poisons unit. What is the definitive treatment?

A- Haemodialysis

**B- Hydroxocobalamin**

C- Penicillamine

D- Ferrous sulphate

E- Desferioxamine

Q191. Which one of the following types of reaction takes place in phase II metabolism of a drug?

**A- Conjugation**

B- Hydrolysis

C- Reduction

D- Deamination

E- Dealkylation

Q192. A 56-year-old man with a history of epilepsy, atrial fibrillation and ischaemic heart disease is noted to have a rash on his forearms and face in the cardiology clinic. Which one of the following drugs is most likely to be responsible?

A- Verapamil

B- Carbamazepine

**C- Amiodarone**

D- Digoxin

E- Clopidogrel

Q193. Which one of the following drugs may be cleared by haemodialysis?

A- Beta-blockers

B- Tricyclics

**C- Aspirin**

D- Benzodiazepines

E- Digoxin

Q194. You are clerking a 67-year-old man who has been admitted with chest pain. His past medical history includes hypertension, angina and he continues to smoke 20 cigarettes / day. Blood tests done in the Emergency Department show the following: Na+ 133 mmol/l K + 3.3 mmol/l Urea 4.5 mmol/l Creatinine 90 µmol/l Which one of the following factors is most likely to explain the abnormalities seen in the urea and electrolytes?

A- Enalapril therapy

B- Felodipine therapy

**C- Bendroflumethiazide therapy**

D- His smoking history

E- Spironolactone therapy

Q195. A patient known to have bipolar disorder presents to the Emergency Department with confusion. Which one of the following drugs is most likely to precipitate lithium toxicity?

A- Frusemide

B- Sodium valproate

C- Digoxin

D- Sodium bicarbonate

**E- Bendroflumethiazide**

Q196. A 67-year-old man with lung cancer is currently taking MST 30mg bd for pain relief. What dose of oral morphine solution should he be prescribed for breakthrough pain?

A- 5 mg

**B- 10 mg**

C- 15 mg

D- 20 mg

E- 30 mg

Q197. A 61-year-old man develops aortic regurgitation after taking medication for Parkinson's disease. Which one of the following medications is he most likely to have taken?

**A- Pergolide**

B- Cabergoline

C- Selegiline

D- Ropinirole

E- Amantadine

Q198. A 28-year-old woman who has rheumatoid arthritis is to be started on etanercept injections after failing to respond to methotrexate and sulfsalazine. Which one of the following adverse effects is associated with the use of etanercept?

A- Triggering Churg-Strauss syndrome

B- Thrombocytosis

C- Tendonitis

D- Cardiomyopathy

**E- Reactivation of tuberculosis**

Q199. A 44-year-old Bangladeshi man with a history of mitral stenosis and atrial fibrillation is diagnosed with tuberculosis. He is commenced on antituberculosis therapy. Three weeks after starting treatment his INR has increased to 5.6. Which one of the following medications is most likely to be responsible for this increase?

A- Pyrazinamide

**B- Isoniazid**

C- Rifampicin

D- Ethambutol

E- Streptomycin

Q200. A 49-year-old female asks about hormone replacement therapy (HRT). What is the most compelling indication for starting HRT?

A- Prevention of ischaemic heart disease

B- Prevention of osteoporosis

C- Reversal of vaginal atrophy

**D- Control of vasomotor symptoms such as flushing**

E- Prevention of Alzheimer's disease

Q201. A 63-year-old female is brought to the Emergency Department due to a decreased level of consciousness. An urgent CT head is performed as she takes warfarin for atrial fibrillation and shows an intracranial haemorrhage. What is the most appropriate management?

A- Protamine sulphate

B- IV vitamin K alone

**C- IV vitamin K + prothrombin complex concentrate**

D- Fresh frozen plasma alone

E- IV vitamin K + fresh frozen plasma

Q202. A 52-year-old man with a history of hypertension is found to have a 10-year cardiovascular disease risk of 28%. A decision is made to start simvastatin 40mg on. Liver function tests are performed prior to initialising treatment: Bilirubin 10 µmol/l (3- 17 µmol/l) ALP 96 u/l (30- 150 u/l) ALT 30 u/l (10- 45 u/l) Gamma-GT 28 u/l (10- 40 u/l) Three months later the LFTs are repeated: Bilirubin 12 µmol/l (3- 17 µmol/l) ALP 107 u/l (30- 150 u/l) ALT 104 u/l (10- 45 u/l) Gamma-GT 76 u/l (10- 40 u/l) What is the most appropriate course of action?

**A- Continue treatment and repeat LFTs in 1 month**

B- Check creatine kinase

C- Reduce dose to simvastatin 10mg on and repeat LFTs in 1 month

D- Stop treatment and consider alternative lipid lowering drug

E- Stop treatment and refer to gastroenterology

Q203. Which one of the following drugs is most likely to cause a prolonged QT interval?

A- Metoclopramide

B- Verapamil

C- Ceftriaxone

**D- Sotalol**

E- Digoxin

Q204. Olanzapine is known to block D2 dopamine receptors. What other type of receptor does it mainly act on?

A- Alpha-adrenoceptors

B- Acetylcholine receptors

**C- Serotonin receptors**

D- D1 dopamine receptors

E- H1 histamine receptors

Q205. Which one of the following is not an indication for haemodialysis in salicylate overdose?

A- Acute renal failure

B- Seizures

**C- Serum concentration = 400 mg/l**

D- Pulmonary oedema

E- Metabolic acidosis resistant to treatment

Q206. A patient is started on the monoclonal antibody trastuzumab. What is the most likely indication?

A- Crohn's disease

B- Chronic lymphocytic leukaemia

C- Renal cancer

D- Colorectal cancer

**E- Breast cancer**

Q207. A 59-year-old man with a known history of type 2 diabetes mellitus, atrial fibrillation and epilepsy presents as he is feeling generally unwell. His main complaint is a blue tinge to his vision. Which one of his medications is most likely to be responsible?

A- Phenytoin

B- Metformin

**C- Sildenafil**

D- Pioglitazone

E- Digoxin

Q208. A 78-year-old woman with a history of recurrent ventricular tachycardia has routine blood tests 3 months after starting amiodarone therapy: TSH 14.5 mu/l Free T4 8.2 pmol/l How should her thyroid dysfunction be managed?

A- Continue amiodarone and add folic acid

B- Stop amiodarone and start thyroxine

C- Stop amiodarone and add carbimazole and thyroxine

D- Stop amiodarone and repeat bloods in 4 weeks

**E- Continue amiodarone and add thyroxine**

Q209. Which of the following relating to St John's Wort is false?

A- Adverse effects in trials is similar to placebo

B- May cause serotonin syndrome

C- Mechanism of action is similar to selective serotonin reuptake inhibitors

**D- Causes inhibition of the P450 system**

E- Has been shown to be effective in treating mild-moderate depression

Q210. Which one of the following immunosuppressant drugs inhibits calcineurin in T cells?

A- Mycophenolate mofetil

B- Basiliximab

C- Azathioprine

**D- Ciclosporin**

E- Methotrexate

Q211. Which one of the following drugs is not known to induce the cytochrome p450 enzyme system?

A- Rifampicin

**B- Isoniazid**

C- Phenobarbitone

D- Griseofulvin

E- Carbamazepine

Q212. A 54-year-old man with a history of epilepsy and ischaemic heart disease is seen in clinic with a 3 month history of lethargy. Blood tests are as follows: Hb 9.6 g/dl MCV 123 fl Plt 134 \* 109 /l WCC 2.6 \*109 /l Which one of his medications is most likely to be responsible?

A- Clopidogrel

B- Atorvastatin

C- Carbamazepine

D- Atenolol

**E- Phenytoin**

Q213. A 49-year-old man with a history of bipolar disorder, COPD and hypertension is started on a new anti-hypertensive medication. Two weeks later he is admitted to hospital with lithium toxicity. Which medication is most likely to have precipitated this?

**A- Ramipril**

B- Aminophylline

C- Atenolol

D- Amlodipine

E- Doxazosin

Q214. Which of the following may reduce the action of aminophylline in patients?

A- Ciprofloxacin

B- Acute ethanol consumption

C- Omeprazole

**D- Smoking**

E- Erythromycin

Q215. A 63-year-old female on long-term warfarin for atrial fibrillation attends the anticoagulation clinic. Despite having a stable INR for the past 4 years on the same dose of warfarin her INR is measured at 5.4. Which one of the following is most likely to be responsible?

A- St John's Wort

B- Smoking

C- Carrot juice

**D- Cranberry juice**

E- Camomile tea

Q216. A 46-year-old woman who has recently been diagnosed as having nonHodgkin's lymphoma is about to start CHOP chemotherapy (cyclophosphamide, hydroxydaunorubicin, vincristine and prednisolone). Her bloods are as follows: Hb 11.8 g/dl Platelets 423 \* 109 /l WBC 11.2 \* 109 /l Na+ 143 mmol/l K + 3.9 mmol/l Urea 6.2 mmol/l Creatinine 78 µmol/l Uric acid 0.45 mmol/l Ciprofloxacin is also prescribed to reduce the risk of neutropenic sepsis. Which other drug should be added to lower the risk of complications?

A- Tranexamic acid

**B- Allopurinol**

C- Ferrous sulphate

D- Aspirin

E- Furosemide

Q217. Which one of the following may enhance the effects of adenosine?

A- Diltiazem

B- Aspirin

C- Clopidogrel

**D- Dipyridamole**

E- Aminophylline

Q218. Which one of the following statements regarding metformin is false?

A- Does not cause hypoglycaemia

B- Increases insulin sensitivity

C- Decreases hepatic gluconeogenesis

**D- Increases endogenous insulin secretion**

E- Reduces GI absorption of carbohydrates

Q219. A patient is given aspirin 300 mg after developing an acute coronary syndrome. What is the mechanism of action of aspirin to achieve an antiplatelet effect?

**A- Inhibits the production of thromboxane A2**

B- Inhibits ADP binding to its platelet receptor

C- Inhibits the production of prostaglandin H2

D- Glycoprotein IIb/IIIa receptor antagonist

E- Inhibits the production of prostacyclin (PGI2)

Q220. A 45-year-old man with a history of epilepsy and psychiatric problems is admitted to the Emergency Department with confusion following a seizure earlier in the day. On examination he is noted to have a coarse tremor, blood pressure is 134/86 mmHg, pulse is 84/min and the temperature is 36.7ºC. What is the most likely diagnosis?

A- Carbamazepine overdose

**B- Lithium toxicity**

C- Benzodiazepine toxicity

D- Tricyclic overdose

E- Neuroleptic malignant syndrome

Q221. What is the mechanism of action of flecainide?

A- Calcium channel blockers

B- Potassium channel blocker

**C- Sodium channel blocker**

D- Potassium channel activator

E- ADP receptor antagonist

Q222. A 39-year-old patient is taking phenelzine, a monoamine oxidase inhibitor, for the treatment of depression. Which one of the following foods can the patient safely eat?

A- Bovril

B- Cheese

C- Oxo

**D- Eggs**

E- Broad beans

Q223. Which one of the following drugs demonstrates saturation pharmacokinetics?

A- Enalapril

B- Bendrofluazide

C- Atenolol

**D- Phenytoin**

E- Paracetamol

Q224. A 45-year-old female with a history of epilepsy is reviewed in the neurology clinic. Which one of the following features is most likely to be attributable to sodium valproate therapy?

A- Clubbing

B- Weight loss

C- Hirsutism

D- Renal impairment

**E- Tremor**

Q225. Where is the site of action of spironolactone?

A- Proximal convoluted tubule

B- Ascending loop of Henle

C- Descending loop of Henle

**D- Distal convoluted tubule**

E- Macula densa

Q226. A 25-year-old woman is diagnosed with a urinary tract infection. She has a past history of epilepsy and is currently taking sodium valproate. Which one of the following antibiotics should be avoided if possible

A- Co-amoxiclav

B- Nitrofurantoin

C- Cefixime

D- Trimethoprim

**E- Ciprofloxacin**

Q227. A 22-year-old man complains of hearing problems. You perform an examination of his auditory system including Rinne's and Weber's test: Rinne's test: Left ear: bone conduction > air conduction Right ear: air conduction > bone conduction Weber's test: Lateralises to the left side What do these tests imply?

A- Normal hearing

**B- Left conductive deafness**

C- Right conductive deafness

D- Left sensorineural deafness

E- Right sensorineural deafness

Q228. Which one of the following pairs of features would be expected to occur following administration of an anticholinesterase (acetylcholinesterase inhibitor)?

**A- Bradycardia and miosis**

B- Bradycardia and urinary retention

C- Tachycardia and diarrhoea

D- Bradycardia and mydriasis

E- Tachycardia and lacrimation

Q229. What is the mechanism of action of heparin?

**A- Activates antithrombin III**

B- Vitamin K antagonist

C- Activates tissue plasminogen activator

D- Inhibits antithrombin III

E- Inhibits protein C

Q230. Which one of the following is least likely to precipitate haemolysis in a patient with G6PD deficiency?

A- Broad beans

B- Sepsis

C- Ciprofloxacin

D- Primaquine

**E- Penicillin**

Q231. Which one of the following statements regarding metformin is true? infarction

**A- Should be stopped in a patient admitted with a myocardial**

B- Hypoglycaemia is a recognised adverse effect

C- May cause a metabolic alkalosis

D- May aggravate necrobiosis lipoidica diabeticorum

E- Increases vitamin B12 absorption

Q232. A 69-year-old man with terminal lung cancer is reviewed. He currently takes MST 60mg bd for pain. He has become unable to take oral medications and a decision is made to set-up a syringe driver. What dose of diamorphine should be prescribed for the syringe driver?

A- 60 mg

**B- 40 mg**

C- 120 mg

D- 30 mg

E- 20 mg

Q233. A patient develops methaemoglobinaemia after being prescribed isosorbide mononitrate. Which substance is most likely to be depleted?

A- Pyruvate kinase

B- Hyponitrite reductase

C- Pyridoxine 5-dehydrogenase

D- Glucose-6-phosphate dehydrogenase

**E- NADH**

Q234. A 35-year-old female diabetic is started on erythromycin for gastroparesis. What is the mechanism of action?

**A- Promotes gastric emptying**

B- Inhibits bacterial overgrowth

C- Acts on central chemoreceptor trigger zone

D- Relaxation of pyloric sphincter

E- Stimulates cholecystokinin release

Q235. Which one of the following is least recognised as an adverse effect of taking bendroflumethiazide?

A- Hypokalaemia

**B- Pseudogout**

C- Hypercalcaemia

D- Impotence

E- Impaired glucose tolerance

Q236. A 34-year-old man with a history of depression is admitted to the Emergency Department. He states he has taken an overdose of both diazepam and dosulepin. On examination blood pressure is 116/78 and the pulse is 140 bpm. His respiratory rate is 8 per minute and the oxygen saturations are 97% on room air. What is the most appropriate next course of action?

A- Give flumazenil

B- Insert a haemodialysis line

**C- Obtain an ECG**

D- Give naloxone

E- Start N-acetylcysteine infusion

Q237. What is the mechanism of action of goserelin in prostate cancer?

A- Androgen receptor antagonist

B- Oestrogen agonist

**C- GnRH agonist**

D- Luteinising hormone receptor antagonist

E- GnRH antagonist

Q238. A 45-year-old man is started on ciclosporin following a renal transplant. Which one of the following adverse effects is most likely to occur?

A- Depression

B- Increased risk of ischaemic heart disease

C- Pulmonary fibrosis

D- Optic neuritis

**E- Nephrotoxicity**

Q239. A 14-year-old girl is taken to the Emergency Department, after being found lying on her bed next to an empty bottle of pills prescribed for her mother. On examination she is agitated, has a clenched jaw and her eyes are deviated upwards. Which drug is she most likely to have consumed?

A- Phenytoin

**B- Metoclopramide**

C- Amitriptyline

D- Carbamazepine

E- Nifedipine

Q240. A 21-year-old student is brought to the Emergency Department by his friends due to him being confused. They report he has been complaining of headaches for the past few weeks. He has a low-grade pyrexia and on examination is noted to have abnormally pink mucosa. What is the most likely diagnosis?

**A- Carbon monoxide poisoning**

B- Meningitis

C- Paracetamol overdose

D- Subarachnoid haemorrhage

E- Methaemoglobinaemia

Q241. A 62-year-old man presents with nocturia, hesitancy and terminal dribbling. Prostate examination reveals a moderately enlarged prostate with no irregular features and a well defined median sulcus. Blood tests show: PSA 1.3 ng/ml What is the most appropriate management?

**A- Alpha-1 antagonist**

B- 5 alpha-reductase inhibitor

C- Non-urgent referral for transurethral resection of prostate

D- Empirical treatment with ciprofloxacin for 2 weeks

E- Urgent referral to urology

Q242. What is the main mechanism of action of simvastatin?

A- Bile acid sequestrant

B- Decreases hepatic HDL synthesis

C- Inhibits lipoprotein lipase

**D- Decreases intrinsic cholesterol synthesis**

E- Agonists of PPAR-alpha

Q243. A woman who is 24-weeks pregnant presents with a productive cough. On examination crackles can be heard in the left base and a decision is made to give an antibiotic. Which one of the following is least suitable to prescribe?

**A- Ciprofloxacin**

B- Erythromycin

C- Co-amoxiclav

D- Cefalexin

E- Cefaclor

Q244. Which one of the following is least associated with lead poisoning?

A- Peripheral neuropathy

**B- Acute glomerulonephritis**

C- Blue lines on gum margin

D- Abdominal pain

E- Microcytic anaemia

Q245. What is the most appropriate time to take blood samples for therapeutic monitoring of lithium levels?

A- At any time

B- Immediately before next dose

C- 4 hours after last dose

D- 6 hours after last dose

**E- 12 hours after last dose**

Q246. You prescribe sumatriptan to a patient who suffers from migraines. Which one of the following side-effects is most commonly associated with this drug?

A- Dystonic reactions such as oculogyric crisis

B- Heartburn

**C- Tightness of the throat and chest**

D- Constipation

E- Insomnia

Q247. A 79-year-old female with a history of COPD and metastatic lung cancer is admitted with increasing shortness of breath. Following discussion with family it is decided to withdraw active treatment, including fluids and antibiotics, as the admission likely represents a terminal event. Two days after admission she becomes agitated and restless. What is the most appropriate management?

**A- Subcutaneous midazolam**

B- Intramuscular haloperidol

C- Oral lormetazepam

D- Oral haloperidol

E- Recommence fluids and antibiotics

Q248. Which one of the following drugs is most likely to cause impaired glucose tolerance?

A- Sulfasalazine

B- Azathioprine

C- Leflunomide

D- Methotrexate

**E- Tacrolimus**

Q249. A 45-year-old man is prescribed bupropion to help him quit smoking. What is the mechanism of action of bupropion?

A- Nicotinic receptor partial agonist

B- Selective serotonin reuptake inhibitor

**C- Norepinephrine and dopamine reuptake inhibitor, and nicotinic antagonist**

D- Dopamine agonist

E- Dopamine antagonist

Q250. Which one of the following patients should not automatically be prescribed a statin in the absence of any contraindication?

A- A 51-year-old man who had a myocardial infarction 4 years ago and is now asymptomatic

B- A 57-year-old female smoker with a 10-year cardiovascular risk of 23%

C- A 53-year-old man with intermittent claudication

D- A 62-year-old man who had a transient ischaemic attack 10 months ago

**E- A 37-year-old man with well controlled diabetes mellitus type 2**

Q251. A 57-year-old woman is referred to urogynaecology with symptoms of urge incontinence. A trial of bladder retraining is unsuccessful. It is therefore decided to use an muscarinic antagonist. Which one of the following medications is an example of a muscarinic antagonist?

**A- Tolterodine**

B- Teriparatide

C- Toremifene

D- Finasteride

E- Tamsulosin

Q252. A 24-year-old with a history of Crohn's disease is started on azathioprine. What is the mechanism of action of azathioprine?

**A- Inhibits purine synthesis**

B- Inhibits inosine monophosphate dehydrogenase

C- Mercaptopurine antagonist

D- Thiopurine methyltransferase inhibitor

E- Causes cross-linking in DNA

Q253. A 30-year-old woman is admitted to the Emergency Department following a suspected peanut allergy. On examination she has gross facial and tongue oedema. Her oxygen saturations are 97% on room air, pulse is 96 / min and blood pressure is 90/62 mmHg. The paramedics have already gained intravenous access. What is the most appropriate way to give adrenaline in this situation?

A- Nebulised

B- Subdermally

**C- Intramuscularly**

D- Intravenously

E- Subcutaenously

Q254. A 52-year-old man with a history of epilepsy is reviewed. Since having his medication change he has experienced a 'numbness' of his hands and feet. On examination he has reduced sensation in a glove-andstocking distribution associated with a reduced ankle reflex. He is also noted to have lymphadenopathy in the cervical and inguinal region and some bleeding around the gums. Which one of the following medications is he most likely to have been taking?

A- Carbamazepine

**B- Phenytoin**

C- Topiramate

D- Sodium valproate

E- Lamotrigine

Q255. What is the mechanism of action of exenatide?

A- Glucagon inhibitor

B- Dipeptidyl peptidase-4 (DPP-4) inhibitor

**C- Glucagon-like peptide-1 (GLP-1) mimetic**

D- Incretin inhibitor

E- Alpha-glucosidase inhibitor

Q256. A patient with poorly controlled asthma is started on montelukast. What is the mechanism of action of this drug?

A- Beta-2 receptor antagonist

B- Beta-2 receptor agonist

C- Leukotriene receptor agonist

**D- Leukotriene receptor antagonist**

E- Phosphodiesterase type-4 inhibitor

Q257. What is the main mechanism of action of ondansetron?

A- Dopamine receptor agonist

B- 5-HT2 receptor antagonist

C- Dopamine receptor antagonist

D- 5-HT2 receptor agonist

**E- 5-HT3 receptor antagonist**

Q258. A 14-year-old boy is brought to the Emergency Department. Whilst in school he injected his friends EpiPen into the palm of his left hand. Shortly afterwards the left middle finger became cold and pale. The capillary refill time was around 5-6 seconds. What is the most appropriate management?

A- Inhalation of Nitrox (mixture of nitrogen + oxygen)

B- Intravenous nitrate infusion

C- Local infiltration of histamine

D- Intravenous prostacyclin infusion

**E- Local infiltration of phentolamine**

Q259. A 67-year-old woman is noted to have corneal opacities during a routine opticians appointment. These are not affecting her vision. Which one of the following drugs is most likely to be the cause?

**A- Amiodarone**

B- Sodium valproate

C- Methotrexate

D- Frusemide

E- Digoxin

Q260. A 72-year-old man with metastatic colon cancer is reviewed. He currently takes co-codamol 30/500 2 tablets qds for pain relief. Unfortunately this is not controlling his pain. What is the most appropriate change to his medication?

**A- Switch to MST 15mg bd + paracetamol 1g qds**

B- Switch to MST 35mg bd + paracetamol 1g qds

C- Add tramadol 50-100mg 1-2 qds

D- Switch to MST 25mg bd

E- Switch to MST 15mg bd

Q261. A 43-year-old man with a history of bipolar disorder is admitted with acute confusion. Whilst being transferred to hospital he had generalised seizure which terminated spontaneously after around 30 seconds. On arrival in the Emergency Department his GCS is 14/15 and he is noted to have a coarse tremor. A diagnosis of lithium toxicity is suspected. Intravenous access is obtained, bloods are taken and a saline infusion is started. Blood results reveal the following: Lithium level 4.2 mmol/l Na+ 136 mmol/l K + 4.6 mmol/l Urea 8.1 mmol/l Creatinine 99 µmol/l Bicarbonate 18 mmol/l What is the most appropriate management?

**A- Arrange haemodialysis**

B- Intravenous magnesium

C- Intravenous bicarbonate

D- Intravenous hypertonic saline

E- Arrange plasma exchange

Q262. A 34-year-old female with a history of anti-phospholipid syndrome is reviewed in clinic. She is on long-term warfarin and her INR has been stable at 3.0 for over 2 years. Measurement from one week ago and today shows values of 1.5 and 1.3 respectively. Which one of the following medications is most likely to be responsible?

A- Ciprofloxacin

B- Fluconazole

C- Sodium valproate

**D- Carbamazepine**

E- Cimetidine

Q263. What is the mechanism of action of aminophylline?

A- Leukotriene receptor antagonists

B- Beta 2-adrenoceptor agonist

C- Muscarinic receptor antagonist

**D- Phosphodiesterase inhibitor**

E- Beta 2-adrenoceptor antagonist

Q264. A 52-year-old man with a history of epilepsy is reviewed. Since having his medication change he has experienced a 'numbness' of his hands and feet. On examination he has reduced sensation in a glove-andstocking distribution associated with a reduced ankle reflex. He is also noted to have lymphadenopathy in the cervical and inguinal region and some bleeding around the gums. Which one of the following medications is he most likely to have been taking?

A- Carbamazepine

**B- Phenytoin**

C- Topiramate

D- Sodium valproate

E- Lamotrigine

## **Chapter 6 Clinical Sciences**

Q1. Acute intermittent porphyria is due to a defect in:

A- ALA synthetase

B- PPG oxidase

C- Uroporphyrinogen decarboxylase

D- Ferrochelatase

**E- Porphobilinogen deaminase**

Q2. As part of a research project you are trying to ascertain whether the use of dummies in infants is linked to sudden infant death syndrome. What is the most appropriate form of study design?

A- Randomised controlled trial

B- Cross-over trial

C- Cross-sectional survey

**D- Case-control study**

E- Cohort study

Q3. Which of the following is deficient in patients with hereditary angioedema?

**A- C1-INH**

B- C3

C- Heat shock protein type 1

D- C6

E- Histamine degradation protein (HDP)

Q4. Patients with deficiencies of which one of the following complement proteins are most predisposed to disseminated meningococcal infection?

A- C1

B- C2

C- C3

D- C4

**E- C5**

Q5. Which of the following conditions is inherited in an autosomal recessive fashion?

A- Hypokalaemic periodic paralysis

B- Adult polycystic disease

C- Huntington's disease

**D- Friedreich's ataxia**

E- Ehlers-Danlos syndrome

Q6. Which one of the following occurs during reverse transcriptase polymerase chain reaction?

A- Proteins are converted to DNA

B- DNA is converted to RNA

C- Used to amplify DNA

**D- RNA is converted to DNA**

E- Proteins are converted to RNA

Q7. Which of the following is true regarding rheumatoid factor?

**A- It is usually an IgM molecule reacting against patient's own IgG**

B- High titres are not associated with severe disease

C- Rose-Waaler test involves agglutination of IgG coated latex particles

D- 80% of SLE patients are RF positive

E- 50% of patients with Sjogren's syndrome are RF positive

Q8. A 19-year-old female with a history of anorexia nervosa is admitted to hospital. Her BMI has dropped to 16. She has agreed to be fed by nasogastric tube. Which one of the following electrolyte disturbances is most likely to occur?

A- Hyperkalaemia

B- Hypocalcaemia

C- Metabolic acidosis

**D- Hypophosphataemia**

E- Hypermagnesemia

Q9. Which one of the following statements regarding gastrin is true?

A- Secreted by D cells in the stomach

B- Secretion is inhibited by high antral pH

C- Reduces acid secretion in the stomach

**D- Increases gastric motility**

E- Distension of the stomach inhibits secretion

Q10. A case-control study is designed to investigate whether being exposed to passive smoking as a child is a risk factor for asthma. Two hundred patients with asthma are recruited. Of these 200, 40 report either one or both parents smoking in the house when they were a child. A further 200 controls who do not have asthma are recruited. Of these people 20 report that one or both parents smoked in the house. What is the odds ratio of asthmatics having been exposed to passive smoking as a child?

**A- 2.25**

B- 0.66

C- 0.5

D- 1.5

E- 4

Q11. A randomised controlled trial compares two drugs used in the initial management of rheumatoid arthritis. After being assigned to the randomised groups a number of patients drop out due to adverse effects of the medication. How should the data be analysed?

A- Recruit more patients

B- For each patient who drops out, remove a patient from the other randomised group

**C- Include the patients who drop out in the final data set**

D- Remove patients who drop out from final data set

E- Abandon the trial if more than 5% of patients drop out

Q12. A rapid finger-prick blood test to help diagnosis deep vein thrombosis is developed. Comparing the test to current standard techniques a study is done on 1,000 patients: DVT present DVT absent New test positive 200 100 New test negative 20 680 What is the specificity of the new test?

A- 680/880

B- 200/220

**C- 680/780**

D- 680/700

E- 200/300

Q13. Which one of the following would invalidate the use of the Student's ttest when performing a significance test?

A- Using it with unpaired data

**B- Using it with data that is not normally distributed**

C- Using it with data that has a small sample size

D- Using it to test whether the slope of a regression line differs significantly from 0

E- Using it to test a null hypothesis

Q14. A study is carried out to assess the potential of hip protectors to reduce femoral neck fractures in elderly nursing home patients. The average age of the patients was 82 years. Over a two-year period 800 patients were recruited and assigned randomly either to the hip protector group or standard care group. The results: Hip protector group: 400 patients- 10 of whom had a femoral neck fracture over the two year period Control group: 400 patients- 20 of whom had a femoral neck fracture over the two year period What is the absolute risk reduction?

**A- 0.025**

B- 0.05

C- 2

D- 10

E- 0.5

Q15. You are reviewing a new study on the benefit of omega-3 fish oils in patients with established ischaemic heart disease. What does the power of the study equate to?

A- = 1 / p value

B- = standard deviation / square root of sample size

**C- = 1- probability of making a type II error**

D- = 1- probability of making a type I error

E- = 1 / probability of making a type I error

Q16. Each one of the following is associated with hyperkalaemia, except:

A- Rhabdomyolysis

**B- Carbenoxolone**

C- Acute renal failure

D- Ciclosporin

E- Addison's

Q17. A 35-year-old woman is admitted to the Emergency Department following a deliberate overdose of 50 paracetamol tablets around 10 hours ago. On admission she complains of abdominal pain and lethargy. Her prothrombin time is elevated and arterial blood gases show that she is developing a metabolic acidosis. An urgent transfer to the tertiary liver transplant unit is arranged. What is the main pathological process seen in the hepatocytes of such patients with fulminant hepatitis?

A- Apoptosis

B- Fibrosis

C- Ischaemia

D- Senescence

**E- Necrosis**

Q18. A 72-year-old woman presents with polyuria and polydipsia. Investigations reveal the following: Fasting glucose 4.5 mmol/l Calcium 2.88 mmol/l Phosphate 0.75 mmol/l Parathyroid hormone 6 pmol/L (normal range = 0.8- 8.5) What is the most likely underlying diagnosis?

A- Myeloma

B- Sarcoidosis

**C- Primary hyperparathyroidism**

D- Vitamin D excess

E- Osteomalacia

Q19. The nicotinic acetylcholine receptor is an example of a:

**A- Ligand-gated ion channel**

B- Tyrosine kinase receptor

C- Guanylate cyclase receptor

D- G protein-coupled receptor

E- Intracellular receptor

Q20. A 72-year-old woman who takes bendroflumethiazide for hypertension is admitted to the Emergency Department. Admission bloods show the following: Na+ 131 mmol/l K + 2.2 mmol/l Urea 3.1 mmol/l Creatinine 56 µmol/l Glucose 4.3 mmol/l Which one of the following ECG features is most likely to be seen?

A- Short PR interval

B- Short QT interval

C- Flattened P waves

D- J waves

**E- U waves**

Q21. Vitamin D causes which one of the following:

**A- Increased plasma phosphate**

B- Decreased plasma calcium

C- Decreased osteoclastic activity

D- Decreased gut absorption of calcium

E- Decreased renal tubular absorption of calcium

Q22. Which one of the following is least associated with hypercalcaemia?

A- Sarcoidosis

B- Primary hyperparathyroidism

C- Thiazide diuretics

D- Squamous cell lung cancer

**E- Monoclonal gammopathy of uncertain significance**

Q23. Which one of the following would shift the oxygen dissociation curve to the left?

**A- Carboxyhaemoglobin**

B- Acidosis

C- Raised pCO2

D- Pyrexia

E- Raised 2,3-DPG levels

Q24. A new test to screen for pulmonary embolism (PE) is used in 100 patients who present to the Emergency Department. The test is positive in 30 of the 40 patients who are proven to have a PE. Of the remaining 60 patients, only 5 have a positive test. What is the sensitivity of the new test?

A- 8.33%

B- 30%

C- 40%

D- 66.66%

**E- 75%**

Q25. Which one of the following serum proteins is most likely to increase in a patient with severe pneumococcal pneumonia?

A- Transferrin

B- Transthyretin

**C- Ferritin**

D- Albumin

E- Cortisol binding protein

Q26. A 79-year-old man is admitted with congestive cardiac failure. Bloods on admission show: BNP 354 pg/ml Which one of the following would result from elevated BNP levels?

A- Decreased sodium diuresis

B- Vasoconstriction of the coronary arteries

**C- Inhibition of the renin-angiotensin-aldosterone system**

D- Vasoconstriction of the pulmonary vessels

E- Increased sympathetic tone

Q27. Which one of the following causes of primary immunodeficiency is due to a defect in both B-cell and Tcell function?

A- Common variable immunodeficiency

B- Chronic granulomatous disease

**C- Wiskott-Aldrich syndrome**

D- Chediak-Higashi syndrome

E- Di George syndrome

Q28. A 65-year-old man presents with bilateral leg pain that is brought on by walking. His past medical history includes peptic ulcer disease and osteoarthritis. He can typically walk for around 5 minutes before it develops. The pain subsides when he sits down. He has also noticed that leaning forwards or crouching improves the pain. Musculoskeletal and vascular examination of his lower limbs is unremarkable. What is the most likely diagnosis?

A- Inflammatory arachnoiditis

B- Peripheral arterial disease

C- Raised intracranial pressure

**D- Spinal stenosis**

E- Lumbar vertebral crush fracture

Q29. You have been asked to investigate the potential benefit of setting up a service to help patients with multiple sclerosis in the local area. What is the most important factor when determining how many resources will be required?

A- Incidence

B- Bayesian factor

**C- Prevalence**

D- Denominator data

E- P value

Q30. In the Gell and Coombs classification of hypersensitivity reactions scabies is an example of a:

A- Type I reaction

B- Type II reaction

C- Type III reaction

**D- Type IV reaction**

E- Type V reaction

Q31. Which one of the following electrolyte disturbances is most associated with the development of a prolonged QT interval on ECG?

A- Hyponatraemia

**B- Hypocalcaemia**

C- Hyperkalaemia

D- Hypercalcaemia

E- Hypophosphataemia

Q32. Which one of the following statements regarding mitochondrial inheritance is true?

A- Friedreich's ataxia is caused by defects in mitochondrial DNA

B- There is a 50% chance that the female offspring of an affected male will inherit the disease

C- Affected females cannot pass on the disease

D- Most cases of spinocerebellar ataxia are caused by defects in mitochondrial DNA

**E- Poor genotype:phenotype correlation**

Q33. A new drug designed to prevent exacerbations of genital herpes undergoes clinical trials. One hundred patients are given the new drug. During a three month period 10 of the patients have an episode of genital herpes. In the control group there are 300 patients who are given a placebo. In this group 50 people have an exacerbation during the same time period. What is the relative risk of having an exacerbation of genital herpes whilst taking the new drug?

A- 0.8

B- 0.2

C- 1.66

**D- 0.6**

E- 0.06

Q34. A 22-year-old male with a history of familial adenomatous polyposis (FAP) has a total colectomy. What is the mode of inheritance of FAP?

A- Uniparental disomy of chromosome 12

B- Autosomal recessive

C- Uniparental disomy of chromosome 14

**D- Autosomal dominant**

E- X-linked recessive

Q35. Which one of the following statements regarding nitric oxide is incorrect?

**A- Promotes platelet aggregation**

B- Raises intracellular cGMP levels

C- An inducible form of NOS is present in macrophages

D- In sepsis increased levels of NO contribute to septic shock

E- Causes venodilation

Q36. Which of the following statements is true regarding hyponatraemia? renal failure

A- In a dehydrated patient with urinary sodium < 20mmol/L it may be due to the diuretic stage of

B- SIADH typically leads to urine osmolality of < 500 mmol/kg

**C- Hyperlipidaemia may cause pseudohyponatraemia**

D- Cardiac failure and liver cirrhosis may lead to primary hyperaldosteronism

E- It is known to cause a long QT interval

Q37. You are performing a study of blood pressure readings in patients with chronic kidney disease. Assuming that the results are normally distributed, what percentage of values lie within two standard deviations of the mean blood pressure reading?

**A- 95.4%**

B- 5.3%

C- 98.3%

D- 10%

E- 97.5%

Q38. Doxazosin is a:

**A- Alpha-1 antagonist**

B- Alpha-1 agonist

C- Non-selective alpha antagonist

D- Alpha-2 agonist

E- Alpha-2 antagonist

Q39. A new oral-hypoglycaemic is being developed. A number of different study types are considered to demonstrate efficacy in reducing the HbA1c. Which one of the following study designs would require the most patients to produce a significant result?

A- Equivalence trial

B- Non-inferiority trial

**C- Superiority trial**

D- Placebo-controlled trial

E- Study design would not affect the number of patients required

Q40. Which one of the following statements regarding glucagon-like peptide-1 (GLP-1) is incorrect?

A- Secreted in response to an oral glucose load

**B- Increased levels are seen in type 2 diabetes mellitus**

C- Slows gastric emptying

D- Secreted by the small intestine

E- Responsible for the incretin effect

Q41. A cohort study is being designed to look at the relationship between smoking and breast cancer. What is the usual outcome measure in a cohort study?

A- Odds ratio

B- Experimental event rate

**C- Relative risk**

D- Absolute risk increase

E- Numbers needed to harm

Q42. Each one of the following may raise ESR, except:

A- Female sex

B- Systemic lupus erythematous

**C- Polycythaemia**

D- Myeloma

E- Increasing age

Q43. A 25-year-old woman presents for review. She has a history of depression and is currently prescribed citalopram. Despite returning from a recent holiday in Spain she complains of feeling tired all the time. On examination you notice a slightly raised red rash on the bridge of her nose and cheeks. Although she complains of having 'stiff joints' you can find no evidence of arthritis. You order some basic blood tests: Hb 12.7 g/dl Platelets 130 \* 109 /l WBC 3.3 \* 109 /l Na+ 138 mmol/l K + 4.0 mmol/l Urea 3.4 mmol/l Creatinine 77 µmol/l Free T4 12.2 pmol/l TSH 1.25 mu/l CRP 9 mg/l What is the most likely diagnosis?

**A- Systemic lupus erythematosus**

B- Acne rosacea

C- Fibromyalgia

D- Lyme Disease

E- HIV seroconversion illness

Q44. You are speaking to a 24-year-old man who is known to have haemophilia A. He asks you what the chances are of his future children developing haemophilia. What is the correct answer?

**A- Same as background population level**

B- 25%

C- 50%

D- 50% if male, 0% if female

E- 100%

Q45. Which one of the following diseases is most strongly associated with HLA antigen DR4?

A- Ankylosing spondylitis

B- Behcet's disease

C- Reiter's syndrome

**D- Rheumatoid arthritis**

E- Coeliac disease

Q46. A patient is seen in clinic complaining of abdominal pain. Routine bloods show: Na+ 142 mmol/l K + 4.0 mmol/l Chloride 104 mmol/l Bicarbonate 19 mmol/l Urea 7.0 mmol/l Creatinine 112 µmol/l What is the anion gap?

A- 4 mmol/L

B- 14 mmol/L

C- 20 mmol/L

D- 21 mmol/L

**E- 23 mmol/L**

Q47. In the Gell and Coombs classification of hypersensitivity reactions Grave's disease is an example of a:

A- Type I reaction

B- Type II reaction

C- Type III reaction

D- Type IV reaction

**E- Type V reaction**

Q48. A 61-year-old woman is admitted to the Acute Medical Unit as she is generally unwell with muscle twitching. Blood pressure is recorded at 114/78 mmHg, pulse 84/min and she is apyrexial. Blood tests reveal the following: Calcium 1.94 mmol/l Albumin 38 g/l Which one of the following tests is most useful in elucidating the cause of her symptoms?

A- Urea

B- Vitamin D

C- Phosphate

**D- Parathyroid hormone**

E- Magnesium

Q49. Which one of the following statements best describes a type II statistical error?

A- The p value fails to reach statistical significance

B- A study fails to reach an appropriate power

C- The null hypothesis is rejected when it is true

**D- The null hypothesis is accepted when it is false**

E- The alternative hypothesis is rejected when it is false

Q50. Which one of the following clotting factors is not affected by warfarin?

A- Factor II

B- Factor VII

**C- Factor XII**

D- Factor IX

E- Factor X

Q51. Which one of the following is involved in the degradation of polypeptides?

A- Peroxisome

B- Endoplasmic reticulum

**C- Proteasome**

D- Ribosome

E- Golgi apparatus

Q52. A 37-year-old man with a history of alcohol excess is admitted with alcohol-withdrawal seizures to the acute medical unit. Admission bloods show the following: Na+ 137 mmol/l K + 3.0 mmol/l Urea 2.0 mmol/l Creatinine 78 µmol/l Calcium 2.03 mmol/l What other blood abnormality is he also most likely to have?

**A- Hypomagnesaemia**

B- Elevated ammonia levels

C- Hypophosphataemia

D- Partially compensated metabolic alkalosis

E- Raised bilirubin

Q53. A study is designed to assess a new proton pump inhibitor (PPI) in elderly patients who are taking aspirin. The new PPI is given to 120 patients whilst a control group of 240 is given the standard PPI. Over a five year period 24 of the group receiving the new PPI had an upper GI bleed compared to 60 who received the standard PPI. What is the absolute risk reduction?

A- 15%

B- 10%

C- 12

**D- 5%**

E- 20

Q54. Which one of the following statements regarding the power of a study is correct?

**A- Is the probability of rejecting the null hypothesis when it is false**

B- Decreases with increasing sample size

C- Lies within 2 standard deviations of the mean

D- Is the chance a significant p value will be reached

E- Is equal to 1- (the probability of a type I error)

Q55. Immunoglobulin therapy may be indicated in each of the following except:

A- Dermatomyositis

B- Guillain-Barre syndrome

C- Kawasaki disease

D- Idiopathic thrombocytopenic purpura

**E- Thrombotic thrombocytopenic purpura**

Q56. Which one of the following causes of primary immunodeficiency is a T-cell disorder?

A- Chediak-Higashi syndrome

B- Chronic granulomatous disease

C- Common variable immunodeficiency

**D- DiGeorge syndrome**

E- Wiskott-Aldrich syndrome

Q57. A 64-year-old woman who is reviewed due to multiple non-healing leg ulcers. She reports feeling generally unwell for many months. Examination findings include a blood pressure of 138/72 mmHg, pulse 90 bpm, pale conjunctivae and poor dentition associated with bleeding gums. What is the most likely underlying diagnosis?

A- Thyrotoxicosis

B- Vitamin B12 deficiency

**C- Vitamin C deficiency**

D- Diabetes mellitus

E- Sarcoidosis

Q58. Which one of the following best describes the characteristics of a negatively skewed distribution?

A- Median < mode < mean

**B- Mean < median < mode**

C- Mode < mean < median

D- Median < mean < mode

E- Mean < mode < median

Q59. A 14-year-old girl is admitted to the Emergency Department. Over the past hour she has developed a painless, non-pruritic erythematous rash associated with severe angioedema. She has a past medical history of recurrent abdominal pain. Her symptoms fail to respond to adrenaline and she is therefore intubated to protect the airway. She is discharged from ITU after three days. During outpatient follow-up two weeks later a diagnosis of hereditary angioedema is suspected. What is the most appropriate screening test to perform?

A- Serum IgE levels

B- Serum C3 levels

C- Serum tryptase levels

**D- Serum C4 levels**

E- Serum C1-INH levels

Q60. A scientist is investigated potential targets for anti-HIV drugs. What is the role of reverse transcriptase in HIV infection?

A- Inhibits topoisomeras II (DNA gyrase) and topoisomerase IV

B- Prevents supercoiling during replication

C- Unwinds the DNA double helix at the replication fork

**D- Transcribes viral RNA to host DNA**

E- Produces viral RNA in host cells from DNA template

Q61. Which one of the following adrenoceptors cause vasoconstriction and relaxation of GI muscle in response to sympathetic stimulation?

**A- Alpha-1**

B- Alpha-2

C- Beta-1

D- Beta-2

E- Beta-3

Q62. A 66-year-old comes for review. He had a prosthetic aortic valve replacement five years ago for which he is warfarinised. Over the past three months he has been complaining of fatigue and a full blood count was requested: Hb 10.3 g/dl MCV 68 fl Plt 356 \* 109 /l WBC 5.2 \* 109 /l Blood film Hypochromia INR 3.0 An upper GI endoscopy was reported as normal. What is the most appropriate next investigation?

A- Transthoracic echocardiogram

**B- Colonoscopy**

C- Three sets of blood cultures

D- Transoesophageal echocardiogram

E- Reticulocyte count

Q63. What is the mode of inheritance of vitamin D-resistant rickets?

**A- X-linked dominant**

B- Autosomal recessive

C- Autosomal dominant

D- Mitochondrial inheritance

E- X-linked recessive

Q64. A 43-year-old man has a routine medical for insurance purposes. The following result is obtained: Uric acid 622 µmol/l (210- 480) He is well with no significant past medical history. What is the most appropriate test to perform next?

**A- Lipid profile**

B- Thyroid function test

C- Calcium

D- Parathyroid hormone

E- Pyrophosphate levels

Q65. A 27-year-old man is reviewed in a fertility clinic. Semen analysis has revealed azoospermia. On examination at the previous appointment he was noted to be 1.83 metres tall with a body mass index of 25 kg / m^2. A degree of gynaecomastia is noted, testicular volume is around 10ml bilaterally and his visual fields were normal. Which investigation is likely to be diagnostic?

A- FISH analysis of DNA

B- Prolactin level

**C- Karyotype**

D- MRI pituitary

E- PCR analysis of DNA

Q66. A 65-year-old woman is investigated for a 6 week history of worsening shortness of breath, lethargy and weight loss. Her past medical history includes chronic obstructive pulmonary disease, hypertension and she is an ex-smoker. Clinical examination is unremarkable. Investigation results are as follows: Chest x-ray Hyperinflated lung fields, normal heart size Bloods Sodium 131 mmol/l Potassium 3.4 mmol/l Urea 7.2 mmol/l Creatinine 101 µmol/l Hb 10.4 g/dl MCV 91 fl Plt 452 \* 109 /l WBC 3.7 \* 109 /l What is the most appropriate management?

A- Screen for depression

B- Short synacthen test

**C- Urgent referral to the chest clinic**

D- Stop bendroflumethiazide

E- Urgent gastroscopy

Q67. A 60-year-old woman with a history of hypothyroidism and inflammatory arthritis is admitted after slipping on ice and falling over. Some routine blood tests are performed: Na+ 141 mmol/l K + 2.9 mmol/l Chloride 114 mmol/l Bicarbonate 16 mmol/l Urea 5.2 mmol/l Creatinine 75 µmol/l Which one of the following is most likely to explain these results?

**A- Renal tubular acidosis (type 1)**

B- Diabetic ketoacidosis

C- Renal tubular acidosis (type 4)

D- Aspirin overdose

E- Conn's syndrome

Q68. Which one of the following molecules acts as the co-receptor for cells expressing antigens combined with MHC class I molecules?

A- CD4

B- CD2b

C- CD1

**D- CD8**

E- CD2

Q69. You are asked to review some arterial blood gases (ABGs) done on a patient who has recently been admitted to the Emergency Department. The ABGs shown below were taken on air: pH 7.53 pCO2 5.1 kPa pO2 13.9 kPa Which one of the following is the most likely cause?

A- Chronic obstructive pulmonary disease

B- Renal tubular acidosis

C- Mesenteric ischaemia

D- Anxiety

**E- Vomiting**

Q70. Which one of the following is the best definition of the p value?

A- The probability of obtaining a similar result, assuming that the null hypothesis is true

B- The probability that a replicating experiment would not yield the same conclusion

**C- The probability of obtaining a result at least as extreme, assuming that the null hypothesis is true**

D- The probability that the null hypothesis is true

E- The probability of obtaining a result at least as extreme, assuming that the null hypothesis is false

Q71. Which of the following conditions is inherited in an autosomal dominant fashion?

**A- Noonan syndrome**

B- Homocystinuria

C- Cystinuria

D- Congenital adrenal hyperplasia

E- Fanconi anaemia

Q72. A 14-year-old girl presents with a swollen left knee. Her parents state she suffers from haemophilia and has been treated for a right-sided haemarthrosis previously. What other condition is she most likely to have?

**A- Turner's syndrome**

B- Down's syndrome

C- Ataxia telangiectasia

D- Hunter's syndrome

E- Coeliac disease

Q73. Which one of the following statements regarding interleukin 1 (IL-1) is true?

**A- It is released mainly by macrophages/monocytes**

B- It causes vasoconstriction

C- It reduces expression of selectin molecules on the endothelium

D- IL-1 antagonists are currently licensed for use in colorectal cancer

E- It inhibits the release of nitric oxide by the endothelium

Q74. A study looks at the chance of having a myocardial infarction (MI) in patients with known ischaemic heart disease. Group A are given standard treatment. After 5 years 20 of the 100 patients have had a MI. Group B have standard treatment plus a new cardiac drug. After 5 years 10 of the 60 patients have had an MI. What is the odds ratio of having a MI whilst taking the new drug compared to those who do not?

**A- 0.8**

B- 0.83

C- 2

D- 1.2

E- 1.25

Q75. Which one of the following is not associated with hypocalcaemia combined with a raised phosphate level?

A- Chronic renal failure

B- Pseudohypoparathyroidism

C- Hypoparathyroidism

**D- Osteomalacia**

E- Acute rhabdomyolysis

Q76. A 40-year-old man presents with pain in his lower back and 'sciatica' for the past three days. He describes bending down to pick up a washing machine when he felt 'something go'. He now has severe pain radiating from his back down the right leg. On examination he describes paraesthesia over the anterior aspect of the right knee and the medial aspect of his calf. Power is intact and the right knee reflex is diminished. The femoral stretch test is positive on the right side. Which nerve root is most likely to be affected?

A- Common peroneal nerve

B- Lateral cutaneous nerve of the thigh

C- L5

D- L3

**E- L4**

Q77. The muscarinic acetylcholine receptor is an example of a:

A- Ligand-gated ion channel

B- Tyrosine kinase receptor

C- Guanylate cyclase receptor

**D- G protein-coupled receptor**

E- Intracellular receptor

Q78. A 12-year-old girl develops facial swelling and an erythematous itchy rash shortly after being administered the first dose of the HPV vaccine. On arrival the paramedics note a bilateral expiratory wheeze and blood pressure of 80/50 mmHg. In the Gell and Coombs classification of hypersensitivity reactions this is an example of a:

**A- Type I reaction**

B- Type II reaction

C- Type III reaction

D- Type IV reaction

E- Type V reaction

Q79. An endocrinologist performs a study to assess whether a patient's HbA1c level is correlated to their LDL level. Assuming both HbA1c and LDL are normally distributed, which one of the following statistical tests is it most appropriate to perform?

A- Chi-squared test

**B- Pearson's product-moment coefficient**

C- Mann-Whitney test

D- Spearman's rank correlation coefficient

E- McNemar's test

Q80. During which of the following stages of mitosis does chromatin condense to form chromosomes?

A- Telophase

B- Metaphase

**C- Prophase**

D- Interphase

E- Anaphase

Q81. Which one of the following karyotypes is associated with short stature?

**A- 45,XO**

B- 46,YO

C- 46,XO

D- 47,XYY

E- 47,XXY

Q82. T-Helper cells of the Th2 subset typically secrete:

**A- IL-4, IL-5, IL-6, IL-10, IL-13**

B- IFN-gamma, IL-2, IL-3

C- IL-1, IL-6, TNF-alpha

D- IFN-beta, IL-4, IL-8

E- IL-1

Q83. A patient with lung cancer has a Positron Emission Tomography (PET) scan to evaluate possible metastatic disease. What does this type of scan demonstrate?

A- Cellular proliferation

B- Apoptotic activity

**C- Glucose uptake**

D- Vascular supply

E- Tyrosine kinase activity

Q84. How is the left ventricular ejection fraction calculated?

A- End systolic LV volume / end diastolic LV volume

B- End diastolic LV volume / end systolic LV volume

C- End diastolic LV volume / stroke volume

D- End systolic LV volumE- end diastolic LV volume

**E- Stroke volume / end diastolic LV volume**

Q85. Which one of the following is associated with increased lung compliance?

A- Kyphosis

B- Pulmonary oedema

**C- Emphysema**

D- Pulmonary fibrosis

E- Pneumonectomy

Q86. Which cell organelle is involved in the breakdown of oligopeptides?

A- Golgi apparatus

B- Rough endoplasmic reticulum

C- Peroxisome

**D- Lysosome**

E- Smooth endoplasmic reticulum

Q87. Where is CCK secreted from?

**A- I cells in upper small intestine**

B- G cells in stomach

C- K cells in upper small intestine

D- D cells in the pancreas

E- S cells in upper small intestine

Q88. Aldosterone is secreted by the:

A- Juxtaglomerular apparatus

**B- Zona glomerulosa**

C- Posterior pituitary

D- Zona reticularis

E- Zona fasciculata

Q89. A 64-year-old female with a history of rheumatoid arthritis presents with increased difficulty in walking. On examination there is weakness of ankle dorsiflexion and of the extensor hallucis longus associated with loss of sensation on the lateral aspect of the lower leg. What is the most likely diagnosis?

A- Tibial nerve palsy

B- Obturator nerve palsy

**C- Common peroneal nerve palsy**

D- Lateral cutaneous nerve palsy

E- Pudendal nerve palsy

Q90. Where are G protein-coupled receptors located?

A- Nucleus

B- Golgi apparatus

C- Ribosome

**D- Cell membrane**

E- Mitochondria

Q91. A study looks at whether golf actually increases the risk of medial epicondylitis. Sixty people who regularly play golf are matched to sixty people who do not play golf. Thirty of the golfers had developed medial epicondylitis at some point compared to ten of the non-golfers. What is the odds ratio of developing medial epicondylitis for people who play golf?

A- 0.3

B- 3

**C- 5**

D- 2.5

E- 3.33

Q92. A 54-year-old woman is treated with rituximab for non-Hodgkin's lymphoma. What is the target of rituximab?

**A- CD20**

B- CD52

C- Epidermal growth factor receptor

D- CD22

E- Vascular endothelial growth factor receptor

Q93. A 25-year-old man who has been morbidly obese for the past five years is reviewed in the endocrinology clinic. In this patient, which one of the following hormones would increase appetite as levels increase?

A- Leptin

B- Thyroxine

C- Adiponectin

**D- Ghrelin**

E- Serotonin

Q94. A 50-year-old man is reviewed in the neurology clinic. For the past four months he has been experiencing problems with his right shoulder. On examination he has weakness of shoulder abduction and to a lesser extent weak elbow flexion. A small patch of numbness is noted over the deltoid muscle but otherwise sensation is normal. Where is the neurological lesion?

A- C4

**B- C5**

C- C6

D- C7

E- C8

Q95. A 30-year-old man with a history of mitral valve prolapse, recurrent pneumothorax, lower back pain secondary to scoliosis and pectus excavatum is considering starting a family. Given the likely diagnosis, what is the mode of inheritance of this condition?

A- X-linked recessive

B- Mitochondrial

C- Autosomal codominant

D- Autosomal recessive

**E- Autosomal dominant**

Q96. Which one of the following is in direct anatomical contact with the left kidney?

A- Stomach

B- Distal part of small intestine

C- Spleen

**D- Pancreas**

E- Duodenum

Q97. Which one of the following statements regarding relative risk is correct?

A- Relative risk = 1- absolute risk reduction

**B- It is the usual outcome measure of cohort studies**

C- Risk may be defined as the odds of an outcome happening

D- Relative risk = 1 / odds ratio

E- If the risk ratio is less than 1 then the rate of an event is increased compared to controls

Q98. The parents of a 3-year-old boy with cystic fibrosis ask for advice. They are considering having more children. What is the chance that their next child will be a carrier of the cystic fibrosis gene?

**A- 50%**

B- 100%

C- 1 in 25

D- 25%

E- 66.6%

Q99. What does troponin T bind to?

**A- Tropomyosin**

B- Actin in thin myofilaments

C- Protein kinase C inhibitors

D- Calcium ions

E- T-tubule membrane wall

Q100. A study looks at the use of bisphosphonates in controlling the pain associated with bone metastases. One hundred and twenty patients (120) are enrolled in the study, 40 of whom are given conventional treatment with NSAIDs and radiotherapy. Of the 80 patients who were given bisphosphonates, 40 received significant pain relief. What is the odds of patient with bone metastases receiving significant pain relief from bisphosphonates?

A- 0.33

B- 3

C- 2

**D- 1**

E- 0.5

Q101. Which one of the following would shift the oxygen dissociation curve to the right?

A- Alkalosis

B- HbF

C- Low 2,3-DPG levels

**D- High pCO2 levels**

E- Methaemoglobin

Q102. What level of evidence does a study offer which is obtained from a meta-analysis of randomised controlled trials?

**A- Ia**

B- Ib

C- IIa

D- IIb

E- IV

Q103. Vital capacity may be defined as:

A- Volume inspired or expired with each breath at rest

B- Volume of air remaining after maximal expiration

C- Maximum volume of air that can be inspired at the end of a normal tidal inspiration

D- Maximum volume of air that can be expired at the end of a normal tidal expiration

**E- Maximum volume of air that can be expired after a maximal inspiration**

Q104. A 34-year-old man is reviewed in clinic. He has recently had his annual echocardiogram showing no change in the dilation of his aortic sinuses or mitral valve prolapse. You note he is tall with pectus excavatum and arachnodactyly. His condition is primarily due to a defect in which one of the following proteins?

A- Polycystin-1

**B- Fibrillin**

C- Type IV collagen

D- Type I collagen

E- Elastin

Q105. A 31-year-old woman is diagnosed with familial hypercholesterolaemia. Genetic testing shows that she is heterozygous for the condition. You discuss the possibility of screening her relatives. What is the chance her brother will also be affected?

**A- 50%**

B- 66%

C- 25%

D- 100%

E- 0%

Q106. A small study is designed to look at the link between drinking alcohol and liver cirrhosis. One hundred patients with liver cirrhosis were questioned and it was found that 80 of them drank excessive alcohol. As a control, one hundred patients without liver cirrhosis were questioned and only 20 of these patients drank excessively. What is the odds ratio of developing liver cirrhosis for people who drink excessively compared to those who do not?

A- 2

B- 4

C- 0.25

**D- 16**

E- 3

Q107. Cystic fibrosis is due to a defect in the cystic fibrosis transmembrane conductance regulator (CFTR) gene. Which chromosome is this gene located on?

A- Chromosome 3

**B- Chromosome 7**

C- Chromosome 11

D- Chromosome 14

E- Chromosome 15

Q108. A 54-year-old woman is admitted to the Emergency Department following what sounds like an episode of vasovagal syncope. Blood gases on admission show a metabolic acidosis. Blood tests are reported as follows: Na+ 143 mmol/l K + 3.0 mmol/l Chloride 116 mmol/l Bicarbonate 18 mmol/l Urea 4.0 mmol/l Creatinine 88 µmol/l Which one of the following is most likely to explain the metabolic acidosis?

A- Lithium overdose

B- Aspirin overdose

C- Recent myocardial infarction

D- Alcoholic ketoacidosis

**E- Ureterosigmoidostomy**

Q109. Which one of the following statements regarding the normal menstrual cycle is incorrect?

A- A number of follicles develop in the follicular phase under the influence of FSH

B- The luteal phase is also known as the secretory phase

C- The follicular phase follows menstruation and occurs around day 5- 13

**D- A surge of FSH causes ovulation**

E- Progesterone levels are low in the follicular phase

Q110. You are advising a patient who has recently been diagnosed with chronic kidney disease stage 4 with regards to her diet. Which one of the following foods should she eat in moderation due to the high potassium content?

**A- Tomatoes**

B- Plums

C- Cranberry juice

D- Grapes

E- Green beans

Q111. Interferon-alpha may be used in the management of each one of the following, except:

A- Metastatic renal cell cancer

B- Hepatitis B

C- Kaposi's sarcoma

D- Hepatitis C

**E- Chronic granulomatous disease**

Q112. Northern blotting is used to:

A- Detect and quantify proteins

B- Amplify DNA

**C- Detect RNA**

D- Detect DNA

E- Amplify RNA

Q113. Where is secretin secreted from?

A- I cells in upper small intestine

B- G cells in stomach

C- K cells in upper small intestine

D- D cells in the pancreas

**E- S cells in upper small intestine**

Q114. Each one of the following is a feature of pseudohypoparathyroidism, except:

A- Short fourth and fifth metacarpals

B- Round face

**C- Normal calcium and phosphate levels**

D- Cognitive impairment

E- Short stature

Q115. A 19-year-old man with a history of learning disabilities and ectopia lentis is diagnosed as having homocystinuria. Supplementation of which one of the following may help improve his condition?

A- Folic acid

B- Niacin

**C- Pyridoxine**

D- Vitamin B7

E- Thiamine

Q116. You are asked to design a study to assess whether living near electricity pylons is a risk factor for childhood leukaemia. What is the most appropriate type of study design?

A- Cross-over trial

B- Cohort study

C- Cross-sectional survey

**D- Case-control study**

E- Randomised controlled trial

Q117. You are a ST1 doctor in medicine. Whilst on-call you review a 60-year-old woman who is known to have COPD. She has been admitted with an infective exacerbation and has not responded to nebulisers and intravenous aminophylline. Her most recent blood gases show a worsening respiratory acidosis. You feel that non-invasive ventilation (NIV) is needed and bleep the on-call physio. After discussing the blood gas results over the phone she says that NIV is not indicated in her opinion and refuses to set it up. What is the most appropriate action?

A- Phone her back in 30 minutes and exaggerate the clinical picture to persuade her to come in

B- Accept her professional opinion and reassess the situation in 30 minutes

C- Set-up the NIV equipment yourself to avoid any further delay

**D- As there is a disagreement on management speak to the consultant on-call**

E- Transfer the patient to another hospital

Q118. Dobutamine is an example of:

A- Alpha-1 agonist

B- Alpha-2 agonist

C- Beta-1 antagonist

D- Beta-2 antagonist

**E- Beta-1 agonist**

Q119. Which one of the following best describes the Hering-Bruer reflex?

**A- Lung distension causing slowing of the respiratory rate**

B- Raised hydrogen ion concentration in the ECF stimulating respiration

C- Low pO2 stimulating the carotid and aortic bodies

D- Lung distension causing increase of the respiratory rate

E- Decreased hydrogen ion concentration in the ECF stimulating respiration

Q120. What is the most common adverse effect experienced by women taking the progestogen only pill?

**A- Irregular vaginal bleeding**

B- Acne

C- Mood swings

D- Reduced libido

E- Weight gain

Q121. Which one of the following causes of primary immunodeficiency is due to a defect in both B-cell and T-cell function?

A- Di George syndrome

B- Chronic granulomatous disease

C- Bruton's congenital agammaglobulinaemia

D- Leukocyte adhesion deficiency

**E- Ataxic telangiectasia**

Q122. Which type of secondary messenger system does adrenaline stimulate?

A- Calcium

B- Protein kinase

C- Phosphoinositide

D- Cyclic AMP

E- Cyclic GMP

Q123. A patient who takes bendroflumethiazide is noted to have a potassium of 3.1 mmol/l. What is the main mechanism causing hypokalaemia in patients taking bendroflumethiazide?

A- Decreased flow rate in the nephron resulting in a decreased potassium gradient

**B- Increased sodium reaching the collecting ducts**

C- Inhibition of renin-angiotensin-aldosterone system secondary to hypovolaemia

D- Decreased sodium reaching the distal convoluted tubule

E- Opening of potassium channel in proximal convoluted tubule

Q124. Each one of the following is seen in Klinefelter's syndrome, except:

A- Small, firm testes

B- Lack of secondary sexual characteristics

C- Infertility

D- Increased incidence of breast cancer

**E- Reduced gonadotrophin levels**

Q125. A 69-year-old female with a history of multiple myeloma is admitted with confusion. The following results are obtained: Na+ 147 mmol/l K + 4.7 mmol/l Urea 14.2 mmol/l Creatinine 102 µmol/l Adjusted calcium 3.9 mmol/l What is the most appropriate initial management?

A- IV 0.45% saline

B- IV zoledronic acid

C- Oral prednisolone

D- IV pamidronate

**E- IV 0.9% saline**

Q126. A 64-year-old man is having a dual chamber pacemaker inserted. The ventricular lead is to be inserted via the coronary sinus. Where does the coronary sinus drain into?

**A- Right atrium**

B- Left ventricle

C- Right ventricle

D- Inferior vena cava

E- Left atrium

Q127. A 57-year-old patient with acute pulmonary oedema is admitted to the ITU department. She has no past medical history of note. A Swan-Ganz catheter is inserted to enable measurement of the pulmonary capillary wedge pressure. Which chamber of the heart does this pressure generally equate to?

A- The difference between the left atrium and right ventricle

B- Left ventricle

**C- Left atrium**

D- Right ventricle

E- Right atrium

Q128. Which one of the following is least recognised to cause a clubbed appearance of the fingers?

A- Graves' disease

B- Empyema

C- Cyanotic congenital heart disease

**D- Coeliac disease**

E- Cystic fibrosis

Q129. A 14-year-old girl is admitted to hospital following a ruptured ectopic pregnancy. She comes from a family of Jehovah's Witnesses. Her haemoglobin on admission is 6.9 g/dl. She consents to a blood transfusion but her mother refuses. What is the most appropriate course of action?

A- Advise the parents she will have to get a High Court injunction in order to stop the transfusion

**B- Give the blood transfusion**

C- Transfer the patient to a hospital run by Jehovah's Witnesses

D- Respect parental wishes and withhold the blood transfusion

E- Ask the hospital lawyer to come in and decide upon the correct course of action

Q130. The chance of a 45-year-old mother giving birth to a child with Down's syndrome is approximately:

A- 1 in 5

B- 1 in 10

**C- 1 in 30**

D- 1 in 100

E- 1 in 500

Q131. Which one of the following statements regarding growth hormone is incorrect?

**A- Doesn't act directly on chondrocytes or osteoblasts**

B- Is an anabolic hormone

C- Is responsible for changes in protein, lipid, and carbohydrate metabolism

D- Is secreted by the somatotroph cells

E- Acts on a transmembrane receptor

Q132. The atrial natriuretic peptide receptor is an example of a:

A- Ligand-gated ion channel

B- Intracellular receptor

**C- Guanylate cyclase receptor**

D- G protein-coupled receptor

E- Tyrosine kinase receptor

Q133. Which one of the following cells secretes the majority of tumour necrosis factor in humans?

A- Neutrophils

**B- Macrophages**

C- Natural killer cells

D- Killer-T cells

E- Helper-T cells

Q134. A new anti-epileptic drug is trialled for children with absence seizures. There are 250 children in the control group and 150 children assigned to take the new drug. After 4 months 100 children in the control group had had a seizure compared to 15 children in the group taking the new medication. What is the relative risk reduction?

A- 4

B- 30%

C- 3.33

**D- 75%**

E- 40%

Q135. You are a ST1 doctor in General Medicine. During an on-call you are in A&E seeing a patient who has a pneumothorax. On arriving you find the A&E ST2 doctor attempting to perform an aspiration. He appears to about to insert the needle at the wrong landmark. What is the most appropriate action? limitations

A- Tell your colleagues about what happened in the mess to ensure they are aware of the doctors

B- Say nothing, stay with the patient and take over when he asks for help

C- Go and get the A&E consultant

D- Say nothing at the time but fill in a clinical incident form

**E- Immediately voice your concerns and ask him to stop**

Q136. Fragile X is associated with each one of the following, except:

**A- Small, firm testes**

B- Mental retardation

C- Hypotonia

D- Short stature

E- Large low set ears

Q137. When establishing a screening programme, which one of the following is not a key criteria as defined by Wilson and Junger?

A- There should be a recognised latent or early symptomatic stage

B- The condition should be an important public health problem

C- The test or examination should be acceptable to the population

D- There should be agreed policy on whom to treat as patients

**E- The condition should be potentially curable**

Q138. A 67-year-old man presents feeling 'generally unwell' and complaining of pain in his back and legs. His wife also reports that he has been slightly confused for the past two weeks. Basic blood tests are ordered: Hb 12.1 g/dl Platelets 411 \* 109 /l WBC 7.6 \* 109 /l Na+ 143 mmol/l K + 5.3 mmol/l Urea 15.7 mmol/l Creatinine 208 µmol/l Bilirubin 20 µmol/l ALP 110 u/l ALT 55 u/l γGT 67 u/l Albumin 31 g/l Total protein 84 g/l Calcium 3.10 mmol/l Phosphate 0.79 mmol/l What is the most likely underlying diagnosis?

**A- Multiple myeloma**

B- Renal cancer with bony metastases

C- Sarcoidosis

D- Primary hyperparathyroidism

E- Prostate cancer with bony metastases

Q139. A 29-year-old man presents with a productive cough, fever and pleuritic chest pain. A chest x-ray shows lobar consolidation and a sputum culture grows Haemophilus influenzae. This is his fourth chest infection in the past seven months. Streptococcus pneumoniae has been grown from the sputum of the previous three episodes. Six-weeks following the latest infection a full blood count, urea and electrolytes, CRP and chest x-ray are all reported as normal. What is the most appropriate next investigation?

**A- Serum immunoglobulins**

B- Spirometry

C- HIV test

D- Colonoscopy

E- Urinalysis

Q140. Which one of the following genetic conditions is the most prevalent in a Caucasian population?

A- Wilson's disease

B- Sickle cell anaemia

C- Cystic fibrosis

D- Alpha-1 antitrypsin

**E- Haemochromatosis**

Q141. Which one of the following best describes the Haldane effect?

**A- Increase in pO2 means CO2 binds less well to Hb**

B- Increasing acidity (or pCO2) means oxygen binds less well to Hb

C- Decreasing acidity (or pCO2) means oxygen binds less well to Hb

D- Raised 2,3-DPG enhances oxygen delivery to the tissues

E- Decrease in pO2 means CO2 binds less well to Hb

Q142. Which one of the following processes is responsible for ketone production during diabetic ketoacidosis?

A- Glycogenolysis

B- Exchange with hydrogen ions in the collecting ducts

C- Gluconeogenesis

D- Decreased plasma bicarbonate levels

**E- Lipolysis**

Q143. What is the main advantage of non-inferiority trials when testing a new drug?

A- Prevents ethical dilemmas

B- Robust results are produced

C- Useful for conditions where there is no proven drug treatment

D- Useful for conditions where there is a high placebo response rate

**E- Small sample size is required**

Q144. You are a ST1 doctor in general medicine. A 19-year-old female who has type 1 diabetes mellitus is admitted with her fourth episode of diabetic ketoacidosis in the past two months. You suspect she runs her sugars high to keep her weight down. She is generally non-compliant and often self-discharges after 24 hours. What is the most appropriate response? incentive to get better control

A- Take her on a tour of the ward showing her patients with amputated legs or those on dialysis as an

**B- Have a chat after the ward round about why she thinks her control is so bad**

C- Write a letter to her GP advising him/her of your concerns

D- Take no action as it is her decision whether she takes her medication or complies with treatment

E- Tell her she is wasting NHS resources and you do not want to see her turn up at your hospital again

Q145. A new blood test is developed to screen for prostate cancer. Trials have shown it has a sensitivity for detecting clinically significant prostate cancer of 80% but a specificity of 60%. What is the likelihood ratio for a positive test result?

A- Cannot be calculated

**B- 2**

C- 4

D- 0.8

E- 0.2

Q146. What is the initial physiological response to the Valsalva manoeuvre?

A- Reduction in cardiac output

B- Reduced mean arterial blood pressure

C- Reduced heart rate

**D- Reduced venous return**

E- Reduction in intrathoracic pressure

Q147. A study is proposed to ascertain whether childhood obesity in girls increases the risk of polycystic ovarian syndrome. What is the most appropriate form of study design?

**A- Cohort study**

B- Case-control study

C- Cross-over trial

D- Randomised controlled trial

E- Cross-sectional survey

Q148. Which one of the following is least likely to cause hypernatraemia?

A- IV saline infusion

B- Hyperosmolar non-ketotic diabetic coma

**C- Digoxin therapy**

D- Diabetes insipidus

E- Dehydration

Q149. A 52-year-old obese lady with type 2 diabetes mellitus is interested in changing her diet. Which one of the following foods has the highest glycaemic index?

**A- Baked potato**

B- Apple

C- Peanut

D- Digestive biscuit

E- Brown rice

Q150. Of the following scenarios, which one would indicate it was inappropriate for the patient to take an airline flight? applied 24 hours ago

A- A 54-year-old woman who had a laparoscopic cholecystectomy 5 days ago

**B- A 17-year-old flying back to the UK who broke his leg whilst skiing in CanadA- Had a plaster cast**

C- A 59-year-old man who had a colonoscopy 2 days ago

D- A 62-year-old man who had an uncomplicated myocardial infarction 3 weeks ago

E- A woman who is 27-weeks pregnant with twins

Q151. Which one of the following statements regarding vitamin D-resistant rickets is false?

A- Management includes the use of high-dose vitamin D supplements

B- Is a X-linked dominant condition

C- X-ray changes include cupped metaphyses

D- Failure to thrive may be seen

**E- Decreased urinary phosphate is characteristic**

Q152. Where is B-type natriuretic peptide mainly secreted from?

A- Atrial myocardium

B- Juxtaglomerular cells

C- Zona glomerulosa

**D- Ventricular myocardium**

E- Hypothalamus

Q153. What is the role of troponin in cardiac muscle?

A- Component of the thick filaments

B- Acts as a lining of the T tubules

C- Anchors thick filament to Z-discs

**D- Component of the thin filaments**

E- Anchors thick and thin filaments together

Q154. A 79-year-old complains of lower urinary tract symptoms. Which one of the following statements regarding benign prostatic hyperplasia is incorrect?

**A- Goserelin is licensed for refractory cases**

B- Side-effects of 5 alpha-reductase inhibitors include ejaculation disorders and gynaecomastia

C- Possible presentations include recurrent urinary tract infection

D- 5 alpha-reductase inhibitors typically decrease the prostate specific antigen level

E- More common in black men

Q155. Which one of the following types of immunoglobulins are responsible for haemolytic blood transfusion reactions?

A- IgD

B- IgE

**C- IgM**

D- IgA

E- IgG

Q156. You review a 29-year-old woman who is recovering from a fracture of the right olecranon. Since the fracture she has noticed that the little finger on her right hand is numb. Which nerve is likely to have been damaged?

**A- Ulnar nerve**

B- Radial nerve

C- Axillary nerve

D- Musculocutaneous nerve

E- Median nerve

Q157. Which one of the following is responsible for the activation of aciclovir?

A- Guanosine kinase

B- Protease

C- Reverse transcriptase

D- DNA polymerase

**E- Thymidine kinase**

Q158. A study looks at adding a new antiplatelet drug in addition to aspirin to patients who've had a stroke. One hundred and seventy patients are enrolled for the study with 120 receiving the new drug in addition to aspirin and the remainder receiving just aspirin. After 5 years 18 people who received the new drug had a further stroke compared to 10 people who just received aspirin. What is the number needed to treat?

A- 8

B- 15

C- 1.8

**D- 20**

E- 10

Q159. A 68-year-old man is admitted with haematemesis. A gastroscopy performed as an inpatient shows a carcinoma which is confirmed on biopsy. Who is the most appropriate person to inform the patient of the diagnosis?

A- The F2 doctor on the ward who has most contact with the patient

B- The doctor who performed the gastroscopy

C- His GP following discharge

**D- The consultant in-charge of his care**

E- His next-of-kin after you have told him/her

Q160. A 90-year-old man is admitted to hospital. He is taking no regular medication. On admission his blood pressure is 170/68 mmHg. Which one of the following is the main factor which accounts for the large pulse pressure?

A- Calcified brachial arteries

B- Autonomic dysfunction

**C- Reduced aortic compliance**

D- Reduced left ventricular ejection fraction

E- Reduced circulating volume

Q161. What is the typical vital capacity in a male?

A- 300 ml

B- 500 ml

C- 1,500 ml

D- 2,500 ml

**E- 4,500 ml**

Q162. Which one of the following techniques would be most suitable to detect and quantify a viral protein?

A- Polymerase chain reaction

B- Northern blotting

**C- Western blotting**

D- Southern blotting

E- Eastern blotting

Q163. Which one of the following significance tests is used to analyse data which is measured and follows a normal distribution?

A- Chi-squared test

B- Spearman's rank correlation coefficient

C- Wilcoxon matched-pairs

D- Mann-Whitney test

**E- Student's t-test**

Q164. Which one of the following statements regarding leptin is incorrect?

**A- Is produced mainly by the hypothalamus**

B- Stimulates the release of melanocyte-stimulating hormone

C- Obese patients have higher leptin levels

D- Plays a key role in the regulation of body weight

E- High levels decrease appetite

Q165. A study compares the sensitivity of two tests for colorectal cancer. The first test has a sensitivity of 85% whilst the second test has a sensitivity of 91%. What type of significance test should be used for comparing the two results?

A- Wilcoxon matched-pairs

B- Mann-Whitney test

C- Student's t-test

**D- Chi-squared test**

E- Pearson's test

Q166. Which one of the following is not a risk factor for the development of pre-eclampsia?

A- Previous history of pre-eclampsia

B- Body mass index of 34 kg/m^2

C- Age of 42 years

D- Multiple pregnancy

**E- Multiparity**

Q167. Which of the following is true regarding endothelin?

A- It is a potent vasodilator

B- It is produced mainly by pulmonary tissue

C- It acts on target cells by stimulating guanylate cyclase

D- Release is stimulated by nitric oxide

**E- Endothelin antagonists are useful in primary pulmonary hypertension**

Q168. Which one of the following radiotracers is used during cardiac Positron Emission Tomography (PET) scans?

A- Gallium

**B- Fluorodeoxyglucose**

C- Technetium (99mTc)

D- Thallium

E- Fluorine-18

Q169. Which of the following conditions is NOT inherited in a X-linked recessive fashion:

**A- Myotonic dystrophy**

B- G6PD deficiency

C- Haemophilia B

D- Colour blindness

E- Fabry's disease

Q170. Which one of the following conditions is NOT an autosomal recessive condition?

A- Haemochromatosis

B- PKU

**C- Hereditary spherocytosis**

D- Tay-Sach's

E- Friedreich's ataxia

Q171. Which one of the following is least associated with homocystinuria?

**A- Recurrent renal stones**

B- Downwards lens dislocation

C- Deep vein thrombosis

D- Arachnodactyly

E- Learning difficulties

Q172. Which one of the following foodstuff contains the most energy per unit weight?

A- Pasta

B- Cheese

**C- Butter**

D- Peanuts

E- White rice

Q173. You are a ST1 doctor on a medical ward. It is 5:15pm and you were scheduled to finish your day 15 minutes ago. Today you're particularly keen to leave as it is your wife's birthday and you've arranged a night out. One of the staff nurses bleeps you as Mr Jones, one of your patients, has become drowsy. He was admitted two days ago to your ward with an exacerbation of COPD. What is the most appropriate course of action?

A- Bleep the on-call doctor yourself and ask him to review

B- Tell her to try decreasing his oxygen to 24% and see how he is in 30 minutes

C- Tell the nurse to bleep the on-call doctor

D- Tell the nurse to bleep the on-call doctor + fill in a clinical incident form as you bleeped after hours

**E- Go and assess the patient yourself**

Q174. Which one of the following statements regarding the use of the p-value in statistical hypothesis testing is correct?

A- The p-value is the probability that the null hypothesis is true

B- 1- (p-value) is the probability of the alternative hypothesis being true

**C- The null hypothesis is rejected if the p-value is smaller than or equal to the significance level**

D- The p-value is the probability that a replicating experiment would not yield the same conclusion

E- The p-value is equal to the probability of making a type II error

Q175. A 54-year-old woman is admitted to the Medical Admissions Unit following a collapse. Bloods taken on admission show the following: Magnesium 0.40 mmol/l Which one of the following factors is most likely to be responsible for this result?

A- Excessive resuscitation with intravenous saline

**B- Frusemide therapy**

C- Digoxin therapy

D- Rhabdomyolysis

E- Hypothermia

Q176. Each one of the following is seen in Wiskott-Aldrich syndrome, except:

A- Thrombocytopenia

B- Recurrent chest infections

C- X-linked recessive inheritance

D- Mutation in the WASP gene

**E- Psoriasis**

Q177. Why do patients with chronic kidney disease have a raised phosphate level?

**A- Decreased renal excretion**

B- Increased gut absorption

C- Hypervitaminosis D

D- Primary hyperparathyroidism

E- Decreased 25-alpha hydroxylation of vitamin D

Q178. Which of the following statements is true regarding the standard polymerase chain reaction (PCR)?

A- Restriction endonuclease enzymes are applied to DNA fragments prior to electrophoresis

B- PCR use is limited by its relatively low sensitivity

**C- A thermostable DNA polymerase is required**

D- PCR is currently limited to prenatal diagnosis and forensics

E- A single DNA oligonucleotide primer is necessary

Q179. Which one of the following statements regarding galactosaemia is incorrect?

A- Autosomal recessive inheritance

B- May cause cataracts

C- Caused by the absence of galactose-1-phosphate uridyl transferase

D- May cause jaundice

**E- May cause peripheral neuropathy**

Q180. Looser's zones x-ray are most characteristically associated with which one of the following conditions?

A- Primary hyperparathyroidism

B- Hypoparathyroidism

**C- Osteomalacia**

D- Paget's disease

E- Osteoporosis

Q181. Which of the following statements is true regarding X-linked recessive inheritance?

**A- A female child of a heterozygous female carrier has a 50% chance of being a carrier**

B- An example is Friedreich's ataxia

C- 50% of the male offspring of affected males will manifest the disease

D- An affected child's uncle on the paternal side will also manifest the disease

E- 50% of the female offspring of affected males will be carriers

Q182. A 61-year-old female who has recently emigrated from the Indian subcontinent presents with muscle weakness. Bloods reveal a low serum calcium. A diagnosis of osteomalacia is suspected. Which one of the following, per average serving, provides the best source of vitamin D?

A- Lentils

B- Sunflower seeds

C- Salmon

**D- Cod liver oil**

E- Milk

Q183. You are asked for advice from a local GP. He has received the following blood results for one of his patients, a 50-year-old non-smoker. Na+ 130 mmol/l K + 4.2 mmol/l Bicarbonate 23 mmol/l Urea 4.8 mmol/l Creatinine 71 µmol/l Which one of his medications is most likely to explain this result?

A- Fluoxetine

B- Pioglitazone

C- Methotrexate

D- Losartan

E- Nicorandil

Q184. Which one of the following cell types secretes the majority of pulmonary surfactant?

**A- Type II pneumoncytes**

B- Kupffer cells

C- Type I pneumoncytes

D- Macrophages

E- Elastocytes

Q185. Which one of the following statements concerning altitude related disorders is true?

A- Symptoms typically start to develop above 1,500m

B- Physical fitness protects against altitude related disorders

C- High altitude pulmonary oedema should be treated with frusemide first-line

**D- Acute mountain sickness is generally a self-limiting condition**

E- Symptoms of acute mountain sickness develop within 4 hours of gaining altitude

Q186. Which one of the following features is not associated with Turner's syndrome?

A- Short stature

B- High-arched palate

C- Coarctation of the aorta

D- Webbed neck

**E- Secondary amenorrhoea**

Q187. A 68-year-old woman presents with lethargy and generalised aches. As part of a blood screen the following results are obtained: Calcium 2.83 mmol/l Albumin 42 g/l ESR 26 mm/hr What is the most likely cause of these blood results?

A- Multiple myeloma

B- Sarcoidosis

C- Normal

D- Breast cancer metastases

**E- Primary hyperparathyroidism**

Q188. A study looks at whether a new oral treatment for patients with heart failure can prevent hospital admissions. When reviewing the data how should it be decided if the test was statistically significant?

A- p-value < 2 standard deviates from mean

B- p-value < (1- type II error)

**C- p-value < significance level**

D- p-value < power

E- p-value < 0.01

Q189. Which of the following statements is true regarding autosomal dominant inheritance? disease

A- Individuals who are symptomatic of the disease always have parents who are symptomatic of the

B- Only heterozygotes manifest disease

C- 50% of children will be carriers

D- Responsible for the majority of enzyme deficiency disorders

**E- The risk remains the same for each successive pregnancy**

Q190. Which one of the following statements regarding hypocalcaemia is incorrect?

A- Most features are a result of neuromuscular excitability

B- Chronic hypocalcaemia may cause cataracts

C- Perioral paraesthesia is seen

**D- Chvostek's sign is more sensitive and specific than Trousseau's sign**

E- Prolonged QT interval is seen

Q191. Each one of the following features is seen in phenylketonuria, except:

A- Learning difficulties

B- Seizures

C- Eczema

**D- Recurrent infections**

E- 'Musty' urine

Q192. Which one of the following statements is true regarding monoclonal antibodies? coronary interventions

A- They are produced by the polymerase chain reaction

B- Infliximab is useful in chronic lymphocytic leukaemia

C- A hybridoma is a combination of human spleen cells and mouse B-cells

**D- The constant region of the antibody is human in origin**

E- Alemtuzumab is used in the prevention of ischaemic events in patients undergoing percutaneous

Q193. A study is designed to look at the efficacy of a mandible advancement device in reducing snoring. The severity of snoring was assessed by the partner using a 10 point scale before and after using the device. Fifty people were involved in the study. What is the most appropriate statistical test to apply to this data?

A- Unpaired Student's t-test

B- Pearson's product-moment coefficient

**C- Wilcoxon signed-rank test**

D- Chi-squared test

E- Mann-Whitney test

Q194. A 33-year-old pregnant woman presents for advice. She is known to have polycystic kidney disease but is currently well. Her father also has polycystic kidneys and is on dialysis . What is the chance her child will also have the disease?

A- 50% if male

**B- 50%**

C- 25%

D- 0%

E- 100%

Q195. Which one of the following statements is true regarding interferon? relapsing-remitting multiple sclerosis

A- Interferon-beta is produced by leucocytes

**B- Interferon-alpha and interferon-beta bind to the same type of receptor**

C- Interferon-gamma has stronger antiviral action than interferon-alpha

D- Interferon-alpha has been shown to reduce the frequency of exacerbations in patients with

E- Interferon-gamma has a role in chronic hepatitis C

Q196. A nurse who is known to have an allergy to latex develops a widespread urticarial rash and facial oedema shortly after eating lunch. Which food is she most likely to have consumed?

A- Orange

B- Apple

C- Grapes

D- Pear

**E- Banana**

Q197. A study is performed to find the normal reference range for IgE levels in adults. Assuming IgE levels follow a normal distribution, what percentage of adults will have an IgE level higher than 2 standard deviations from the mean?

A- 1.25%

**B- 2.3%**

C- 1.96%

D- 5%

E- 0.5%

Q198. An elderly patient with a history of atrial fibrillation develops torsades de pointes shortly after being started on sotalol. What effect does sotalol have on the cardiac cell membrane to make this more likely?

A- Blockage of sodium channels

B- Opening of potassium channels

**C- Blockage of potassium channels**

D- Opening of calcium channels

E- Opening of sodium channels

Q199. Which one of the following diseases is most strongly associated with HLA antigen DR2?

A- Haemochromatosis

B- Type 1 diabetes mellitus

**C- Goodpasture's syndrome**

D- Behcet's disease

E- Coeliac disease

Q200. Patients with deficiencies of which one of the following complement protein(s) are predisposed to immune complex diseases?

A- C1-INH

**B- C1q, C1rs, C2, C4**

C- C5-9

D- C3

E- C3bBb

Q201. Which of the following conditions is not caused by a trinucleotide repeat expansion?

A- Fragile X syndrome

B- Huntington's

**C- Ataxia telangiectasia**

D- Myotonic dystrophy

E- Friedreich's ataxia

Q202. Each one of the following causes of hyponatraemia is associated with a urinary sodium of less than 20 mmol/L, except:

A- Diarrhoea

B- Psychogenic polydipsia

C- Burns

D- Secondary hyperaldosteronism

**E- Syndrome of inappropriate ADH**

Q203. A study is designed to assess the efficacy of a new anti-hypertensive medication. Two groups of patients are randomly assigned, one to take the established drug for 3 months whilst the other takes the new drug for 3 months. Blood pressure is measured before and after the intervention. There is then a period off medication for 1 month. After this period has elapsed the medication that the groups receive is swapped around and again blood pressure is measured before and 3 months later. The difference in blood pressure after the respective medications is calculated for each patient. Which one of the following significance tests is it most appropriate to apply?

A- Student's unpaired t-test

**B- Student's paired t-test**

C- Pearson's test

D- Mann-Whitney test

E- Chi-squared test

Q204. Which one of the following is the most common genetic cause of Prader-Willi syndrome?

**A- Microdeletion of the paternal 15q11-13**

B- Maternal uniparental disomy of chromosome 15

C- Paternal uniparental disomy of chromosome 15

D- Microdeletion of the maternal 15q11-13

E- Trisomy 18

Q205. A middle-aged man is diagnosed with nasopharyngeal carcinoma. What type of virus family is associated with this malignancy?

A- Reovirus

**B- Herpesvirus**

C- Parvovirus

D- Adenovirus

E- Hepadnaviridae

Q206. A new biochemical marker has been found which is increased in mothers who are carrying fetuses with Down's syndrome. The new blood test is trialled in 1,000 women over the age of 35 years. Of these women 20 were found to be carrying a fetus with Down's syndrome as assessed using standard measures. The new test was positive in 15 of the 20 cases but was also positive in 30 of the remaining 980 women. What is the positive predictive value of the test?

A- 0.66

B- 950/980

**C- 0.33**

D- 0.8

E- 0.5

Q207. Each one of the following statements regarding atrial natriuretic peptide are true, except:

A- Lowers blood pressure

B- Degraded by endopeptidases

C- Promotes excretion of sodium

**D- Secreted mainly by the left atrium**

E- Antagonises actions of angiotensin II and aldosterone

Q208. A young boy is diagnosed as having DiGeorge syndrome. Which one of the following infections is he most at risk from, secondary to his immune system dysfunction?

A- Klebsiella pneumoniae

B- Haemophilus influenzae type b

**C- Cryptococcus neoformans**

D- Neisseria meningitidis

E- Salmonella typhi

Q209. Which of the following physiological effects would be expected following administration of atropine?

A- Bradycardia + mydriasis

B- Tachycardia + miosis

C- Bradycardia + salivation

D- Bradycardia + miosis

**E- Tachycardia + mydriasis**

Q210. You are a ST1 doctor working on a medical ward. You are struggling to cope with the workload and often leave the ward late. Who is the most appropriate action to take?

A- Take time off-sick until the situation is sorted to protect patient care

B- Speak to the medical director

C- Arrive one-hour early every morning to give yourself extra time

**D- Speak to your consultant**

E- Speak to the postgraduate dean

Q211. Which one of the following conditions is NOT an autosomal dominant condition?

A- Retinoblastoma

B- Tuberose sclerosis

C- Achondroplasia

D- Myotonic dystrophy

**E- Albinism**

Q212. Which one of the following causes of primary immunodeficiency is due to a defect in B-cell function?

A- Di George syndrome

B- Chediak-Higashi syndrome

**C- Common variable immunodeficiency**

D- Chronic granulomatous disease

E- Wiskott-Aldrich syndrome

Q213. Which of the following is most likely to cause hypokalaemia associated with alkalosis?

A- Acetazolamide

B- Partially treated diabetic ketoacidosis

C- Diarrhoea

**D- Cushing's syndrome**

E- Renal tubular acidosis

Q214. Which one of the following statements is true regarding cytoplasmic anti-neutrophil cytoplasmic antibodies (cANCA)?

A- Targeted against myeloperoxidase

**B- Associated with Wegener's granulomatosis**

C- Can be used to monitor activity in autoimmune haemolytic anaemia

D- Is more commonly seen in ulcerative colitis than perinuclear ANCA

E- Positive in > 90% of hepatitis C associated vasculitis

Q215. Which one of the following is most commonly secreted by T-helper cells subset 2 (Th2 cells) ?

A- Interleukin 2

B- Tumour necrosis factor

C- Interferon gamma

**D- Interleukin 4**

E- Interleukin 3

Q216. What is the correct formula to calculate the negative predictive value of a screening test? (TP = true positive; FP = false positive; TN = true negative; FN = false negative)

**A- TN / (TN + FN)**

B- TP / (TP + FP)

C- TN / (TN + FP)

D- Sensitivity / (1- specificity)

E- TP / (TP + FN )

Q217. A study looks at the use of amoxicillin in the treatment of acute sinusitis compared to placebo. The following results are obtained: Total number of patients Number who achieved resolution of symptoms at 7 days Amoxicillin 100 60 Placebo 75 30 What is the odds ratio a patient achieving resolution of symptoms at 7 days if they take amoxicillin compared to placebo?

A- 1.5

B- 0.5

**C- 2.25**

D- 0.6

E- 1.66

Q218. Where is somatostatin secreted from?

**A- D cells in the pancreas**

B- I cells in upper small intestine

C- K cells in upper small intestine

D- S cells in upper small intestine

E- G cells in stomach

Q219. The fasting glucose for a patient is reported as follows: Glucose (fasting) 6.3 mmol/l What is the most likely underlying pathophysiological change?

A- Beta-cell hyperplasia

B- Beta-cell atrophy

C- Muscle insulin resistance

**D- Hepatic insulin resistance**

E- Adipose tissue insulin resistance

Q220. A 23-year-old man is admitted with sepsis. Blood cultures are reported as follows: Neisseria gonorrhoeae Which of the following complement proteins is the patient most likely to deficient in?

A- C1q, C1rs, C2, C4

B- C3a + C5a

**C- C5-9**

D- C4

E- C2

Q221. Which one of the following is least associated with Reye's syndrome?

A- Hypoglycaemia

B- Preceding aspirin use

**C- Purpuric skin lesions**

D- Seizures

E- Preceding viral infection

Q222. A 16-year-old male is reviewed in the endocrinology clinic due to lack of pubertal development. On examination his testes are undescended and there is only scanty pubic hair. What is the most likely diagnosis?

A- Down's syndrome

**B- Kallman's syndrome**

C- Dubin-Johnson syndrome

D- Turner's syndrome

E- Klinefelter's syndrome

Q223. Which one of the following statements regarding significance tests is incorrect?

A- Parametric data is usually normally distributed

B- Student's t-test may be paired on unpaired

C- Pearson's product-moment coefficient is used to assess correlation between two variables

**D- Chi-squared test is used to compare parametric data**

E- Paired data refers to data obtained from a single group of patients

Q224. Which cell organelle is involved in the synthesis of lipids?

A- Golgi apparatus

**B- Smooth endoplasmic reticulum**

C- Ribosome

D- Rough endoplasmic reticulum

E- Nucleolus

Q225. Which one of the following features is least associated with zinc deficiency?

A- Acrodermatitis

B- Alopecia

C- Short stature

D- Perioral dermatitis

**E- Gingivitis**

Q226. Which one of the following features is most likely to be seen following facial nerve paralysis?

**A- Hyperacusis**

B- Hyperlacrimation

C- Hyperesthesia

D- Hyperalgesia

E- Hypersalivation

Q227. Which one of the following hormones is most responsible for the secretion of bicarbonate is the upper gastrointestinal tract?

A- Somatostatin

B- Gastrin

**C- Secretin**

D- CCK

E- Vasoactive intestinal peptide

Q228. Which one of the following syndromes is associated with an increased risk of Crohn's disease?

**A- Turner's syndrome**

B- Down's syndrome

C- Fragile X syndrome

D- Patau syndrome

E- Edward's syndrome

Q229. Which layer of the epidermis is immediately next to the dermis?

A- Stratum granulosum

B- Stratum lucidum

C- Stratum corneum

**D- Stratum germinativum**

E- Stratum spinosum

Q230. A mutation in the gene that encodes aquaporin 2 is most likely to result in:

A- Histiocytosis

B- Alport's syndrome

C- Minimal change disease

**D- Diabetes insipidus**

E- Medullary sponge kidney

Q231. The adrenergic receptor is an example of a:

A- Intracellular receptor

B- Tyrosine kinase receptor

C- Guanylate cyclase receptor

**D- G protein-coupled receptor**

E- Ligand-gated ion channel

Q232. A study is performed comparing two chemotherapy regimes for patients with small cell lung cancer. The end point of the study is survival time. Which one of the following types statistical measures is it most appropriate to compare survival time with?

A- Odds ratio

B- Pearson's product-moment coefficient

C- Relative risk

**D- Hazard ratio**

E- Absolute risk reduction

Q233. You are caring for a local cardiology consultant's father who has been admitted following a myocardial infarction. He bleeps you from the switchboard and asks how his father is doing. You recognise his voice on the phone. What is the most appropriate response?

A- Decline to give any details over the phone but offer to meet the consultant face-to-face for a chat

B- As a matter of professional courtesy ask for his advice on post-myocardial infarction care

**C- Ask permission from his father then give relevant details**

D- Give full details include the troponin I value and offer to fax the ECG

E- Say he is 'doing fine'

Q234. A contingency table is constructed for a new blood protein marker to screen for prostate cancer in men aged between 50 and 70 years: Prostate cancer present Prostate cancer absent New test positive 19 20 New test negative 14 723 What is the positive predictive value of the new test?

A- 19/20

B- 723/743

**C- 19/39**

D- 19/33

E- 723/737

Q235. A 45-year-old man who is known to have Marfan's syndrome presents with lower back pain. This has been present for a few months now and is associated with headaches, leg pain and intermittent episodes of urinary incontinence. What is the most likely diagnosis?

A- Depression

B- Spinal stenosis

C- Leaking aortic abdominal aneurysm

D- Multiple sclerosis

**E- Dural ectasia**

Q236. Pellagra is caused by a deficiency in:

A- Vitamin B12

B- Thiamine

**C- Nicotinic acid**

D- Vitamin B2

E- Vitamin B6

Q237. A 62-year-old man is admitted to resus with a low GCS. Blood gases taken on admission show the following: pH 7.23 pCO2 2.2 kPa pO2 13.8 kPa IV access is obtained and bloods are taken. He is given supportive care with oxygen and fluids. Renal function results show: Na+ 143 mmol/l K + 4.2 mmol/l Chloride 109 mmol/l Bicarbonate 12 mmol/l Urea 2.1 mmol/l Creatinine 79 µmol/l Glucose 7.1 mmol/l Which one of the following diagnoses would be most consistent with these results?

A- Massive pulmonary embolism

**B- Methanol poisoning**

C- Paraquat poisoning

D- Diabetic ketoacidosis

E- Addisonian crisis

Q238. Potential complications of Paget's disease include each of the following except:

A- Deafness

**B- Cerebral calcification**

C- Skull thickening

D- Bone sarcoma

E- Fractures

Q239. Which one of the following immunoglobulins is involved in the activation of B-cells?

**A- IgD**

B- IgM

C- IgE

D- IgG

E- IgA

Q240. A 25-year-old woman presents with a symmetrical arthropathy affecting her hands. On examination she has synovitis of the 2nd and 3rd metacarpophalangeal joints. What type of HLA allele is most associated with this condition?

A- HLA DR3

B- HLA A3

**C- HLA DR4**

D- HLA DR2

E- HLA B27

Q241. Which one of the following is in direct anatomical contact with the right kidney?

A- Gallbladder

B- Liver

C- Stomach

D- Distal part of small intestine

**E- Duodenum**

Q242. Which of the following is not true regarding B-type natriuretic peptide?

A- Secreted mainly by the ventricles

B- Acts as a diuretic

**C- Acts as a vasoconstrictor**

D- Levels rise in left ventricular failure

E- Reduces sympathetic tone

Q243. You are a ST1 doctor in medicine doing a nightshift. An elderly patient with colorectal cancer has been admitted to the Emergency Department with suspected bowel obstruction. The Emergency Department F2 doctor has tried to refer the patient to the surgeons but was told that as no surgical intervention is likely the patient should be admitted to the medics. The F2 doctor therefore phones yourself and asks you to accept the patient. What is the most appropriate response? the patient

A- Accept the patient and ask the staff to transfer her to the medical assessment unit

B- Simply refuse in order to avoid the patient being admitted under an inappropriate specialty

C- Tell the surgical registrar that you will contact the on-call surgical consultant if he refuses to accept

**D- Go down to the emergency department and review the patient**

E- Phone the surgical team yourself to discuss the matter

Q244. A new adjuvant treatment for women with breast cancer is investigated. The study looks at the recurrence rate after 5 years. The following data is obtained: Number of patients Number who had a recurrence within a 5 year period New drug 200 40 Placebo 400 100 What is the relative risk reduction?

A- 50%

**B- 20%**

C- 4

D- 0.8

E- 5%

Q245. A couple present for genetic counselling. The male partner has haemophilia whilst the female partner has been screened and shown to be a carrier of the gene causing haemophilia. What is the chance that a future child would have haemophilia?

A- 25% if male child, 0% if female child

**B- 50%**

C- 100% if male child, 0% if female child

D- 50% if male child, 0% if female child

E- 25%

Q246. Which one of the following is not a risk factor for the development of pre-eclampsia?

A- Body mass index of 38 kg/m^2

**B- Smoking**

C- A woman carrying twins

D- Nulliparity

E- Diabetes mellitus

Q247. The average weight loss of a patient following a new type of bariatric surgery is 18 kg. The standard deviation of weight loss is 3kg. Assuming the weight loss is normally distributed, what percentage of patients will loss between 9 and 27 kg?

A- 97.4%

B- 95%

C- 95.4%

D- 68.3%

**E- 99.7%**

Q248. A small study looks at the weight of patients diagnosed with type 2 diabetes mellitus. Overall 64 patients were reviewed. The average weight was 81 kg, with a standard deviation of 12 kg. What is the standard error of the mean?

A- Square root (64 / 12)

B- Square root (81 / 12)

C- 12 / 9

D- 9 / 12

**E- 1.5**

Q249. Which foramen does the oculomotor nerve go through?

**A- Superior orbital fissure**

B- Foramen ovale

C- Foramen rotundum

D- Optic canal

E- Inferior orbital fissure

Q250. In terms of the cell cycle, which one of the following phases determine the length of the cell cycle:

A- M

B- M0

**C- G1**

D- S

E- G2

Q251. A study is performed to assess the correlation between age and systolic blood pressure. Which one of the following statements regarding the calculation of the correlation coefficient, r, is incorrect?

A- A value of r greater than 0 implies a positive correlation between age and systolic blood pressure

B- If r = 0 then there is no correlation between systolic blood pressure and age

C- r may lie anywhere between-1 and 1

**D- May be used to predict systolic blood pressure for a given age**

E- Do not provide evidence of cause and effect

Q252. A case-control study is being designed to look at the relationship between epilepsy and a new vaccine for varicella. What is the usual outcome measure in a case-control study?

A- Numbers needed to harm

**B- Odds ratio**

C- Experimental event rate

D- Absolute risk increase

E- Relative risk

Q253. A clinical trial is conducted to study the benefits of a new oral medication to improve the symptoms of patients with chronic obstructive pulmonary disease (COPD). In the trial 300 patients with COPD are given the new medication and a further 300 COPD patients are given a placebo. Three months later they are asked to rate their symptoms using the following scale: much improved, slight improvement, no change, slight worsening, significantly worse. What is the most appropriate statistical test to see whether the new medication is beneficial?

**A- Mann-Whitney U test**

B- Student's t-test (paired)

C- Student's t-test (unpaired)

D- Chi-squared test

E- Wilcoxon signed-rank test

Q254. Which one of the following pathophysiological changes is most responsible for emphysema?

A- Mucosal oedema and mucus plugging

**B- Destruction of alveolar walls secondary to proteinases**

C- Airway hypersensitivity

D- Smooth muscle contraction

E- Hypertrophy of mucous secreting glands

Q255. A 17-year-old man is investigated for recurrent infections and easy bruising. In the past year he has had four episodes of pneumonia. Other than the bruising he is noted to have severe eczema on his trunk and arms. A full blood count is ordered and reported as follows: Hb 14.1 g/dl Plt 82 \* 109 /l WBC 5.9 \* 109 /l Neuts 4.4 \* 109 /l Further bloods show low immunoglobulin M levels. What is the most likely diagnosis?

A- Bruton's congenital agammaglobulinaemia

**B- Wiskott-Aldrich syndrome**

C- Ataxic telangiectasia

D- Chediak-Higashi syndrome

E- DiGeorge syndrome

Q256. A study is to be performed to assess whether the combined oral contraceptive pill is protective against pelvic inflammatory disease. What is the most appropriate type of study design to provide robust evidence?

**A- Cohort study**

B- Placebo-controlled randomised controlled trial

C- Case-control study

D- Cross-sectional survey

E- Cross-over trial

Q257. Which of the following may be used in the treatment of hereditary angioedema?

**A- Anabolic steroids**

B- Oral contraceptive pill

C- ACE inhibitors

D- Beta-blockers

E- Aspirin

Q258. Which of the following conditions is inherited in a X-linked recessive fashion?

**A- Androgen insensitivity syndrome**

B- Myotonic dystrophy

C- von Willebrand's disease

D- Ehlers-Danlos syndrome

E- Huntington's disease

Q259. Which one of the following statements regarding hypersensitivity reactions is false?

A- Delayed hypersensitivity is responsible for graft versus host disease

B- Anaphylaxis is a type I reaction

C- Type II reactions are caused by circulating antibodies reacting with antigen on cell surface

D- Type IV reactions are T cell mediated

**E- Goodpasture's syndrome is an example of a type III reaction**

Q260. Which one of the following best describes the Bohr effect?

A- Increase in pO2 means CO2 binds less well to Hb

B- Decreasing acidity (or pCO2) means oxygen binds less well to Hb

C- Decrease in pO2 means CO2 binds less well to Hb

D- Raised 2,3-DPG enhances oxygen delivery to the tissues

**E- Increasing acidity (or pCO2) means oxygen binds less well to Hb**

Q261. A new drug is trialled for the treatment of lung cancer. Drug A is given to 500 people with early stage non-small cell lung cancer and a placebo is given to 450 people with the same condition. After 5 years 300 people who received drug A had survived compared to 225 who received the placebo. What is the number needed to treat to save one life?

A- 3.33

B- 75

**C- 10**

D- 5

E- 2

Q262. A 34-year-old man is climbing Mount Kilimanjaro. For the past two days he has complained of nausea and a headache. The climbing team is now at an altitude of 4,500m when he develops shortness of breath and a pink frothy cough. Examination reveals bibasal crackles. What is the most appropriate treatment, other than descent?

**A- Nifedipine**

B- Frusemide

C- Mannitol

D- Hydralazine

E- Third-generation cephalosporin

Q263. What is the main mechanism by which vitamin B12 is absorbed?

A- Passive absorption in the terminal ileum

B- Active absorption in the middle to terminal part of jejunum

C- Active absorption by the parietal cells of the stomach

**D- Active absorption in the terminal ileum**

E- Passive absorption in the proximal ileum

Q264. For a patient undergoing an elective splenectomy, when is the optimal time to give the pneumococcal vaccine?

**A- Four weeks before surgery**

B- One week before surgery

C- Immediately following surgery

D- Two weeks after surgery

E- At least one month after surgery

Q265. A 20-year-old man is admitted to the Emergency Department with chest pain. He confides that he has snorted 'a large amount' of cocaine in the previous hours. Which one of the following features is his cocaine use most likely to cause?

A- Hypokalaemia

**B- Hyperthermia**

C- Decreased deep tendon reflexes

D- Hypotension

E- Metabolic alkalosis

Q266. Which one of the following types of thyroid cancer is associated with the RET oncogene?

A- Anaplastic

B- Lymphoma

C- Follicular

**D- Medullary**

E- All types of thyroid cancer

Q267. Which of the following statements is true regarding the p53 gene?

A- It is an oncogene

B- Mutation results in a gain of function

C- 50% of families with a strong history of breast cancer have a p53 mutation

**D- Li-Fraumeni syndrome predisposes to the development of sarcomas**

E- It is located on chromosome 13

Q268. A 38-year-old woman comes for review. Six months ago she fractured her left wrist whilst skiing. The fracture was treated using a cast and repeat x-rays showed that the bone had healed well. Unfortunately for the past few weeks she has been plagued with ongoing 'shooting pains' in her left hand associated with swelling. On examination the left hand is extremely tender to even light touch. Her left hand is also slightly swollen compared to the right. What is the most likely diagnosis?

A- Depression

B- Conversion disorder

**C- Complex regional pain syndrome**

D- Ulnar nerve injury

E- Osteomyelitis

Q269. A new blood test to screen patients for heart failure is trialled on 500 patients. The test was positive in 40 of the 50 patients shown to have heart failure by echocardiography. It was also positive in 20 patients who were shown not to have heart failure. What is the positive predictive value of the test?

A- 0.8

**B- 0.66**

C- 0.33

D- 0.1

E- Cannot be calculated

Q270. What are funnel plots primarily used for? effect

A- Demonstrate the heterogeneity of a meta-analysis

**B- Demonstrate the existence of publication bias in meta-analyses**

C- Provide a graphical representation of the relative risk results in a case-control study

D- Provide a graphical representation of the relative risk results in a cohort study

E- Provide a graphical representation of the probability of a patient experiencing a particular adverse

Q271. Which one of the following is the most common cause of recurrent first trimester spontaneous miscarriage?

A- Factor V Leiden gene mutation

B- Polycystic ovarian syndrome

C- Hyperprolactinaemia

D- Antithrombin III deficiency

**E- Antiphospholipid syndrome**

Q272. Which foramen does the maxillary nerve go through?

A- Jugular foramen

B- Foramen ovale

C- Superior orbital fissure

D- Optic canal

**E- Foramen rotundum**

Q273. A 59-year-old man presents with a severe pain deep within his right ear. He feels dizzy and reports that the room 'is spinning'. Clinical examination shows a partial facial nerve palsy on the right side and vesicular lesions on the anterior two-thirds of his tongue. What is the most likely diagnosis?

A- Meniere's disease

B- Herpes zoster ophthalmicus

**C- Ramsay Hunt syndrome**

D- Acoustic neuroma

E- Trigeminal neuralgia

Q274. Which layer of the epidermis are melanocytes found in?

A- Stratum lucidum

**B- Stratum germinativum**

C- Stratum spinosum

D- Stratum corneum

E- Stratum granulosum

Q275. Which one of the following foods is the best source of folic acid?

A- Cheese

B- Red meat

**C- Liver**

D- Fish

E- Milk

Q276. Which one of the following defines the standard error of the mean?

A- Square root (Standard deviation / number of patients)

B- Number of patients / square root (mean)

C- Number of patients / square root (standard deviation)

**D- Standard deviation / square root (number of patients)**

E- Standard deviation / square root (mean)

Q277. A 24-year-old man is investigated for visual loss and is diagnosed as having Leber's optic atrophy. Given the mitochondrial inheritance of this condition, which one of the following relatives is most likely to be also affected?

A- Daughter

**B- Sister**

C- Son

D- Paternal uncle

E- Father

Q278. You review a patient in the respiratory clinic who has a history of recurrent pulmonary embolism despite anticoagulation with warfarin. Which one of the following physiological changes would be expected?

A- Increased lung compliance

**B- Reduced TLCO**

C- Reduced forced vital capacity

D- Reduced FEV1

E- Increased FEV1 / FVC ration

Q279. A 24-year-old female who is 10 weeks in to her first pregnancy presents for review. Her blood pressure today is 126/82 mmHg. What normally happens to blood pressure during pregnancy?

**A- Falls in first half of pregnancy before rising to pre-pregnancy levels before term**

B- Systolic + diastolic rises by < 10 mmHg

C- Systolic + diastolic falls by < 10 mmHg

D- Rise in first half of pregnancy before falling to pre-pregnancy levels before term

E- Doesn't change

Q280. One of your colleagues confides in you that he has just been diagnosed with hepatitis B. He has not told anyone else as he is worried he may lose his job. He is currently working as a general surgeon in the local hospital. You try to persuade him to inform occupational health but he refuses. What is the most appropriate action?

A- Keep confidentiality but ask him to stop taking blood

B- Send an anonymous letter to his employer

C- Keep confidentiality

**D- Inform your colleague's employing body**

E- Contact the police

Q281. Which one of the following may be used to calculate the number needed to treat?

**A- 1 / (Absolute risk reduction)**

B- (Absolute Risk Reduction) / (Number of people in trial)

C- ((Control event rate)- (Experimental event rate)) / (Control event rate)

D- 1 / (Relative risk)

E- 1 / (Hazard ratio)

Q282. What level of evidence does a randomised control trial offer?

A- Ia

**B- Ib**

C- IIa

D- IIb

E- IV

Q283. A 67-year-old woman presents with lethargy, depression and constipation. A set of screening blood tests reveals the following: Calcium 3.05 mmol/l Albumin 41 g/l What is the single most useful test for determining the cause of her hypercalcaemia?

A- ESR

B- Phosphate

C- Vitamin D level

**D- Parathyroid hormone**

E- ACE level

Q284. Which one of the following is only secreted by the adrenal medulla?

A- Noradrenaline

B- Aldosterone

C- Metadrenaline

D- Cortisol

**E- Adrenaline**

Q285. At which point in the menstrual cycle do progesterone levels peak?

**A- Luteal phase**

B- Ovulation

C- Follicular phase

D- Levels remain constant throughout cycle

E- Menstruation

Q286. A 23-year-old female with Down's syndrome is reviewed in clinic. Which one of the following features is least associated with her condition?

**A- Infertility**

B- Hypothyroidism

C- Alzheimer's disease

D- Short stature

E- Ventricular septal defect

Q287. How many protein-coding genes does a haploid human genome contain?

A- 50,000

**B- 25,000**

C- 275.000

D- 10,000

E- 3 billion

Q288. Which of the following conditions is inherited in an autosomal dominant fashion?

A- Familial Mediterranean Fever

B- Homocystinuria

**C- Tuberose sclerosis**

D- Ataxia telangiectasia

E- Friedreich's ataxia

Q289. A 72-year-old woman is admitted for investigation of hyponatraemia. Which one of the following features is most consistent with the syndrome of inappropriate ADH secretion?

A- Peripheral oedema

B- Recent lisinopril therapy

C- Urine osmolality of 325 mmol/kg

D- Serum sodium of 115 mmol/l

**E- Urinary sodium of 40 mmol/l**

Q290. A study looks at the benefits of adding a new antiplatelet drug to aspirin following a myocardial infarction. The following results are obtained: Percentage of patients having further MI within 3 months Aspirin 4% Aspirin + new drug 3% What is the number needed to treat to prevent one patient having a further myocardial infarction within 3 months?

A- 0.75

B- 0.33

C- Cannot calculate without more data

D- 1

**E- 100**

Q291. Which one of the following features is least likely to be seen in a patient with pellagra?

A- Diarrhoea

B- Depression

**C- Dysphagia**

D- Dermatitis

E- Dementia

Q292. Which of the following conditions is inherited in an autosomal recessive fashion?

A- Familial adenomatous polyposis

B- Noonan syndrome

C- Malignant hyperthermia

D- Antithrombin III deficiency

**E- Congenital adrenal hyperplasia**

Q293. Southern blotting is used to:

A- Amplify RNA

**B- Detect DNA**

C- Detect RNA

D- Detect and quantify proteins

E- Amplify DNA

Q294. Which of the following is not a tumour suppressor gene?

A- p53

B- APC

C- NF-1

D- Rb

**E- myc**

Q295. A 23-year-old student is investigated following an anaphylactic reaction suspected to be secondary to a wasp sting. Which one of the following is the most appropriate first-line test to investigate the cause of the reaction?

A- Hair analysis

**B- Radioallergosorbent test (RAST)**

C- Desensitization therapy

D- Skin patch test

E- Skin prick test

Q296. Which one of the following best describes the main action of the polymerase chain reaction?

A- DNA identification using RNA

**B- DNA amplification**

C- RNA translation to protein

D- RNA amplification

E- DNA to RNA conversion

Q297. Which one of the following would cause a fall in the carbon monoxide transfer factor (TLCO)?

A- Acute asthma

B- Wegener's granulomatosis

C- Polycythaemia

D- Exercise

**E- Emphysema**

Q298. In which one of the following conditions is intravenous immunoglobulin therapy most likely to be beneficial?

A- Graves' ophthalmopathy

**B- Kawasaki disease**

C- Inclusion body myositis

D- Multiple sclerosis

E- Rheumatoid arthritis

Q299. A 37-year-old woman who has a BMI of 44 kg/m^2 undergoes a Roux-en-Y gastric bypass. Of which vitamin/mineral is she most likely to require supplementation?

A- Vitamin C

**B- Iron**

C- Folic acid

D- Zinc

E- Vitamin B6

Q300. A study is performed looking at the chance of stroke in high-risk patients taking a new oral antithrombotic drug compared to warfarin. The following results are obtained: Total number of patients Number who had a stroke within a 3 year period New drug 200 10 Warfarin 600 12 What is the relative risk of having a stroke within a 3 year period for patients taking the new drug compared to warfarin?

A- 3.33

B- 0.66

C- 1.2

**D- 2.5**

E- Cannot calculate from above data

Q301. A 67-year-old man presents with shortness-of-breath. He has a past history of aortic stenosis but is otherwise well. On examination he has a systolic murmur and a clear chest. Routine bloods are as follows: Hb 8.7 g/dl MCV 71 fl Plt 277 \* 109 /l WBC 6.4 \* 109 /l Which one of the following investigations is most likely to explain his anaemia?

**A- Colonoscopy**

B- Renal biopsy

C- Duodenal biopsy

D- Gastroscopy

E- Echocardiogram

Q302. Which one of the following statements best describes a type I statistical error?

**A- The null hypothesis is rejected when it is true**

B- The null hypothesis is accepted when it is false

C- The p value fails to reach statistical significance

D- The alternative hypothesis is rejected when it is true

E- A study fails to reach an appropriate power

Q303. Which one of the following statements regarding the standard error of the mean is correct?

A- Is the square root of standard deviation

B- It is independent of sample size

C- Is a measure of correlation between two variables

D- Confidence intervals cannot be applied to the standard error of the mean

**E- Gets smaller as the sample size increases**

Q304. Which one of the following hormones is under continuous inhibition?

A- Growth hormone

**B- Prolactin**

C- Gonadotropin releasing hormone

D- Thyroid releasing hormone

E- Adrenocorticotrophic hormone

Q305. What is the main constituent of pulmonary surfactant?

A- Apolipoprotein SP-B

B- Phosphatidylglycerol

C- Pulmonary elastase

D- Apolipoprotein SP-A

**E- Dipalmitoyl phosphatidylcholine**

Q306. Whilst reviewing a patient's drug card you notice that you prescribed the wrong dose of atenolol when the patient was initially clerked. Instead of 25mg atenolol od you prescribed 50mg atenolol od. She has received the incorrect dose on two occasions. On examining Mrs Smith you note her blood pressure and pulse are normal. Mrs Smith has a past history of anxiety and describes herself as a 'worrier'. What is the most appropriate action?

A- Complete an entry in your e-portfolio

**B- Apologise to the patient + complete a clinical incident form**

C- Complete a clinical incident form + avoid telling patient to prevent unnecessary anxiety

D- Fill out a 'yellow card'

E- Keep her on the higher dose as she is suffering no ill effects

Q307. A 25-year-old man is counselled regarding the genetics of Huntington's disease. Which one of the following best describes the concept of anticipation? onset of the disease

A- The psychological effect of a patient knowing they will develop an incurable condition

**B- Earlier age of onset in successive generations**

C- More severe disease in successive generations

D- Where there is a known history of inherited conditions, patients may attribute symptoms to the

E- Screening at risk families to allow early intervention and improve outcomes

Q308. Tamsulosin is a:

A- Alpha-1b agonist

B- Alpha-1a agonist

C- Non-selective alpha antagonist

**D- Alpha-1a antagonist**

E- Alpha-1b antagonist

Q309. A 30-year-old man is referred to ophthalmology due to deteriorating visual acuity. Both his brother and uncle on his mother's side have developed similar problems. What is the most likely mode of inheritance of his condition?

A- Autosomal dominant

B- Autosomal recessive

C- X-linked recessive

D- X-linked dominant

E- Polygenic

Q310. A new test to screen for ovarian cancer in patients with a positive family history is tested on 920 patients. The test is positive in 16 of the 20 patients who are proven to have ovarian cancer. Of the remaining patients, only 10 have a positive test. What is the negative predictive value of the new test?

A- 900/920 = 97.8%

B- 890/900 = 98.9%

C- 10/900 = 1.1%

**D- 890/894 = 99.6%**

E- 890/920 = 96.7%

Q311. Which one of the following best describes rheumatoid factor?

A- IgG against the Fc portion of IgM

B- IgM against the Fc portion of IgA

C- IgM against the Fc portion of IgM

**D- IgM against the Fc portion of IgG**

E- IgG against the Fc portion of IgA

Q312. A 24-year-old man presents to the Emergency Department with palpitations. He is diagnosed with a supraventricular tachycardia and given intravenous adenosine. Which type of membrane receptor will adenosine interact with?

A- Ligand-gated ion channel

B- Tyrosine kinase receptor

C- Guanylate cyclase receptor

D- Histidine kinase

**E- G protein-coupled receptor**

Q313. Which one of the following stimulates the release of gastrin from G-cells?

A- Histamine

B- Somatostatin

C- Gastric acid

D- Cholecystokinin

**E- Luminal peptides**

Q314. A 67-year-old woman who is taking long-term prednisolone for polymyalgia rheumatica presents with progressive pain in her right hip joint. A diagnosis of avascular necrosis is suspected. Which investigation is most likely to be diagnostic?

A- Radionuclide bone scan

**B- MRI**

C- Plain x-ray

D- CT

E- DEXA scan

Q315. What is the underlying problem in methaemoglobinaemia?

**A- The oxidation of Fe2+ in haemoglobin to Fe3+**

B- The reduction of Fe2+ in haemoglobin to Fe+

C- The oxidation of Fe3+ in haemoglobin to Fe2+

D- The reduction of Fe2+ in haemoglobin to Fe3+

E- The reduction of Fe3+ in haemoglobin to Fe2+

Q316. A 65-year-old Asian female presents with generalised bone pain and muscle weakness. Investigations show: Calcium 2.07 mmol/l Phosphate 0.66 mmol/l ALP 256 U/l What is the most likely diagnosis?

A- Bone tuberculosis

B- Hypoparathyroidism

C- Myeloma

**D- Osteomalacia**

E- Paget's disease

Q317. Which one of the following statements is not correct regarding hypertension in pregnancy? hypertension

A- An increase above booking readings of > 30 mmHg systolic or > 15 mmHg diastolic suggests

B- Pre-eclampsia occurs in around 5% of pregnancies

**C- Urine dipstick showing protein + is consistent with gestational hypertension**

D- A rise in blood pressure before 20 weeks suggests pre-existing hypertension

E- With gestational hypertension the blood pressure rises in the second half of pregnancy

Q318. Which one of the following cardiac tissue types has the highest conduction velocity?

A- Atrial myocardial tissue

B- Ventricular myocardial tissue

**C- Purkinje fibres**

D- Atrioventricular node

E- Sinoatrial node

Q319. The commonest chromosomal defect in Down's syndrome is:

A- Trinucleotide repeat disorder

B- Autosomal dominant

C- Translocation

D- Mosaicism

**E- Non-dysjunction**

Q320. What is the site of action of antidiuretic hormone?

A- Descending loop of Henle

B- Distal convoluted tubule

C- Ascending loop of Henle

D- Proximal convoluted tubule

**E- Collecting ducts**

Q321. Which one of the following diseases is most strongly associated with HLA antigen DR2?

A- Behcet's disease

B- Type 1 diabetes mellitus

C- Coeliac disease

D- Haemochromatosis

**E- Narcolepsy**

Q322. A 25-year-old woman presents for her first cervical smear. What is the most important aetiological factor causing cervical cancer?

A- Human papilloma virus 6 & 11

B- Herpes simplex virus 2

C- Smoking

D- Combined oral contraceptive pill use

**E- Human papilloma virus 16 & 18**

Q323. Which one of the following foodstuffs contains the most calories per unit weight?

A- White bread

**B- Butter**

C- Pasta

D- Sugar

E- Red meat

Q324. A 24-year-old man is planning an expedition to the Andes. He asks for advice on preventing acute mountain sickness (AMS), other than gradual ascent. What is the most appropriate advice?

**A- Carbonic anhydrase inhibitor**

B- Non-steroid anti-inflammatories

C- Ensure maximal physical fitness prior to trip

D- Dexamethasone starting 2 days prior to arrival

E- There is no evidence of any effective intervention to prevent AMS

Q325. Which one of the following causes of primary immunodeficiency is due to a defect in neutrophil function?

A- Wiskott-Aldrich syndrome

B- Common variable immunodeficiency

C- Bruton's congenital agammaglobulinaemia

D- Di George syndrome

**E- Chronic granulomatous disease**

Q326. The serum potassium is measured in a 1,000 patients taking an ACE inhibitors. The mean potassium is 4.6 mmol/l with a standard deviation of 0.3 mmol/l. Which one of the following statements is correct?

A- 95% of values lie between 4.5 and 4.75 mmol/l

B- 95.4% of values lie between 4.3 and 4.9 mmol/l

C- 99.7% of values lie between 4.0 and 5.2 mmol/l

D- 68.3% of values lie between 4.5 and 4.75 mmol/l

**E- 68.3% of values lie between 4.3 and 4.9 mmol/l**

Q327. A 55-year-old man with a history of type 2 diabetes mellitus, bipolar disorder and chronic obstructive pulmonary disease has bloods taken as part of his annual diabetic review: Na+ 129 mmol/l K + 3.8 mmol/l Bicarbonate 24 mmol/l Urea 3.7 mmol/l Creatinine 92 µmol/l Due to his smoking history a chest x-ray is ordered which is reported as normal. Which one of the following medications is most likely to be responsible?

A- Metformin

B- Lithium

**C- Carbamazepine**

D- Sodium valproate

E- Pioglitazone

Q328. A cohort study is designed to look at the association between working long hours and blood pressure. The following results are obtained after 10 years of follow-up: Number of patients with normal blood pressure after 10 years Number of patients diagnosed with hypertension after 10 years Total Working < 40 hours/ week 1000 50 1,050 Working > 40 hours/ week 600 60 660 What is the odds ratio of developing hypertension if you work more than 40 hours/week compared to people who work less than 40 hours/week?

A- 60/600

B- 0.5

**C- 2**

D- 50/60

E- 60/50

Q329. Which one of the following statements is true regarding the radial nerve?

**A- Damage at the axilla would lead to wrist drop**

B- Damage at the wrist leads to wasting of the thenar muscles

C- It supplies the lateral 2 lumbricals

D- It supplies sensation to the lateral one and a half fingers

E- It is derived from C6-8 and T1

Q330. The Framingham Heart Study is an example of a:

A- Cross-sectional survey

**B- Cohort study**

C- Case-control study

D- Randomised controlled trial

E- Meta-analysis

Q331. Osteogenesis imperfecta is due to a defect in which one of the following proteins?

A- Fibrillin

B- Elastin

**C- Type I collagen**

D- Type IV collagen

E- Polycystin-1

Q332. Which one of the following statements regarding odds and odds ratio is correct?

A- Odds ratio = 1 / attributable risk

B- Is always between 0 and 1 (when expressed as a decimal)

**C- The odds ratio approximates to relative risk if the outcome of interest is rare**

D- Odds ratios are the most commonly reported measure in cohort studies

E- When applied to survival analysis is termed the hazard ratio

Q333. In terms of the cell cycle, mitosis takes place in:

**A- M**

B- M0

C- G1

D- S

E- G2

Q334. What is the correct formula to calculate the positive predictive value? (TP = true positive; FP = false positive; TN = true negative; FN = false negative)

A- Sensitivity / (1- specificity)

**B- TP / (TP + FP)**

C- TN / (TN + FP)

D- TN / (TN + FN)

E- TP / (TP + FN )

Q335. A randomised controlled trial is performed to look at a new drug to prevent hip fractures in postmenopausal women. Group A consists of 1,000 women who take the new drug whilst group B contains 1,400 women taking a placebo. The hip fracture rate in group A is 2% and in group B is 4%. What is the number needed to treat to prevent one hip fracture?

A- 10

**B- 50**

C- 6

D- 12

E- 2

Q336. Where is the majority of iron found in the body?

A- Bone

**B- Haemoglobin**

C- Ferritin and haemosiderin

D- Myoglobin

E- Plasma iron

Q337. You are a ST1 doctor in medicine. A 67-year-old man has been investigated for anaemia and weight loss. Endoscopy shows a gastric tumour which is confirmed as an adenocarcinoma on biopsy. On discussing the diagnosis the patient states that he has had 'a good life' and doesn't want any treatment. Clinical examination is unremarkable. He is able to retain and understand the information you give to him, including the likely curative nature of surgery. What is the most appropriate action?

**A- Respect his wishes and book a follow-up appointment for four weeks**

B- Arrange a CT head and check bloods to exclude cerebral metastases and hypercalcaemia

C- Arrange an appointment with a psychiatrist

D- Detain him under the Mental Health Act

E- Ask to speak to his wife alone to find out why he is refusing surgery

Q338. A 54-year-old man is brought to the Emergency Department after being found collapsed in the street. He is known to have a history of alcoholic liver disease. Blood tests reveal the following: Calcium 1.62 mmol/l Albumin 33 g/l Which one of the following is the most appropriate management of the calcium result?

A- 10ml of 10% calcium chloride over 10 minutes

B- 20% albumin infusion

**C- 10ml of 10% calcium gluconate over 10 minutes**

D- No action

E- 10ml of 10% calcium chloride over 4 hours

Q339. Which one of the following statements regarding leukotrienes is not true?

A- Secreted by leukocytes

B- Formed from arachidonic acid

C- Attract leukocytes

**D- Cause bronchodilation**

E- Increase vascular permeability

Q340. A new antihypertensive is in phase III development. A study is designed where a margin is defined (-delta to +delta) on mean blood pressure reduction. If the confidence interval of the difference between the new drug and ramipril lies within this margin then the trial can be said to have produced a positive result. What is this an example of?

A- Non-inferiority trial

B- Superiority trial

C- Placebo-controlled trial

D- Delta-controlled trial

**E- Equivalence trial**

Q341. Which type of secondary messenger system does nitric oxide stimulate?

**A- Cyclic GMP**

B- Cyclic AMP

C- Phosphoinositide

D- Protein kinase

E- Calcium

Q342. In the Gell and Coombs classification of hypersensitivity reactions idiopathic thrombocytopenic purpura is an example of a:

A- Type I reaction

**B- Type II reaction**

C- Type III reaction

D- Type IV reaction

E- Type V reaction

Q343. Which one of the following clinical features would be least consistent with a diagnosis of severe preeclampsia?

A- Headache

B- Epigastric pain

**C- Reflexes difficult to elicit**

D- Low platelet count

E- Papilloedema

Q344. A study measures a patients serum cholesterol before and after a new lipid-lowering therapy has been given. What type of significance test should be used to analyse the data?

**A- Student's paired t-test**

B- Student's unpaired t-test

C- Chi-squared test

D- Pearson's test

E- Spearman test

Q345. Which one of the following reduces the secretion of renin?

A- Erect posture

B- Adrenaline

C- Hyponatraemia

D- Hypotension

**E- Beta-blockers**

Q346. Which one of the following is the most common underlying mechanism causing prolongation of the QT segment?

A- Opening of calcium channels

B- Blockage of sodium channels

C- Opening of sodium channels

**D- Blockage of potassium channels**

E- Opening of potassium channels

Q347. Which of the following statements is true regarding autosomal recessive inheritance? will be heterozygote carriers

A- Disease is manifest in every generation

B- There is a 25% chance of two heterozygote parents having a carrier child

C- Conditions tend to be less severe than autosomal dominant conditions

**D- All offspring of an affected individual and a non-affected individual (i.E- not a carrier or affected)**

E- Examples include Huntingdon's disease

Q348. What chromosome abnormality is associated with Klinefelter's syndrome?

A- 47, XO

**B- 47, XXY**

C- 46, XXY

D- 47, XYY

E- 47, XXO

Q349. A rapid urine screening test is developed to detect Chlamydia. A trial involving 200 men and women is performed comparing the new test to the existing NAAT techniques: Chlamydia present Chlamydia absent New test positive 20 3 New test negative 5 172 What is the negative predictive value of the new test?

**A- 172/177**

B- 20/23

C- 172/192

D- 172/175

E- 20/25

Q350. An 18-year-old male presents is reviewed in the endocrinology clinic due to concerns about delayed pubertal development, despite being 1.77m tall. On examination he has scant pubic hair and reduced testicular volume. The following blood results are obtained: Testosterone 6.7 nmol/l (9- 30) LH 3 .1 mu/l (3- 10) FSH 5.7 mu/l (3- 10) What is the most likely diagnosis?

A- Klinefelter's syndrome

B- Acute lymphoblastic leukaemia

C- Testicular feminisation syndrome

D- Primary testicular failure

**E- Kallman's syndrome**

Q351. A 60-year-old man who is currently receiving chemotherapy for non-small cell lung cancer presents for review. He is currently being treated with oral calcium supplements as hypocalcaemia was detected during a recent admission. Bloods taken two days ago reveal the following: Calcium 2.01 mmol/l Which one of the following tests may help determine why his calcium level remains low despite calcium supplementation?

A- Vitamin D

B- Parathyroid hormone

C- Phosphate

D- Alkaline phosphatase

**E- Magnesium**

Q352. A 31-year-old woman presents for review. For the past few months she has been feeling generally tired and has not had a normal period for around 4 months. Prior to this she had a regular 30 day cycle. A pregnancy test is negative, pelvic examination is normal and routine bloods are ordered: FBC Normal U&E Normal TFT Normal Follicle-stimulating hormone 41 iu/l ( < 35 iu/l) Luteinizing hormone 33 mIU/l (< 20 mIU/l) Oestradiol 70 pmol/l ( > 100 pmol/l) What is the most likely diagnosis?

A- Ovarian cancer

B- Gonadotropin-producing pituitary adenoma

C- Turner syndrome

**D- Premature ovarian failure**

E- Aromatase enzyme deficiency

Q353. Which one of the following statements regarding epidemiological measures is correct?

**A- Cross-sectional surveys can be used to estimate the prevalence of a condition in the population**

B- In chronic diseases the incidence is much greater than the prevalence

C- Incidence = prevalence \* duration of condition

D- The prevalence is the number of new cases per population in a given time period

E- Pre-test probability = 1 / incidence

Q354. Which one of the following adrenoceptors causes inhibition of pre-synaptic neurotransmitter release in response to sympathetic stimulation?

A- Alpha-1

**B- Alpha-2**

C- Beta-1

D- Beta-2

E- Beta-3

Q355. A 43-year-old man is suspected of having a common peroneal nerve palsy following a fracture of his fibula. Each one of the following features may be seen in such lesions, except:

A- Wasting of the anterior tibial and peroneal muscles

B- Weakness of foot dorsiflexion

C- Weakness of extensor hallucis longus

D- Weakness of foot eversion

**E- Sensory loss over the medial aspect of the lower limb**

Q356. Which one of the following is involved in the translation of RNA into proteins?

A- Golgi apparatus

B- Rough endoplasmic reticulum

**C- Ribosome**

D- Smooth endoplasmic reticulum

E- Lysosome

Q357. Which of the following is most likely to cause hypokalaemia associated with acidosis?

A- Cushing's syndrome

B- Vomiting

C- Conn's syndrome

D- Diuretics

**E- Acetazolamide**

Q358. A 10-year-old boy is found to have haemophilia A following investigation for a haemoarthrosis. Which one of his relatives is most likely to have the condition?

A- Father

**B- Mother's brother**

C- Father's sister

D- Mother

E- Father's brother

Q359. Patients with deficiencies of which one of the following complement proteins are predisposed to Leiner disease?

A- C1

B- C2

C- C3

D- C4

**E- C5**

Q360. Each one of the following is an acute phase protein, except:

A- Haptoglobin

B- Alpha-1 antitrypsin

C- CRP

D- Ferritin

**E- ESR**

Q361. Which one of the following immunoglobulins are present in the lowest concentration in blood?

A- IgA

**B- IgE**

C- IgG

D- IgM

E- IgD

Q362. Which one of the following enzymes is mainly responsible for breaking starch down into sugars?

**A- Amylase**

B- Sucrase

C- Alpha-glucosidase

D- Maltase

E- Lactase

Q363. Each one of the following promotes the release of endothelin, except:

**A- Prostacyclin**

B- ADH

C- Angiotensin II

D- Hypoxia

E- Mechanical shearing force

Q364. Which one of the following diseases would give a positive cyanide-nitroprusside test?

A- Bartter's syndrome

B- Cryoglobulinaemia

**C- Cystinuria**

D- Paroxysmal nocturnal haemoglobinuria

E- Cystinosis

Q365. A 23-year-old man is referred to the ophthalmologists with visual problems which are found to be caused by a downward dislocation of the len in his right eye. The ophthalmologist notices his marfarnoid habitus and history of learning disabilities. A diagnosis of homocystinuria is suspected. What is the pathophysiology of this condition?

A- Deficiency of S-adenosyl-methionine

B- Deficiency of homocysteine transsulfurase

C- Excess of cystathionine beta synthase

**D- Deficiency of cystathionine beta synthase**

E- Excess of homocysteine transsulfurase

Q366. A new drug which may reduce the chance of patients with chronic kidney disease developing gout is introduced. In one study of 2,000 patients 1,200 received the new drug of which 120 patients develop gout. The remaining 800 patients received a placebo of which 200 developed gout. What is the absolute risk reduction of developing gout?

A- 0.1

**B- 15%**

C- 120

D- 25%

E- 6.66

Q367. Which one of the following statements regarding the normal distribution is correct?

A- Is a discrete probability distribution

B- 99.7% of values lie within 2 standard deviations of the mean

**C- Mean = mode = median**

D- Standard deviation = mean / square root (variance)

E- Is also referred to as the binomial distribution

Q368. Which one of the following would cause a fall in the carbon monoxide transfer factor (TLCO)?

A- Goodpasture's syndrome

B- Left-to-right cardiac shunts

**C- Anaemia**

D- Hyperkinetic states

E- Exercise

Q369. Chronic lymphocytic leukaemia is mostly due to a:

A- Polyclonal proliferation of B-cell lymphocytes

**B- Monoclonal proliferation of B-cell lymphocytes**

C- Monoclonal proliferation of large granular lymphocytes

D- Monoclonal proliferation of T-cell lymphocytes

E- Polyclonal proliferation of T-cell lymphocytes

Q370. A new blood test which can show signs of myocardial damage within one hour of the onset of chest pain is developed. In a trial of 100 patients presenting with chest pain, 40 of the patients are later proven to have had myocardial ischaemia by conventional troponin tests. Of these patients the new test was positive in 20 cases. The new test was also positive in 20 of the remaining 60 patients later shown to have a negative troponin. What is the negative predictive value of the new test for myocardial ischaemia?

A- 0.5

**B- 0.66**

C- 0.8

D- Cannot calculate

E- 0.33

Q371. You are a ST1 doctor on a gastroenterology ward. The F2 doctor has asked you to supervise him putting in an ascitic drain for a patient with liver cirrhosis. He is keen to get it signed off for his portfolio. He has never seen one put in before but has read around the subject. What is the most appropriate action? prevent unnecessary anxiety and sign him off drain under your careful guidance

A- You do the procedure but sign him off as you know he will do many more over the next 3 months

B- Get the F2 doctor to insert the drain under your careful guidance, avoid telling the patient to

**C- Suggest it would be better if he watches you insert the drain before attempting one himself**

D- If he is confident ask him to do it so you can spend your time more efficiently on other ward jobs

E- Ask the patient if he minds the F2 doctor doing the procedure and get the F2 doctor to insert the

Q372. Which one of the following statements regarding allergy testing is incorrect?

A- Both irritants and allergens may be tested for using skin patch testing

B- The radioallergosorbent test determines the level of IgE to a specific allergen

C- Skin prick testing is easy to perform and inexpensive

**D- Skin prick testing should be read after 48 hours**

E- Skin prick testing normally includes a histamine control

Q373. Which one of the following types of blood vessel is first to vasoconstrict in the presence of hypoxia?

A- Muscle arteries

B- Skin arteries

C- Hepatic arteries

D- Renal arteries

**E- Pulmonary arteries**

Q374. You review a 30-year-old man shortly after he is discharged from the Intensive Care Unit after being admitted with pneumococcal pneumonia. This is his second admission in 18 months with a severe pneumonia. During his first admission Haemophilus influenzae was grown from his sputum. He also describes having frequent episodes of sinusitis and recurrent skin abscesses. Which one of the following complement deficiencies is he most likely to be suffering from?

A- C1

B- C2

**C- C3**

D- C4

E- C5

Q375. Which one of the following features is least commonly seen in patients with pseudoxanthoma elasticum?

A- Increased risk of ischaemic heart disease

**B- Retinitis pigmentosa**

C- Gastrointestinal haemorrhage

D- Autosomal recessive inheritance

E- 'Plucked chicken skin' appearance

Q376. T-Helper cells of the Th1 subset typically secrete:

A- IFN-beta, IL-4, IL-8

**B- IFN-gamma, IL-2, IL-3**

C- IL-1, IL-6, TNF-alpha

D- IL-1

E- IL-4, IL-5, IL-6, IL-10, IL-13

Q377. Which one of the following is equivalent to the pre-test probability?

A- Post test odds / (1 + post-test odds)

B- Pre-test odds x likelihood ratio

**C- The prevalence of a condition**

D- The incidence of a condition

E- Post-test odds / likelihood ratio

Q378. What is the main action of atrial natriuretic peptide?

A- Promotes renin excretion

B- Reduces excretion of sodium and water

**C- Vasodilation**

D- Promotes aldosterone excretion

E- Vasoconstriction

Q379. A 28-year-old female undergoes a renal transplant for focal segmental glomerulosclerosis. Within hours of the operation the patient becomes unwell with features consistent with severe systemic inflammatory response syndrome. The patient is immediately taken back to theatre and the transplanted kidney is removed. What type of immunoglobulins are responsible for the graft rejection?

A- IgE

B- IgM

**C- IgG**

D- IgD

E- IgA

Q380. You review a 24-year-old woman with a history of asthma in the Emergency Department. She has been admitted with acute shortness of breath associated with tongue tingling and an urticarial rash after eating a meal containing shellfish. Her symptoms settle with nebulised salbutamol and intravenous hydrocortisone. What is the most useful test to establish whether this episode was due to anaphylaxis?

**A- Serum tryptase**

B- Serum IgE

C- Plasma histamine

D- Eosinophil count

E- C-reactive protein

Q381. Which one of the following conditions is usually inherited in a X-linked dominant fashion?

A- Albinism

B- Hurler's syndrome

C- Ataxia telangiectasia

D- Homocystinuria

**E- Alport's syndrome**

Q382. A 6-year-old boy is referred to clinic due to recurrent renal calculi. His grandmother also had a similar problem. What is the most likely diagnosis?

A- Marfan's syndrome

B- Familial gout nephropathy

C- Homocystinuria

**D- Cystinuria**

E- Cystinosis

Q383. A follow-up study is performed looking at the height of 100 adults who were given steroids during childhood. The average height of the adults is 169cm, with a standard deviation of 16cm. What is the standard error of the mean?

A- Cannot be calculated

B- 1.69

C- 0.16

**D- 1.6**

E- 1.3

Q384. You are a ST1 doctor working on the medical admissions unit. You are currently working for a locum consultant with whom you have a good working relationship. However, both you and the nurses are concerned regarding the some of the management decisions and inappropriate discharges. What is the most appropriate action?

A- Speak to the locum consultant directly

B- Phone the local newspaper to help publicise the problem

C- Ask the nurses to put all the poorly or complex patients under a different consultant

D- Fill in a clinical incident form each time you disagree with a decision

**E- Speak to the medical director**

Q385. Which one of the following features is characteristic of acute intermittent porphyria?

A- Photosensitivity

**B- Increased urinary porphobilinogen between acute attacks**

C- Hypernatraemia during attacks

D- Autosomal recessive inheritance

E- Increased faecal protoporphyrin excretion

Q386. A man with glucose-6-phosphate dehydrogenase deficiency asks for advice regarding his son. What is the chance his son will also develop the disease?

A- 2 in 3

**B- No increased risk**

C- Will definitely be affected

D- 1 in 2

E- 1 in 4

Q387. A study is designed to see whether the degree of chest pain is linked to the troponin I value for patients admitted following a myocardial infarction. The pain is assessed using a scale of 1-10, with 10 representing the worst pain that the patient has ever experienced. Which one of the following significance tests is it most appropriate to use to investigate this link?

A- Student's t-test

B- Chi-squared test

**C- Spearman's rank correlation coefficient**

D- Pearson's product-moment coefficient

E- Mann-Whitney test

Q388. Which one of the following types of oral steroid has the least amount of mineralocorticoid activity?

A- Fludrocortisone

B- Hydrocortisone

**C- Dexamethasone**

D- Prednisolone

E- Cortisone

Q389. What chemical mediator is mainly responsible for the tissue oedema seen in patients in hereditary angioedema?

A- Histamine

B- Serotonin

C- Neurokinin A

**D- Bradykinin**

E- Nitric oxide

Q390. Each one of the following is associated with Noonan's syndrome, except:

A- Webbed neck

B- Short stature

C- Factor XI deficiency

D- Pulmonary valve stenosis

**E- Abnormal karyotype**

Q391. What is the most common target of pANCA?

A- Plasminogen activator inhibitor-1

B- Elastase

**C- Myeloperoxidase**

D- Serine proteinase 3

E- Cathepsin G

Q392. A patient presents with an inability to abduct his right shoulder. Which nerve supplies the deltoid muscle?

A- Lateral cutaneous

B- Suprascapular

C- Musculocutaneous

**D- Axillary**

E- Median

Q393. In a normal distribution what percentage of values lie within 3 standard deviations of the mean?

A- 68.3%

B- 98.3%

C- 95.4%

**D- 99.7%**

E- 97.2%

Q394. A 15-year-old girl presents with abdominal pain. She is normally fit and well and currently takes a combined oral contraceptive pill. The patient is accompanied by her mother, who is known to have hereditary spherocytosis. The pain is located in the upper abdomen and is episodic in nature, but has become severe today. There has been no change to her bowel habit and no nausea or vomiting. What is the most likely diagnosis?

A- Inferior vena cava thrombosis

B- Acute pancreatitis

C- Renal vein thrombosis

D- Gastritis

**E- Biliary colic**

Q395. A patient receives vincristine to help treat non-Hodgkin's lymphoma. What stage in the cell cycle does vincristine act?

A- G1

B- M0

**C- M**

D- G2

E- S

Q396. A new screening test is developed for colorectal cancer. It is a blood test which detects a protein; the higher the level of the protein, the more likely a patient is to have colorectal cancer. If the cut-off for a positive test is increased, which one of the following will also be increased?

A- The p value

**B- Specificity**

C- Likelihood ratio for a negative test result

D- Sensitivity

E- Negative predictive value

Q397. Which one of the following is not a recognised feature of methaemoglobinaemia?

A- Dyspnoea

B- 'Chocolate' cyanosis

C- Anxiety

**D- Reduced pO2 but normal oxygen saturation on pulse oximetry**

E- Acidosis

Q398. A study is designed to compare the calcium levels of males and females who have Crohn's disease. The investigators aim to discover whether there is a difference between the average calcium level in males compared to females. From previous studies it is known that the calcium levels are normally distributed. Which one of the following statistical tests is it most appropriate to use?

A- Pearson's test

B- Mann-Whitney test

C- Chi-squared test

**D- Student's unpaired t-test**

E- Student's paired t-test

Q399. Which one of the following is not a recognised cause of hypocalcaemia?

A- Hypoparathyroidism

**B- Bendroflumethiazide**

C- Pseudohypoparathyroidism

D- Acute pancreatitis

E- Acute rhabdomyolysis

Q400. A 47-year-old man is seen in the respiratory clinic. He has been referred due to progressive shortness of breath. A CT scan showed emphysematous changes in the lungs. As he has never smoked alpha 1-antitrypsin levels were ordered and reported to be 10% of normal. What is the most likely genotype of this patient?

**A- PiZZ**

B- PiSS

C- PiMS

D- PiMM

E- PiMZ

Q401. The nitric oxide receptor is an example of a:

A- Ligand-gated ion channel

B- MAPK/ERK receptor

**C- Guanylate cyclase receptor**

D- G protein-coupled receptor

E- Tyrosine kinase receptor

Q402. Which one of the following is least associated with hypercalcaemia?

A- Thyrotoxicosis

**B- Secondary hyperparathyroidism**

C- Tertiary hyperparathyroidism

D- Thiazide diuretics

E- Primary hyperparathyroidism

Q403. Which one of the following immunological changes is seen in progressive HIV infection?

A- Increase in IL-2 production

**B- Increase in B2-microglobulin levels**

C- Increased type IV hypersensitivity responses

D- Increased natural killer (NK) cell function

E- A rise in the CD4/CD8 ratio

## **Chapter 7 Respiratory**

Q1. A 27-year-old woman is reviewed in the asthma clinic. She currently uses salbutamol inhaler 100mcg prn combined with beclometasone dipropionate inhaler 400mcg bd. Despite this she is having frequent exacerbations of her asthma and recently required a course of prednisolone. What is the most appropriate next step in management?

A- Add a leukotriene receptor antagonist

B- Add tiotropium

**C- Add salmeterol**

D- Start to take the salbutamol regularly, 2 puffs qds

E- Switch beclometasone to fluticasone

Q2. Which one of the following would cause a rise in the carbon monoxide transfer factor (TLCO)?

A- Emphysema

B- Pulmonary embolism

**C- Pulmonary haemorrhage**

D- Pneumonia

E- Pulmonary fibrosis

Q3. Which one of the following is responsible for farmer's lung?

A- Aspergillus clavatus

**B- Saccharopolyspora rectivirgula**

C- Candida albicans

D- Mycobacterium avium

E- Avian proteins

Q4. Which of the following factors is least useful in assessing patients with a poor prognosis in communityacquired pneumonia?

A- Mini-mental score of 6/10

B- Urea of 11.4 mmol/l

**C- C-reactive protein of 154**

D- Respiratory rate of 30

E- Aged 75 years old

Q5. A 24-year-old female presents with episodic wheezing and shortness of breath for the past 4 months. She has smoked for the past 8 years and has a history of eczema. Examination of her chest is unremarkable. Spirometry is arranged and is reported as normal. What is the most appropriate management of her symptoms?

A- Peak flow diary

B- Trial of lansoprazole

C- Baseline FEV1 repeated following inhaled corticosteroids

D- Arrange a chest x-ray

**E- Trial of salbutamol inhaler**

Q6. Which one of the following is a contraindication to surgical resection in lung cancer?

A- Haemoptysis

B- FEV 1.9 litres

C- Histology shows squamous cell cancer

**D- Vocal cord paralysis**

E- Calcium = 2.84 mmol/L

Q7. A 52-year-old man with a history of alcohol dependence is admitted with fever and feeling generally unwell. An admission chest x-ray shows consolidation in the right upper lobe with early cavitation. What is the most likely causative organism?

A- Streptococcus pneumoniae

B- Legionella pneumophilia

C- Staphylococcus aureus

**D- Klebsiella pneumoniae**

E- Mycoplasma pneumoniae

Q8. A 74-year-old woman with thyroid cancer is admitted due to shortness of breath. What is the best investigation to assess for possible compression of the upper airways?

A- Arterial blood gases

B- Forced vital capacity

C- Transfer factor

D- Peak expiratory flow rate

**E- Flow volume loop**

Q9. You review a 26-year-old woman. She has a history of asthma and is prescribed salbutamol 100mcg 2 puffs prn, beclometasone dipropionate 400mcg bd and salmeterol 50mcg bd. Last week she found out she was pregnant and stopped the beclometasone and salmeterol inhalers as she was concerned about potential harm to the pregnancy. What is the most appropriate action?

A- Reduce beclometasone to 200mcg bd and continue salmeterol at the same dose

B- Stop beclometasone and salmeterol inhalers + refer to a respiratory physician

C- Reduce beclometasone to 200mcg bd and stop salmeterol

D- Restart beclomethasone at same dose and stop salmeterol

**E- Reassure + restart beclometasone and salmeterol inhalers**

Q10. Which one of the following causes of lung fibrosis predominately affect the upper zones?

A- Bleomycin

B- Rheumatoid arthritis

C- Cryptogenic fibrosis alveolitis

D- Methotrexate

**E- Extrinsic allergic alveolitis**

Q11. A chest x-ray of a patient with sarcoidosis shows bilateral hilar lymphadenopathy but is otherwise normal. What chest x-ray stage does this correspond to?

A- Stage 0

**B- Stage 1**

C- Stage 2

D- Stage 3

E- Stage 4

Q12. A 45-year-old female develops pleuritic chest pain following a hysterectomy 10 days ago. Low-molecular weight heparin is given initially and CTPA confirms a pulmonary embolism. There is no previous history of venous thromboembolism. How long should the patient be warfarinised for?

A- Not suitable for anticoagulation

B- At least 4 weeks

**C- At least 3 months**

D- At least 6 months

E- 12 months

Q13. A 69-year-old man with chronic obstructive pulmonary disease (COPD) presents to the Emergency Department with dyspnoea. Three days ago he was started on amoxicillin and prednisolone by his GP. Since arriving in the department he has been given back-to-back nebulised salbutamol and ipratropium bromide. The oxygen concentration has been titrated to 28% to achieve a saturation of 88-92%. Due to his poor response to treatment an aminophyline infusion is started. Thirty minutes later, his arterial blood gases show the following (taken on 28% oxygen): pH 7.30 pCO2 7.6 kPa pO2 8.1 kPa What is the most appropriate next step in management?

A- Intravenous magnesium sulphate

B- Intravenous hydrocortisone

C- Decrease his oxygen to 24%

**D- Non-invasive ventilation**

E- Increase his oxygen to 35%

Q14. A 65-year-old female with a history of chronic obstructive pulmonary disease (COPD) is reviewed in the Emergency Department. She has presented with a sudden worsening of her dyspnoea associated with haemoptysis. What is the most suitable initial imaging investigation to exclude a pulmonary embolism?

A- Ventilation-perfusion scan

B- Echocardiogram

C- Pulmonary angiography

**D- Computed tomographic pulmonary angiography**

E- MRI thorax

Q15. A 70-year-old man who is known to have chronic obstructive pulmonary disease (COPD) is admitted to the Medical Admissions Unit with a suspected infective exacerbation of COPD. What should the target oxygen saturations be until blood gases are available?

A- >98%

B- 94-98%

**C- 88-92%**

D- 92-94%

E- > 95% first 48 hours, > 90% rest of admission

Q16. A 24-year-old male with no past medical history presents to the Emergency Department with pleuritic chest pain. There is no history of a productive cough and he is not short of breath. Chest x-ray shows a right-sided pneumothorax with a 1 cm rim of air and no mediastinal shift. What is the most appropriate management?

A- Immediate 14G cannula into 2nd intercostal space, mid-clavicular line

**B- Discharge with outpatient chest x-ray**

C- Aspiration

D- Intercostal drain insertion

E- Admit for 48 hours observation

Q17. A 45-year-old man is noted to have bilateral hilar lymphadenopathy on chest x-ray. Which one of the following is the least likely cause?

**A- Amyloidosis**

B- Sarcoidosis

C- Histoplasmosis

D- Tuberculosis

E- Berylliosis

Q18. A 41-year-old female presents with 3 day history of a dry cough and shortness of breath. This was preceded by flu-like symptoms. On examination there is a symmetrical, erythematous rash with 'target' lesions over the whole body. What is the likely organism causing the symptoms?

A- Pseudomonas

B- Staphylococcus aureus

**C- Mycoplasma pneumoniae**

D- Chlamydia pneumoniae

E- Legionella pneumophilia

Q19. Which one of the following types of lung cancer is most associated with cavitating lesions?

A- Carcinoid

B- Large cell

C- Small cell

**D- Squamous cell**

E- Adenocarcinoma

Q20. You are reviewing the results from investigations requested at the previous respiratory clinic. A 40-yearold man is being investigated for increasing shortness of breath. The notes show he has smoked for the past 25 years. Pulmonary function tests reveal the following: FEV1 1.4 L (predicted 3.8 L) FVC 1.7 L (predicted 4.5 L) FEV1/FVC 82% (normal > 75%) Which one of the following is the most likely explanation? A. Asthma B. Bronchiectasis C. Kyphoscoliosis D. Chronic obstructive pulmonary disease E. Laryngeal malignancy

Q21. A 46-year-old female with a history of rheumatoid arthritis is investigated due to progressive shortness of breath. She is currently treated with methotrexate and ibuprofen. The following results are obtained from spirometry: FEV1/FVC 45% What is the most likely cause of the dyspnoea? A. Bronchiolitis obliterans B. Methotrexate pneumonitis C. Pulmonary fibrosis D. Caplan's syndrome E. Lung cancer

Q22. A 62-year-old female with a 40 pack year history of smoking is investigated for a chronic cough associated with haemoptysis. Bronchoscopy reveals a small 1 cm tumour confined to the right main bronchus. A biopsy taken shows small cell lung cancer. What is the most appropriate management? A. Laser therapy B. Chemotherapy + radiotherapy C. Surgery D. Radiotherapy E. Interferon-alpha

Q23. A 72-year-old man who is known to have chronic kidney disease stage 4 is admitted to the Emergency Department. Since yesterday he has felt short-of-breath on exertion and has been coughing up blood. On examination he tachycardic at 110/min with a normal chest examination. What is the most suitable initial imaging investigation to exclude a pulmonary embolism?

**A- Ventilation-perfusion scan**

B- Computed tomographic pulmonary angiography

C- Pulmonary angiography

D- MRI thorax

E- Echocardiogram

Q24. A 62-year-old man who is investigated for haemoptysis is found to have squamous cell lung cancer. Which one of the following is a contraindication to surgery?

A- Pleural effusion

**B- Superior vena caval obstruction**

C- Haemoptysis

D- Hypercalcaemia

E- Enlarged mediastinal lymph nodes

Q25. A 24-year-old female with a history of anxiety is taken to the Emergency Department following an acute onset of shortness of breath. On examination the chest is clear to auscultation but the respiratory rate is raised at 40 breaths per minute. A diagnosis of hyperventilation secondary to anxiety is suspected. Which of the following arterial blood gas results (taken on room air) are consistent with this?

A- pH = 7.56; pCO2 = 2.9 kPa; pO2 = 10.1 kPa

B- pH = 7.24; pCO2 = 8.4 kPa; pO2 = 12.7 kPa

C- pH = 7.34; pCO2 = 2.7 kPa; pO2 = 15.4 kPa

**D- pH = 7.54; pCO2 = 2.4 kPa; pO2 = 14.1 kPa**

E- pH = 7.54; pCO2 = 4.9 kPa; pO2 = 13.3 kPa

Q26. A 31-year-old woman is referred to the acute medical unit with a 4 day history of polyarthritis and a low-grade pyrexia. Examination reveals shin lesions which the patient states are painful. Chest x-ray shows a bulky mediastinum. What is the most likely diagnosis?

A- Loffler's syndrome

**B- Lofgren's syndrome**

C- Systemic lupus erythematous

D- Gonococcal arthritis

E- Reiter's syndrome

Q27. A 24-year-old female comes for review. She was diagnosed with asthma two years ago and is currently using a salbutamol inhaler 100mcg prn combined with beclometasone dipropionate inhaler 200mcg bd. Despite this her asthma is not well controlled. On examination her chest is clear and she has a good inhaler technique. What is the most appropriate next step in management?

A- Increase beclometasone dipropionate to 400mcg bd

B- Switch steroid to fluticasone propionate

C- Trial of leukotriene receptor antagonist

**D- Add salmeterol**

E- Add tiotropium

Q28. A 31-year-old female with no past medical history of note is admitted to hospital with dyspnoea and fever. She has recently returned from holiday in Turkey. A clinical diagnosis of pneumonia is made. On examination she is noted to have an ulcerated lesion on her upper lip consistent with reactivation of herpes simplex. Which organism is most associated with this examination finding? Streptococcus pneumoniae is associated with cold sores

A- Legionella pneumophilia

B- Staphylococcus aureus

**C- Streptococcus pneumoniae**

D- Pneumocystis carinii

E- Mycoplasma pneumoniae

Q29. A 24-year-old woman who is 34 weeks pregnant presents with pleuritic chest pain and shortness of breath. She has noticed some pain in her left calf for the past 3 days and on examination she has clinical signs consistent with a left calf deep vein thrombosis. What is the most appropriate investigation?

A- D-dimer

**B- Compression duplex Doppler**

C- Computed tomographic pulmonary angiography

D- Venogram

E- Ventilation-perfusion scan

Q30. Which one of the following paraneoplastic features is least commonly seen in patients with squamous cell lung cancer?

**A- Lambert-Eaton syndrome**

B- Hyperthyroidism

C- Hypertrophic pulmonary osteoarthropathy

D- Hypercalcaemia

E- Clubbing

Q31. An elderly patient with a history of chronic obstructive pulmonary disease is admitted following an infective exacerbation. The posterioranterior (PA) chest x-ray on admission shows a unilateral pleural effusion. Which one of the following is the most useful next line investigation?

A- Bronchoscopy

B- Pleural biopsy

C- Computed tomography

**D- Ultrasound**

E- Lateral chest x-ray

Q32. Which one of the following markers is most useful for monitoring the progression of patients with chronic obstructive pulmonary disease?

A- FEV1/FVC ratio

B- Lifestyle questionnaire

C- Oxygen saturations

**D- FEV1**

E- Number of exacerbations per year

Q33. A 24-year-old male is admitted with acute severe asthma. Treatment is initiated with 100% oxygen, nebulised salbutamol and ipratropium bromide nebulisers and IV hydrocortisone. Despite initial treatment there is no improvement. What is the next step in management?

A- IV aminophylline

**B- IV magnesium sulphate**

C- IV salbutamol

D- Non-invasive ventilation

E- IV adrenaline

Q34. A 29-year-old man presents to the Emergency Department with dyspnoea. He has no past medical history of note other than a fractured ankle five months ago. On examination he has reduced breath sounds on the left side. The trachea is central and oxygen saturations are 98% on room air. A chest x-ray shows a pneumothorax on the left-side with a 3.5cm rim of air. There is no midline shift. What is the most appropriate initial management?

**A- Aspiration**

B- Chest drain

C- Discharge with outpatient follow-up x-ray

D- Give 28% oxygen via a Venturi mask

E- Insert a cannula into the 2nd intercostal space, midclavicular line

Q35. A 24-year-old heroin addict is admitted following an overdose. He is drowsy and has a respiratory rate of 6 / min. Which of the following arterial blood gas results (taken on room air) are most consistent with this?

A- pH = 7.49; pCO2 = 4.9 kPa; pO2 = 10.1 kPa

B- pH = 7.52; pCO2 = 2.9 kPa; pO2 = 13.1 kPa

**C- pH = 7.31; pCO2 = 7.4 kPa; pO2 = 8.1 kPa**

D- pH = 7.55; pCO2 = 3.4 kPa; pO2 = 14.3 kPa

E- pH = 7.32; pCO2 = 3.4 kPa; pO2 = 8.3 kPa

Q36. A 20-year-old man who has a family history of alpha-1 antitrypsin deficiency has genetic testing. The following results are received: A1AT genotype PiMZ What is the most likely outcome?

A- Weekly intravenous alpha1-antitrypsin protein concentrates in later life

B- Mild emphysema controlled with bronchodilator therapy

C- Death within 5-10 years

D- Lung transplantation in later life

**E- No evidence of lung disease**

Q37. A 19-year-old man presents as he is concerned he may be asthmatic. Which one of the following points in the history would make this diagnosis less likely?

A- Smoking since age of 16 years

**B- Peripheral tingling during episodes of dyspnoea**

C- Peripheral blood eosinophilia

D- Chest tightness whilst exercising

E- History of eczema

Q38. Which one of the following is least associated with Kartagener's syndrome?

A- Male subfertility

B- Recurrent sinusitis

**C- Malabsorption**

D- Dextrocardia

E- Bronchiectasis

Q39. A 44-year-old man who is known to be HIV positive presents with shortness-of-breath. Which one of the following features is most characteristic of Pneumocystis carinii pneumonia?

A- Usually occurs when the CD4 count is 200-300/mm³

B- Absence of fever

C- Productive cough

D- Oxygen saturations usually improve after short period of exertion

**E- Normal chest auscultation**

Q40. A 52-year-old woman with a history of breast cancer is admitted with acute dyspnoea. Her respiratory rate on admission is 42 / min and her oxygen saturations are 87% on room air. A pulmonary embolism is suspected and she is transferred to the high dependency unit after being treated with oxygen and enoxaparin. Which one of the following would be strongest indication for thrombolysis?

A- Extensive deep venous thrombosis

**B- Hypotension**

C- Patient choice following informed consent

D- Hypoxaemia despite high flow oxygen

E- ECG showing right ventricular strain

Q41. A 67-year-old female is referred to the acute medical unit with an infective exacerbation of COPD. Despite maximal medical therapy the arterial blood gases continue to show type II respiratory failure. You are asked to consider non-invasive ventilation. At what pH is the patient most likely to receive benefit from non-invasive ventilation?

A- pH 7.13

B- pH 7.18

C- pH 7.23

**D- pH 7.29**

E- pH 7.37

Q42. A 35-year-old female with sarcoidosis is started on a course of prednisolone. Which one of the following is a suitable indication for commencing steroid therapy in such patients?

A- Bilateral hilar lymphadenopathy

B- Arthralgia

**C- Hypercalcaemia**

D- Serum ACE > 120 u/l

E- Erythema nodosum

Q43. A 54-year-old man is investigated for a chronic cough. A chest x-ray arranged by his GP shows a suspicious lesion in the right lung. He has no past history of note and is a life-long non-smoker. An urgent bronchoscopy is arranged which is normal. What is the most likely diagnosis? Lung adenocarcinoma most common type in non-smokers peripheral lesion

A- Lung sarcoma

B- Squamous cell lung cancer

**C- Lung adenocarcinoma**

D- Small cell lung cancer

E- Lung carcinoid

Q44. A 45-year-old dairy farmer presents with increasing shortness-of-breath on exertion. He is a non-smoker and has no respiratory history of note. His symptoms seem to become much worse when he is around the farm and are associated with chest tightness and a non-productive cough. A diagnosis of extrinsic allergic alveolitis is suspected. Which one of the following is most likely to be responsible?

A- Mycoplasma pneumoniae

B- Isocyanate based pesticides

**C- Contaminated hay**

D- Cow faeces

E- Ryegrass (Lolium sp.)

Q45. A 62-year-old female is admitted with a suspected infective exacerbation of COPD. A chest x-ray shows no evidence of consolidation. What is the most likely causative organism?

A- Pseudomonas aeruginosa

**B- Haemophilus influenzae**

C- Staphylococcus aureus

D- Streptococcus pneumoniae

E- Moraxella catarrhalis

Q46. You review a 67-year-old man who has chronic obstructive pulmonary disease (COPD). On examination there is evidence of cor pulmonale with a significant degree of pedal oedema. His FEV1 is 43%. During a recent hospital stay his pO2 on room air was 7.5 kPa. Which one of the following interventions is most likely to increase survival in this patient?

A- Inhaled corticosteroid

B- Heart-lung transplant

C- Pulmonary rehabilitation

D- Loop diuretic therapy

**E- Long-term oxygen therapy**

Q47. A 49-year-old male with a past history of alcohol excess presents to the Emergency Department due to fever and shortness of breath. Chest x-ray reveals a cavitating lesion in the right middle zone. What is the most likely causative organism?

**A- Klebsiella**

B- Bartonella

C- Pneumococcus

D- Coxiella burnetii

E- Haemophilus influenzae

Q48. A 55-year-old man is referred to the medical admissions unit. He recently returned from a holiday in Italy and has failed to respond to a course of co-amoxiclav for a suspected lower respiratory tract infection. Chest x-ray shows bilateral infiltrates. Bloods are as follows: Na+ 122 mmol/l K + 4.3 mmol/l Urea 8.4 mmol/l Creatinine 130 µmol/l What is the likely diagnosis?

A- Goodpasture's syndrome

**B- Legionella pneumonia**

C- Pneumocystis carinii pneumonia

D- Pulmonary eosinophilia

E- Mycoplasma pneumonia

Q49. Each one of the following may result in bronchiectasis, except:

A- Kartagener's syndrome

**B- Amyloidosis**

C- Selective IgA deficiency

D- Lung cancer

E- Allergic bronchopulmonary aspergillosis

Q50. Which one of the following causes of lung fibrosis predominately affect the lower zones?

**A- Methotrexate**

B- Sarcoidosis

C- Coal worker's pneumoconiosis

D- Ankylosing spondylitis

E- Extrinsic allergic alveolitis

Q51. A preliminary diagnosis of extrinsic allergic alveolitis in a 55-year-old man. Which one of the following features would most support this diagnosis?

A- Clubbing

B- Eosinophilia

C- Cyanosis

**D- Fibrosis in the upper zones**

E- History of working in the steel industry

Q52. You are reviewing the management of a number of patients with chronic obstructive pulmonary disease (COPD). Which one of the following factors should prompt an assessment for long-term oxygen therapy?

A- FEV1 54% of predicted

**B- Haemoglobin of 18.4 g/dl**

C- Body mass index 18.8 kg / m^2

D- Oxygen saturations of 93% on room air

E- FEV1/FVC of 0.47

Q53. Each one of the following predisposes to the development of obstructive sleep apnoea, except: Sleep apnoea causes include obesity and macroglossia

A- Acromegaly

**B- Chronic obstructive pulmonary disease**

C- Amyloidosis

D- Obesity

E- Hypothyroidism

Q54. Which one of the following is not part of the diagnostic criteria of acute respiratory distress syndrome (ARDS)?

A- Bilateral infiltrates on CXR

B- Non-cardiogenic

C- pO2/FiO2 < 200 mmHg

**D- Respiratory rate > 24/min**

E- Acute onset

Q55. A 62-year-old man with a history of recurrent lower respiratory tract infections is diagnosed as having bilateral bronchiectasis following a high resolution CT scan. Which one of the following is most important in the long term control of his symptoms? Symptom control in non-CF bronchiectasis- inspiratory muscle training + postural drainage

A- Inhaled corticosteroids

B- Prophylactic antibiotics

C- Surgery

**D- Postural drainage**

E- Mucolytic therapy

Q56. Which one the following statements regarding asbestos is not correct?

**A- Pleural plaques are premalignant**

B- Asbestosis typically affects the lower zones

C- Crocidolite (blue) asbestos is the most dangerous form

D- Severity of asbestosis is related to the length of exposure

E- Mesothelioma may develop following minimal exposure

Q57. Which of the following features is associated with a good prognosis in sarcoidosis? Erythema nodosum is associated with a good prognosis in sarcoidosis

A- Insidious onset

B- Splenomegaly

C- Disease in black people

D- Stage III features on CXR

**E- Erythema nodosum**

Q58. A 43-year-old man is admitted due to shortness of breath and is noted to have a cavitating lesion on his chest x-ray. Which one of the following conditions is not part of the differential diagnosis?

A- Lung cancer

B- Pulmonary embolism

C- Wegener's granulomatosis

**D- Churg-Strauss syndrome**

E- Tuberculosis

Q59. A 45-year-old woman who is a known asthmatic comes for review. In the past two years she has had around six exacerbations of asthma requiring oral steroids. Her current medication includes salbutamol 2 puffs prn, salmeterol 50mcg bd and beclometasone 200 mcg 1 puff bd. You note from the records that her BMI is 31 kg/m^2, she is a non-smoker and has a good inhaler technique. What is the most appropriate next step in management?

**A- Increase beclometasone to 200 mcg 2 puffs bd**

B- Referral to a dietician

C- Add oral theophylline

D- Add oral montelukast

E- Add inhaled tiotropium

Q60. A 57-year-old female presents to the Emergency Department with shortness of breath and pleuritic chest pain. She has no past medical history of note and enjoys good health. Investigations reveal a nonmassive pulmonary embolism. What is the recommended length of warfarinisation for this patient?

A- 6 weeks

B- 3 months

**C- 6 months**

D- 12 months

E- Life-long

Q61. Each one of the following is a known cause of occupational asthma, except:

A- Isocyanates

**B- Cadmium**

C- Soldering flux resin

D- Flour

E- Platinum salts

Q62. A 63-year-old man presents to the respiratory out-patients department with shortness of breath. Investigations reveal a fibrosing lung disease. A sputum sample however is positive for acid-fast bacilli. Which of the following may have predisposed him to developing tuberculosis?

A- Cadmium

B- Coal dust

C- White asbestos fibres

D- Blue asbestos fibres

**E- Silica**

Q63. A 52-year-old male is admitted to hospital with a temperature of 38.2 C and a 3 days history of a productive cough. He has been generally unwell for the past 10 days with flu-like symptoms. On examination blood pressure is 96/60 mmHg and the heart rate is 102 / min. Chest x-ray shows bilateral lower zone consolidation. What is the most likely causative organism? Preceding influenza predisposes to Staphylococcus aureus pneumonia

A- Moraxella catarrhalis

B- Mycoplasma pneumoniae

C- Klebsiella

**D- Staphylococcus aureus**

E- Chlamydia pneumoniae

Q64. You review a 27-year-old woman in the Emergency Department who has been admitted with an acute exacerbation of her asthma. Which one of the following features is most likely to indicate a life-threatening attack?

A- Failure to improve after nebulised salbutamol 5mg

B- Cannot complete sentences

C- Oxygen saturations of 94% on room air

**D- Peak flow of 30% best or predicted**

E- Respiratory rate of 42 / min

Q65. Which of the following is not a recognised cause of pulmonary eosinophilia?

A- Churg-Strauss syndrome

B- Sulphonamides

**C- Extrinsic allergic alveolitis**

D- Loffler's syndrome

E- Allergic bronchopulmonary aspergillosis

Q66. You review a 60-year-old woman in the COPD clinic. She was diagnosed with COPD four years ago and is currently maintained on a salbutamol inhaler as required and a tiotropium inhaler regularly. She has recently managed to give up smoking and her latest FEV1 was 42% of predicted. Despite her current therapy she is have frequent exacerbations. What is the most appropriate next step in her management?

A- Salmeterol inhaler

**B- Combined salmeterol + fluticasone inhaler**

C- Long term oxygen therapy

D- Betamethasone inhaler

E- Oral aminophylline

Q67. A 65-year-old woman with a history of chronic obstructive pulmonary disease (COPD) is admitted to the Emergency Department with breathlessness. This is her first admission with an exacerbation of COPD. Blood gases taken on room air shortly after admission are as follows: pH 7.38 pCO2 4.9 kPa pO2 8.8 kPa What should her target oxygen saturations be?

**A- 94-98%**

B- 88-92%

C- 92-94%

D- >98%

E- > 95% first 48 hours, > 90% rest of admission

Q68. A 30-year-old female with a past history of asthma presents to the Emergency Department with pleuritic chest pain. Chest x-ray shows a right-sided pneumothorax with a 1.5cm rim of air and no mediastinal shift. What is the most appropriate management?

A- Admit for 48 hours observation

B- Intercostal drain insertion

**C- Aspiration**

D- Discharge

E- Immediate 14G cannula into 2nd intercostal space, mid-clavicular line

Q69. Which one of the following is least associated with bronchiectasis?

A- Hypogammaglobulinaemia

B- Allergic bronchopulmonary aspergillosis

C- Measles

D- Cystic fibrosis

**E- Sarcoidosis**

Q70. A 43-year-old lifelong non-smoker is diagnosed as having emphysema. Further tests reveal that he has alpha-1 antitrypsin deficiency. What is the main role of alpha-1 antitrypsin in the body?

A- Nicotinic receptor activator

**B- Protease inhibitor**

C- 5-alpha-reductase inhibitor

D- Trypsin activator

E- Phosphodiesterase inhibitor

Q71. A 58-year-old man is investigated for a chronic cough and is found to have lung cancer. He enquires whether it may be work related. Which one of the following is most likely to increase his risk of developing lung cancer?

A- Isocyanates

B- Soldering flux resin

**C- Passive smoking**

D- Coal dust

E- Polyvinyl chloride

Q72. A 54-year-old man is admitted with suspected pulmonary embolism. He has no past medical history of note. Blood pressure is 120/80 mmHg with a pulse of 90/min. The chest x-ray is normal. Following treatment with low-molecular weight heparin, what is the most appropriate initial lung imaging investigation to perform? CTPA is the first line investigation for PE according to current BTS guidelines

A- Pulmonary angiography

B- Echocardiogram

C- MRI thorax

D- Ventilation-perfusion scan

**E- Computed tomographic pulmonary angiography**

Q73. A 39-year-old man presents with shortness of breath following one week of flu-like symptoms. He also has a non-productive cough but no chest pain. A chest x-ray shows bilateral consolidation and examination reveals erythematous lesions on his limbs and trunk. Which one of the following investigations is most likely to be diagnostic? Mycoplasma?- serology is diagnostic

A- Cold agglutins

B- Sputum culture

C- Urinary antigen for Legionella

**D- Serology for Mycoplasma**

E- Blood culture

Q74. Which type of hypersensitivity reaction predominates in the acute phase of extrinsic allergic alveolitis?

A- Type I

B- Type II

**C- Type III**

D- Type IV

E- Type V

Q75. A 60-year-old woman who has recently been diagnosed with chronic obstructive pulmonary disease (COPD) presents for review. She is still occasionally breathless despite using a short-acting muscarinic antagonist (SAMA) as required. Her FEV1 is 45% of predicted and she has managed to stop smoking. Of the following options, which one is the most appropriate next step in management? Combivent)

A- Switch to a combined short-acting beta2-agonist and muscarinic antagonist inhaler (e.g.

B- Long-acting beta2-agonist

**C- Long-acting beta2-agonist + inhaled corticosteroid (ICS) in a combination inhaler**

D- Inhaled corticosteroid

E- Use the SAMA regularly (e.g. 2 puffs qds)

Q76. A 54-year-old woman with chronic obstructive pulmonary disease (COPD) is prescribed an inhaled corticosteroid. What is the main therapeutic benefit of inhaled corticosteroids in patients with COPD? COPD- reason for using inhaled corticosteroids- reduced exacerbations

A- Reduced severity of exacerbations

B- Improved all cause mortality

C- Reduced use of bronchodilators

D- Slows decline in FEV1

**E- Reduced frequency of exacerbations**

Q77. A 55-year-old man is diagnosed with non-small cell lung cancer. Which one of the following is a contraindication to surgery?

A- Pleural effusion

**B- FEV1 of 1.3 litres**

C- Continuation of smoking

D- Hypercalcaemia

E- Stage T2N1

Q78. A 31-year-old woman is investigated for lethargy, arthralgia and cough. Over the past few weeks she has also developed painful erythematous nodules on both shins. Respiratory examination is normal. A chest x-ray is performed which is reported as follows: Bilateral mediastinal nodal enlargement. No evidence of lung parenchymal disease. Normal cardiac size. Given the likely diagnosis, what is the most appropriate course of action?

A- Inhaled corticosteroids

B- Oral cyclophosphamide

C- Oral corticosteroids

D- Oral methotrexate

**E- Observation**

Q79. A newborn female baby is diagnosed with cystic fibrosis following an episode of meconium ileus shortly after birth. Which one of the following is least likely to occur as a consequence of her underlying diagnosis?

A- Delayed puberty

B- Nasal polyps

C- Diabetes mellitus

D- Rectal prolapse

**E- Arthropathy**

Q80. A 23-year-old female who is 28 weeks pregnant presents with shortness-of-breath and right-sided pleuritic chest pain. A diagnosis of pulmonary embolism is suspected. Which one of the following statements regarding the appropriate management is incorrect? pulmonary angiography pregnant women

A- Chest x-ray should be performed

B- Positive compression duplex Doppler may negate the need for further investigation

**C- Ventilation-perfusion scanning exposes the fetus to less radiation than computed tomographic**

D- D-dimer levels are of no use

E- Computed tomographic pulmonary angiography increases the lifetime risk of breast cancer in the

Q81. A 65-year-old man with a history of Parkinson's disease is referred to the respiratory clinic with shortness of breath. He has never smoked. Spirometry is performed: Percentage predicted FEV1 71% FVC 74% Which one of the following drugs is most likely to be responsible?

A- Levodopa

B- Entacapone

C- Ropinirole

D- Selegiline

**E- Pergolide**

Q82. Which one of the following is least associated with the development of COPD?

A- Cadmium exposure

B- Smoking

C- Coal dust

**D- Isocyanates**

E- Alpha-1 antitrypsin deficiency

Q83. A 33-year-old man is seen in the respiratory clinic. He was referred with poorly control asthma and has recently had salmeterol added in addition to beclometasone dipropionate inhaler 200mcg bd and salbutamol prn. There has unfortunately been no response to adding the salmeterol. What is the most appropriate action?

A- Stop salmeterol + trial of leukotriene receptor antagonist

B- Continue salmeterol + increase beclometasone dipropionate inhaler to 400mcg bd

C- Continue salmeterol + trial of leukotriene receptor antagonist

D- Stop salmeterol + trial of oral theophylline

**E- Stop salmeterol + increase beclometasone dipropionate inhaler to 400mcg bd**

Q84. What is the first line treatment in allergic bronchopulmonary aspergillosis?

A- Itraconazole

B- Nebulised pentamidine

C- Fluconazole

D- Cyclophosphamide

**E- Prednisolone**

Q85. A 45-year-old female with a 30 pack-year history of smoking is admitted to the Emergency Department with shortness of breath. Arterial blood gases taken on room air are as follows: pH 7.49 pCO2 2.9 kPa pO2 8.8 kPa Which one of the following is the most likely diagnosis?

A- Salicylate overdose

B- Chronic obstructive pulmonary disease

**C- Pulmonary embolism**

D- Vomiting

E- Anxiety

Q86. Which one of the following interventions is most likely to increase survival in patients with COPD?

A- Home nebulisers

B- Tiotropium inhaler

C- Long-term steroid therapy

**D- Smoking cessation**

E- Long-term oxygen therapy

Q87. A 67-year-old man is referred to the respiratory clinic. He has a past history of tuberculosis as a child but is otherwise normally fit and well. Over the past two months he has had a cough, lost one stone in weight and had four episodes of haemoptysis. A chest x-ray shows a solid mass occupying the right upper zone. Investigation results include the following: Aspergillus precipitin antibody Positive What is the most likely diagnosis?

A- Lung abscess

B- Invasive aspergillosis

**C- Aspergilloma**

D- Reactivation of primary tuberculosis

E- Allergic bronchopulmonary aspergillosis

Q88. Which one of the following is the most common type of lung cancer in the UK?

A- Small cell

**B- Squamous cell**

C- Adenocarcinoma

D- Large cell

E- Carcinoid

Q89. A 19-year-old male with no past medical history presents to the Emergency Department with anterior chest pain and shortness of breath. Blood pressure is 110/80 mmHg and his pulse is 84 bpm. The chest xray is reported as showing a 50% pneumothorax with no mid-line shift. What is the most appropriate management?

A- Intercostal drain insertion

B- Immediate 14G cannula into 2nd intercostal space, mid-clavicular line

C- Discharge

D- Admit for 48 hours observation and repeat chest x-ray

**E- Aspiration**

Q90. A 54-year-old woman with a 30-pack-year history of smoking presents due to increasing breathlessness. A diagnosis of chronic obstructive pulmonary disease (COPD) is suspected. Which of the following diagnostic criteria should be used when assessing a patient with suspected COPD?

A- FEV1 > 70% of predicted value + FEV1/FVC < 60%

**B- FEV1/FVC < 70% + symptoms suggestive of COPD**

C- FEV1 < 70% of predicted value + FEV1/FVC < 70%

D- FEV1 < 80% of predicted value + FEV1/FVC < 60%

E- FEV1 < 70% of predicted value + FEV1/FVC > 70%

Q91. Which one of the following is responsible for malt workers' lung? Aspergillus clavatus causes malt workers' lung, a type of EAA

**A- Aspergillus clavatus**

B- Avian proteins

C- Mycobacterium avium

D- Thermoactinomyces candidus

E- Micropolyspora faeni

Q92. A 29-year-old man with HIV is admitted with shortness of breath. He has recently emigrated from South Africa and has only just started taking anti-retroviral medication. Auscultation of his chest is unremarkable although chest x-ray shows bilateral pulmonary interstitial shadowing. What is the investigation of choice?

**A- Bronchoalveolar lavage**

B- CT thorax

C- Transbronchial biopsy

D- Sputum culture

E- Blood culture

Q93. A 65-year-old man is admitted with fever and dyspnoea. A chest x-ray shows extensive shadowing in the right lower zone. Which one of the following is associated with a poor prognosis in patients with community-acquired pneumonia?

A- Diastolic blood pressure 65 mmHg

B- Sodium 131 mmol/l

**C- Urea 12 mmol/l**

D- White blood cell 27 \* 109/l

E- Respiratory rate 25/min

Q94. A 29-year-old man who is being investigated for haemoptysis and a chronic cough has a blood screen: Hb 12.9 g/dl Plt 248 \* 109 /l WBC 5.4 \* 109 /l ESR 11 mm/hr Na+ 138 mmol/l K + 5.0 mmol/l Bicarbonate 19 mmol/l Urea 14.0 mmol/l Creatinine 178 µmol/l Urine dipstick shows blood ++. What is the most likely diagnosis?

A- Wegener's granulomatosis

B- Lung cancer with renal metastases

C- Churg-Strauss syndrome

D- Renal cancer with lung metastases

**E- Goodpasture's syndrome**

Q95. A 38-year-old man is reviewed in the respiratory clinic complaining of episodic wheezing whilst playing rugby. There is no history of cough, atopy or smoking. He is generally fit and well and has no past medical history of note. Clinical examination is unremarkable. Following history and examination it is thought he has an intermediate probability of asthma. Which one of the following is the most appropriate next investigation? Asthma- intermediate probability- do spirometry first-line

**A- Spirometry**

B- Serial peak expiratory flow measurements

C- Histamine stimulation test

D- Methacholine stimulation test

E- A trial of inhaled steroids with FEV1 measurements before and after

Q96. A 56-year-old man is admitted with type II respiratory failure secondary to COPD but fails to respond to maximal medical therapy. It is decided that a trial of non-invasive ventilation in the form of bi-level pressure support should be given. What are the most appropriate initial settings for the ventilator?

**A- IPAP = 10 cm H2O; EPAP = 5 cm H2O**

B- IPAP = 15 cm H2O; EPAP = 15 cm H2

C- IPAP = 50 cm H2O; EPAP = 20 cm H2O

D- IPAP = 20 cm H2O; EPAP = 50 cm H2O

E- IPAP = 5 cm H2O; EPAP = 12 cm H2O

Q97. A 45-year-old woman who is known to have systemic lupus erythematosus (SLE) is referred to the respiratory clinic with increased shortness-of-breath. A number of investigations are ordered including transfer factor of the lung for carbon monoxide (TLCO), which is elevated. Which one of the following respiratory complications of SLE is associated with this finding?

A- Acute lupus pneumonitis

B- Pulmonary hypertension

**C- Alveolar haemorrhage**

D- Respiratory muscle weakness

E- Pulmonary embolism

Q98. A 77-year-old man with a history of type 2 diabetes mellitus is admitted to hospital with worsening shortness-of-breath. He started a course of amoxicillin given by his GP 5 days ago. On examination blood pressure is 88/60 mmHg with a respiratory rate of 36 / min. A chest x-ray reveals left lower lobe consolidation. Arterial blood gases on air are as follows: pH 7.37 pCO2 5.5 kPa pO2 9.1 kPa What is the most suitable antibiotic therapy?

A- Oral amoxicillin + erythromycin

B- Intravenous ceftriaxone

**C- Intravenous co-amoxiclav + clarithromycin**

D- Intravenous vancomycin + clarithromycin

E- Oral co-amoxiclav + erythromycin

Q99. Which one of the following is the main criteria for determining whether a patient with chronic obstructive pulmonary disease (COPD) should be offered long-term oxygen therapy? COPD- LTOT if 2 measurements of pO2 < 7.3 kPa

A- Two arterial blood gases measurements with pO2 < 6.3 kPa

B- One arterial blood gas measurement with pO2 < 7.7 kPa

C- One arterial blood gas measurement with pO2 < 8.3 kPa

D- One arterial blood gas measurement with pO2 < 8.0 kPa

**E- Two arterial blood gases measurements with pO2 < 7.3 kPa**

Q100. You are asked to interpret the post-bronchodilator spirometry results of a 56-year-old woman who has been complaining of progressive shortness-of-breath. FEV1/FVC 0.60 FEV1% predicted 60% What is the most appropriate interpretation of these results?

A- Poor techniquE- repeat spirometry

B- Asthma

C- COPD (stage 1- mild)

**D- COPD (stage 2- moderate)**

E- Pulmonary fibrosis

Q101. A 41-year-old man presents to his doctor with a persistent cough. This has been present for the past six months and for the past two weeks he has been coughing up blood on a daily basis. He also feels more short-of-breath when exerting himself than normal. He is a non-smoker and has no past medical history of note. On examination he is noted to have reduced air entry in the right upper zone. A chest x-ray shows a right upper lobe collapse and a subsequent bronchoscopy demonstrates a cherry-red lesion in the right superior lobar bronchus. What is the most likely diagnosis?

A- Small cell lung carcinoma

B- Large cell lung carcinoma.

**C- Lung carcinoid**

D- Bronchioloalveolar carcinoma

E- Bronchial adenocarcinoma

Q102. You are reviewing a 40-year-old man who is known to have bronchiectasis. What organism is most likely to be isolated from his sputum? Bronchiectasis: most common organism = Haemophilus influenzae

A- Streptococcus pneumoniae

B- Klebsiella spp.

**C- Haemophilus influenzae**

D- Pneumocystis jiroveci

E- Pseudomonas aeruginosa

Q103. A 37-year-old woman who is being treated as an inpatient for Mycoplasma pneumonia is reviewed. Unfortunately she is unable to tolerate clarithromycin due to severe nausea. What is the most suitable alternative antibiotic? Mycoplasma pneumonia if allergic/intolerant to macrolides- doxycycline

A- Linezolid

B- Cefaclor

C- Ciprofloxacin

D- Co-amoxiclav

**E- Doxycycline**

Q104. A 60-year-old female with a history of COPD presents to the Emergency Department with shortness of breath. Blood pressure is 120/80 mmHg and he pulse is 90 bpm. The chest x-ray shows a pneumothorax with a 2.5 cm rim of air and no mediastinal shift. What is the most appropriate management?

**A- Intercostal drain insertion**

B- Discharge

C- Admit for 48 hours observation and repeat chest x-ray

D- Immediate 14G cannula into 2nd intercostal space, mid-clavicular line

E- Aspiration

Q105. A 27-year-old man with no significant past medical history of note presents to the Emergency Department with a one day history of dyspnoea and right-sided pleuritic chest pain. A chest x-ray is taken which shows a right pneumothorax with a 2.5cm rim of air and no mediastinal shift. Aspiration is performed by the admitting doctor. He is reviewed four hours later. His dyspnoea has resolved but the chest x-ray shows that whilst the pneumothorax has improved there is still a 1.5cm rim of air. What is the most appropriate management?

A- Repeat aspiration

B- Intercostal drain insertion

C- Refer to a cardiothoracic surgeon for pleurodesis

D- Admit for observation

**E- Discharge with outpatient chest x-ray**

Q106. A 30-year-old woman is admitted to the Emergency Department with an exacerbation of asthma. On arrival her peak flow is 30% of predicted, respiratory rate is 36/min and oxygen saturations are 98% on 100% high-flow oxygen. She is given back-to-back nebulisers, intravenous hydrocortisone and started on a magnesium infusion. Which one of the following would be the strongest indicator of a need for intubation and ventilation?

A- PEFR 20% of predicted

**B- pH 7.31**

C- Patient preference after informed consent

D- Respiratory rate of 50 / min

E- Oxygen saturations of 95% on 100% high-flow oxygen

Q107. You are reviewing a man with haemoptysis in the rapid-access lung clinic. Which one of the following is the most significant risk factor for developing lung cancer?

A- Cryptogenic fibrosing alveolitis

B- Asbestos exposure for most of working life

C- 10 year period of smoking 'crack' cocaine 20 years ago

**D- 30 pack-year history of smoking**

E- 20 year history of recreational cannabis use

Q108. A 72-year-old man presents with gradually increasing shortness-of-breath on exertion over the past six months. He stopped smoking around 20 years ago and had a number of jobs including a builder and miner when he was younger. On auscultation of his chest fine crackles can be heard in both bases. Oxygen saturations are 95% on room air. A number of tests are arranged: spirometry: normal chest x-ray: diffuse reticular shadowing suggestive of fibrosis affecting the lower zones. Heart size normal. What is the most likely diagnosis?

A- Extrinsic allergic alveolitis

B- Histiocytosis

**C- Asbestosis**

D- Silicosis

E- Coal worker's pneumoconiosis

Q109. A 34-year-old steelworker presents complaining of episodic shortness of breath. This is particularly noted whilst at work where he describes feeling wheezy and having a tendency to cough. Which one of the following is the most appropriate diagnostic investigation? Serial peak flow measurements at work and at home are used to detect occupational asthma

A- Patch testing

B- High resolution computed tomography of thorax

**C- Serial peak flow measurements at work and at home**

D- Specific IgE measurements

E- Skin prick test

Q110. A 35-year-old patient with a history of asthma and epilepsy presents with haemoptysis and a worsening of his asthma. Blood tests reveal an eosinophilia and a positive pANCA. Which of the following drugs is most likely to have precipitated the likely diagnosis?

**A- Montelukast**

B- Phenytoin

C- Sodium valproate

D- Prednisolone

E- Sodium cromoglycate

Q111. A 63-year-old man is noted to have a pleural effusion on CXR. Which one of the following would typically cause a transudate?

A- Pancreatitis

B- Pneumonia

C- Yellow nail syndrome

**D- Hypothyroidism**

E- Dressler's syndrome

Q112. You are reviewing a patient with chronic obstructive pulmonary disease (COPD) who remains breathless despite using a salbutamol inhaler as required. Their FEV1 is 60%. What are the two main options? long-acting beta2-agoinst (LABA) antagonist (e.g. Combivent)

A- Long-acting beta2-agonist (LABA) or inhaled corticosteroid

B- Long-acting muscarinic antagonist (LAMA) + inhaled corticosteroid (ICS) in a combination inhaler or

C- Long-acting beta2-agonist (LABA) or LABA + inhaled corticosteroid (ICS) in a combination inhaler

D- Long-acting beta2-agonist (LABA) or regular combined short-acting beta2-agonist + muscarinic

**E- Long-acting beta2-agonist (LABA) or long-acting muscarinic antagonist (LAMA)**

Q113. A 62-year-old woman with recently diagnosed chronic obstructive pulmonary disease (COPD) presents for review. Her FEV1 is 65% of the predicted value. She has managed to give up smoking and was prescribed a salbutamol inhaler to use as required. Despite this she is still symptomatic and complains of wheeze and shortness of breath. What is the most appropriate next step?

A- Add an inhaled corticosteroid

**B- Add a long-acting muscarinic antagonist inhaler**

C- Refer for consideration of long-term oxygen therapy

D- Add oral theophylline

E- Add a combination long-acting beta2-agonist and corticosteroid inhaler

Q114. A 65-year-old life-long smoker with a significant past history of asbestos exposure is investigated for lung cancer. Given his history of both smoking and asbestos exposure, what is his increased risk of lung cancer?

A- 5

B- 10

**C- 50**

D- 500

E- 1,000

Q115. A 17-year-old male with a history of cystic fibrosis presents to clinic for annual review. What is the most appropriate advice regarding his diet?

A- High calorie and low fat with pancreatic enzyme supplementation for every meal

B- High calorie and low fat with pancreatic enzyme supplementation for evening meal

C- Normal calorie and low fat with pancreatic enzyme supplementation for every meal

D- High calorie and high fat with pancreatic enzyme supplementation for evening meal

**E- High calorie and high fat with pancreatic enzyme supplementation for every meal**

Q116. A chest x-ray of a patient with sarcoidosis shows bilateral hilar lymphadenopathy accompanied with interstitial infiltrates. What chest x-ray stage does this correspond to? Sarcoidosis CXR 1 = BHL 2 = BHL + infiltrates 3 = infiltrates 4 = fibrosis

A- Stage 0

B- Stage 1

**C- Stage 2**

D- Stage 3

E- Stage 4

Q117. A 66-year-old man with a history of chronic obstructive pulmonary disease (COPD) is referred by his GP to the Rapid Access Chest Clinic. He was recently treated with several courses of antibiotics and steroids for an exacerbation of COPD which failed to completely resolve. A chest x-ray was reported as follows: There is a suspicious 3cm mass in the right hilum. Background changes of COPD. Urgent referral to the chest clinic is advised. \*\*\*Report faxed to GP\*\*\* Recent blood tests are also reviewed: Hb 14.2 g/dl Platelets 323 \* 109 /l WBC 9.1 \* 109 /l Na+ 128 mmol/l K + 3.9 mmol/l Urea 6.4 mmol/l Creatinine 99 µmol/l On examination there is no evidence of clubbing. Examination of chest demonstrates a fixed monophonic wheeze in the right lung. What is the most likely underlying cause?

A- Tuberculosis

B- Sarcoidosis

C- Squamous cell lung cancer

**D- Small cell lung cancer**

E- Lymphoma

Q118. A 49-year-old female is admitted to the Emergency Department with shortness of breath. On examination the pulse is 114 bpm with blood pressure 106/66 mmHg, temperature 37.7ºC and respiratory rate 30/min. Examination of the cardiorespiratory system is unremarkable with a peak expiratory flow rate of 400 l/min. Arterial blood gases on air reveal: pH 7.41 pCO2 4.0 kPa pO2 7.2 kPa Following the initiation of oxygen therapy, what is the next most important step in management?

A- IV aminophylline

B- IV hydrocortisone

**C- Low molecular weight heparin**

D- IV fluids

E- IV co-trimoxazole

Q119. A 28-year-old man who is immunosuppressed secondary to HIV infection is admitted to hospital with dyspnoea and a dry cough. His chest x-ray shows bilateral interstitial pulmonary infiltrates and he is started on co-trimoxazole empirically. The following morning he complains of a sudden worsening of his dyspnoea associated with left-sided chest pain. Which complication is most likely to have developed? Pneumocystis jiroveci pneumonia- pneumothorax is a common complication

A- Empyema

B- Pulmonary embolism

C- Acute respiratory distress syndrome

D- Pericarditis

**E- Pneumothorax**

Q120. A middle-aged woman is admitted to the Emergency Department with pleuritic chest pain ten days after having a hysterectomy. There is a clinical suspicion of pulmonary embolism. What is the most common chest x-ray finding in patients with pulmonary embolism? Pulmonary embolism- normal CXR

A- Right heart enlargement

**B- Normal**

C- Pleural effusion

D- Linear atelectasis

E- Dilatation of the pulmonary vessels proximal to the embolism

Q121. A 25-year-old man is referred due to pain and swelling in his knees and ankles. On examination he has a painful, erythematous rash on his legs. The following results are obtained: Rheumatoid factor Negative ESR 94 mm/hr Chest x-ray Hilar lymphadenopathy What is the most likely outcome? The majority of patients with sarcoidosis get better without treatment

A- Improvement following a course of prednisolone

B- Scarring and ulceration of skin

**C- Spontaneous improvement**

D- Progressive arthritis

E- Renal replacement therapy in 20 years time

Q122. A 35-year-old female presents with shortness of breath. The following blood gases are obtained on room air: pH 7.54 pCO2 1.8 kPa pO2 12.4 kPa Which one of the following should not be included on the list of differential diagnoses?

**A- Opiate overdose**

B- Pulmonary embolism

C- Pregnancy

D- Encephalitis

E- Anxiety

Q123. A 74-year-old woman has a chest x-ray organised by her GP due to a chronic cough. The chest x-ray shows a cavity in the left upper zone inside of which there is a solid mass. An aspergilloma is suspected. What is the most appropriate next test?

A- Sputum culture

**B- Serology for Aspergillus precipitins**

C- Blood culture

D- Bronchoscopy with biopsy

E- Transthoracic fine needle biopsy

Q124. A 24-year-old man who has been discharged following admission for a spontaneous pneumothorax ask for advice about flying. During his stay in hospital the pneumothorax was aspirated and a check x-ray revealed no residual air. What is the earliest time he should fly?

A- Immediately

B- 24 hours

C- 3 days

**D- 2 weeks**

E- 2 months

Q125. When assessing a patient with suspected chronic obstructive pulmonary disease, which one of the following is least relevant?

A- Smoking history

B- Chest x-ray

C- Full blood count

**D- Peak expiratory flow**

E- Spirometry

Q126. A 19-year-old with 'brittle asthma' is seen in clinic. Three weeks ago she started taking prednisolone 15mg od as her asthma was poorly controlled on beclometasone dipropionate 800 mcg bd., salmeterol, oral montelukast and salbutamol as required. What should happen with regards to inhaled steroids?

A- Continue beclometasone dipropionate 800 mcg bd

B- Stop inhaled steroids

**C- Increase beclometasone dipropionate to 1000 mcg bd**

D- Decrease beclometasone dipropionate to 400 mcg bd

E- Use beclometasone dipropionate 200 mcg on an 'as required' basis with salbutamol

Q127. You are reviewing a patient with chronic obstructive pulmonary disease (COPD) who remains breathless despite using an ipratropium bromide inhaler as required. Her FEV1 is 40%. What are the two main options? inhaler antagonist (e.g. Combivent) long-acting beta2-agoinst (LABA)

A- Long-acting beta2-agonist (LABA) or inhaled corticosteroid

**B- Long-acting muscarinic antagonist (LAMA) or LABA + inhaled corticosteroid (ICS) in a combination**

C- Long-acting beta2-agonist (LABA) or long-acting muscarinic antagonist (LAMA)

D- Long-acting beta2-agonist (LABA) or regular combined short-acting beta2-agonist + muscarinic

E- Long-acting muscarinic antagonist (LAMA) + inhaled corticosteroid (ICS) in a combination inhaler or

Q128. Non-invasive ventilation (NIV) is least likely to be successful in which one of the following scenarios?

A- COPD

B- Chest wall deformity

C- Obstructive sleep apnoea

D- Weaning from tracheal intubation

**E- Bronchiectasis**

Q129. A 24-year-old man who has developed a chronic cough and wheeze after starting a new job presents for review. His peak flow measurements are significantly reduced whilst at work and improve at the weekend. Which one of the following substances is most frequently associated with this kind of asthma? Isocyanates are the most common cause of occupational asthma

A- Cadmium

B- Cement dust

C- Diesel fumes

**D- Isocyanates**

E- Organophosphates (insecticides)

Q130. A 27-year-old man with a history of 'brittle' asthma is admitted to the Emergency Department with an asthma attack. The paramedics have already administered high-flow oxygen and nebulised salbutamol. He is unable to complete sentences, has a tight bilateral expiratory wheeze and is unable to perform a peak flow reading. His respiratory rate is 30 / minute, sats 94% (on high-flow oxygen) and pulse 120 / minute. He is immediately given intravenous hydrocortisone and nebulised salbutamol is given continuously. After five minutes there is no improvement and intravenous magnesium sulphate is given. After another five minutes an arterial blood gas sample is taken: pH 7.34 pCO2 6.9 kPa pO2 8.8 kPa What is the most appropriate management?

A- Non-invasive ventilation

B- Add intravenous aminophylline

C- Give a further bolus of intravenous hydrocortisone

D- Add nebulised ipratropium bromide and review in 10 minutes

**E- Intubation**

Q131. A 31-year-old man with a history of asthma presents to the Emergency Department with dyspnoea not responding to his salbutamol inhaler. On examination he is noted to have reduced breath sounds on the right side and a chest x-ray confirms a pneumothorax with a 1.5cm rim of air. A pleural aspiration is performed and the patient's dyspnoea resolves. What advice should he be given before discharge? guidelines

A- Air travel should be avoided for the next 12 months

B- His asthma treatment should be increased to the next step on the British Thoracic Society

C- Playing wind instruments such as the trombone should be avoided for the next 12 months

**D- Scuba diving should be avoided for life**

E- Vigorous exercise should be avoided for the next 3 months

Q132. Each one of the following is a risk factor for lung cancer, except:

A- Radon

B- Cryptogenic fibrosing alveolitis

**C- Coal dust**

D- Asbestos

E- Arsenic

Q133. A 42-year-old woman presents with pyrexia and a productive cough. Around 10 days ago she developed symptoms consistent with a flu-like illness. For around 4-5 days she was in bed with myalgia, fever and lethargy. Initially there was an improvement in her condition but over the past three days she has developed a cough productive of thick pink-yellow sputum. On examination there are scattered crackles in the right base. Her symptoms are not severe enough to warrant admission and oral amoxicillin is prescribed. Which other medication should also be given?

A- Aciclovir

B- Ciprofloxacin

C- Oseltamivir

**D- Flucloxacillin**

E- Penicillin V

Q134. You review a 28-year-old woman with no past medical history of note. For the past week she has being experiencing left sided pleuritic chest pain. Her GP treated her for pleurisy with amoxicillin but there has been no improvement in her symptoms. She denies any shortness of breath and oxygen saturations on room air are 98%. A chest x-ray shows a 20% pneumothorax on the left side. What is the most appropriate management?

A- Observe for 24 hours before discharging with standard advice

B- Insert a chest drain

**C- Discharge with standard advice**

D- Aspiration

E- Observe for 48 hours then repeat chest x-ray

Q135. What is the mode of inheritance of alpha-1 antitrypsin deficiency? Alpha-1 antitrypsin deficiency- autosomal recessive / co-dominant

A- Mitochondrial

B- X-linked recessive

C- Polygenic

**D- Autosomal recessive**

E- Autosomal dominant

## **Chapter 8 Rheumatology**

Q1. Reactive arthritis is associated with which one of the following HLA antigens?

**A- HLA-B27**

B- HLA-A3

C- HLA-DR4

D- HLA-B5

E- HLA-DR3

Q2. A 47-year-old man with a history of chronic sinusitis presents with shortness of breath to the Emergency Department. Initial investigations reveal: Hb 10.4g/dl Platelets 477 \* 109 /l WCC 14.3 \* 109 /l ESR 92 mm/h Urea 20 mmol/l Creatinine 198 µmol/l Urine dipstick blood +++ What is the most likely diagnosis?

A- Mixed cryoglobulinaemia

B- Churg-Strauss syndrome

**C- Wegener's granulomatosis**

D- Haemolytic uraemic syndrome

E- Henoch-Schonlein purpura

Q3. A 50-year-old female with a history of rheumatoid presents with a suspected septic knee joint. A diagnostic aspiration is performed and sent to microbiology. Which of the following organisms is most likely to be responsible?

**A- Staphylococcus aureus**

B- Staphylococcus epidermidis

C- Escherichia coli

D- Neisseria gonorrhoeae

E- Streptococcus pneumoniae

Q4. Low levels of which one of the following types of complement are associated with the development of systemic lupus erythematous?

**A- C4**

B- C5

C- C6

D- C7

E- C8

Q5. Which one of the following is not a risk factor for developing osteoporosis?

A- Smoking

**B- Obesity**

C- Sedentary lifestyle

D- Premature menopause

E- Female sex

Q6. A health trust in the United Kingdom which serves a population of 100,000 is planning services for patients with rheumatoid arthritis. How many of the population would be expected to have the disease?

A- 100

B- 300

C- 1,000

D- 2,000

E- 10,000

Q7. A 31-year-old female intolerant of methotrexate is started on azathioprine for rheumatoid arthritis. Routine blood monitoring shows: Hb 7.9 g/dl Plt 97 \* 109 /l WBC 2.7 \* 109 /l Which of the following factors will predispose her to azathioprine toxicity?

A- Cimetidine

B- Rifampicin

C- Fast acetylator status

**D- Thiopurine methyltransferase deficiency**

E- Alcohol excess

Q8. Which of the following features are not typically seen in a patient with adult onset Still's disease?

A- Maculopapular rash

**B- Rheumatoid factor**

C- Pyrexia

D- High ferritin level

E- Lymphadenopathy

Q9. A 34-year-old woman with a history of antiphospholipid syndrome presents with a swollen and painful leg. Doppler ultrasound confirms a deep vein thrombosis (DVT). She had a previous DVT 4 months ago and was taking warfarin (with a target INR of 2-3) when the DVT occurred. How should her anticoagulation be managed?

**A- Life-long warfarin, increase target INR to 3- 4**

B- Add in life-long low-dose aspirin

C- A further 6 months warfarin, target INR 2- 3

D- A further 6 months warfarin, target INR 3- 4

E- Life-long warfarin, target INR 2- 3

Q10. A 41-year-old man with a past history of asthma presents with pain and weakness in his left hand. Examination findings are consistent with a left ulnar nerve palsy. Blood tests reveal an eosinophilia. Which one of the following antibodies is most likely to be present?

A- ANA

B- Anti-Scl70

**C- pANCA**

D- Antiphospholipid antibodies

E- cANCA

Q11. A 34-year-old intravenous drug user is admitted with a purpuric rash affecting her legs. Blood tests reveal the following: Hb 11.4g/dl Platelets 489 \* 109 /l WCC 12.3 \* 109 /l HCV PCR positive HBsAg negative Rheumatoid factor positive C3/C4 reduced What is the most likely diagnosis?

A- Polyarteritis nodosa

B- Henoch-Schonlein purpura

C- Wegener's granulomatosis

**D- Cryoglobulinaemia**

E- Systemic lupus erythematous

Q12. A 59-year-old man with a history of gout presents with a swollen and painful first metatarsophalangeal joint. He currently takes allopurinol 400mg od as gout prophylaxis. What should happen to his allopurinol therapy?

A- Stop and recommence 4 weeks after acute inflammation has settled

B- Reduce allopurinol to 100mg od until acute attack has settled

C- Stop and switch to colchicine prophylaxis

D- Stop and recommence 2 weeks after acute inflammation has settled

**E- Continue allopurinol in current dose**

Q13. A 34-year-old is diagnosed with chronic fatigue syndrome. Which one of the following interventions is most useful?

**A- Graded exercise therapy**

B- Psychodynamic psychotherapy

C- Graded physiotherapy

D- Advice to avoid alcohol and caffeine

E- Low-dose fluoxetine

Q14. A 68-year-old female presents with a two week history of intermittent headaches and lethargy. Blood tests reveal the following: ESR 67 mm/hr What is the most likely diagnosis?

A- Polymyalgia rheumatica

B- Cluster headaches

C- Polyarteritis nodosa

D- Migraine

E- Temporal arteritis

Q15. Which one of the following cytokines is the most important in the pathophysiology of rheumatoid arthritis?

A- IFN-beta

B- IFN-alpha

C- IL-4

D- Tumour necrosis factor

E- IL-2

Q16. A 54-year-old female is reviewed in the rheumatology clinic due to dry eyes and arthralgia. A diagnosis of primary Sjogren's syndrome is suspected. Which one of the following features is least associated with this condition?

A- Renal tubular acidosis

B- Xerostomia

C- Sensory polyneuropathy

**D- Dilated cardiomyopathy**

E- Raynaud's phenomenon

Q17. Which one of the following statements regarding systemic lupus erythematous is true?

A- It is linked with HLA A5

**B- Onset is typically between 20-40 years old**

C- It is more common in Caucasians

D- The female:male ratio is 3:1

E- The incidence has decreased in the past 30 years

Q18. A 45-year-old female with a history of rheumatoid arthritis presents to the Emergency Department with a two day history of a hot, painful, swollen right elbow joint. What is the most appropriate management?

**A- Joint aspiration**

B- Start infliximab

C- Oral high-dose prednisolone

D- Short course of methotrexate

E- Depomederone injection

Q19. A 45-year-old man presents with a painful swelling on the posterior aspect of his elbow. There is no history of trauma. On examination an erythematous tender swelling is noted. What is the most likely diagnosis?

A- Synovial cyst

B- Haemarthrosis

C- Septic arthritis

D- Gout

**E- Olecranon bursitis**

Q20. Which one of the following features is least commonly seen in drug-induced lupus?

**A- Glomerulonephritis**

B- Arthralgia

C- Myalgia

D- Malar rash

E- Pleurisy

Q21. Which of the following is associated with a good prognosis in rheumatoid arthritis?

**A- Rheumatoid factor negative**

B- HLA DR4

C- Anti-CCP antibodies

D- Rheumatoid nodules

E- Insidious onset

Q22. A 64-year-old man with chronic kidney disease stage 3 secondary to type 2 diabetes mellitus presents with pain and swelling at the right first metatarsophalangeal joint. On examination the joint is hot, erythematous and tender to touch, although he can still flex the big toe. What is the most appropriate initial management?

**A- Colchicine**

B- Prednisolone

C- Co-codamol 30/500

D- Allopurinol

E- Indomethacin

Q23. A 25-year-old woman presents with a three day history of dysuria and a painful left knee. During the review of symptoms she mentions a bout of diarrhoea and crampy abdominal pain three weeks ago. She is normally fit and well and takes no regular medication. Her father died of colorectal cancer in his sixth decade. On examination the left knee is red, swollen and hot to touch. What is the most likely diagnosis?

**A- Reactive arthritis secondary to Salmonella spp.**

B- Reactive arthritis secondary to Chlamydia trachomatis

C- Rheumatoid arthritis

D- Ulcerative colitis

E- Gonococcal arthritis

Q24. An autoantibody screen reveals that a patient is positive for anti-Jo 1 antibodies. What is the most likely underlying diagnosis?

A- Limited cutaneous systemic sclerosis

B- Mixed connective tissue disease

C- Dermatomyositis

**D- Polymyositis**

E- Diffuse cutaneous systemic sclerosis

Q25. Which one of the following is least recognised as a risk factor for developing osteoporosis?

A- Cushing's syndrome

B- Turner's syndrome

C- Hyperparathyroidism

**D- Hypothyroidism**

E- Diabetes mellitus

Q26. A 43-year-old woman presents with right-sided elbow pain. This has been present for the past month and she reports no obvious trigger. On examination she reports pain when the wrist is extended whilst the elbow is extended. What is the most likely diagnosis?

A- Cubital tunnel syndrome

**B- Lateral epicondylitis**

C- Carpal tunnel syndrome

D- Medial epicondylitis

E- Pronator syndrome

Q27. A 57-year-old man presents with pain in his right knee. An x-ray shows osteoarthritis. He has no past medical history of note. What is the most suitable treatment option for the management of his pain?

A- Oral diclofenac with omeprazole

B- Oral glucosamine

C- Oral diclofenac

D- Oral ibuprofen

**E- Oral paracetamol**

Q28. A 31-year-old woman presents as her fingers intermittently turn white and become painful. She describes the fingers first turning white, then blue and finally red. This is generally worse in the winter months but it is present all year round. Wearing gloves does not help. Clinical examination of her hands, other joints and skin is unremarkable. Which one of the following treatments may be beneficial?

A- Amitriptyline

B- Aspirin

C- Pregabalin

D- Propranolol

**E- Nifedipine**

Q29. A 79-year-old man presents with a history of lower back pain and right hip pain. Blood tests reveal the following: Calcium 2.20 mmol/l Phosphate 0.8 mmol/l ALP 890 u/L What is the most likely diagnosis?

A- Primary hyperparathyroidism

B- Chronic kidney disease

C- Osteomalacia

D- Osteoporosis

**E- Paget's disease**

Q30. A 25-year-old man presents with back pain. Which one of the following may suggest a diagnosis of ankylosing spondylitis?

A- Rapid onset

B- Gets worse following exercise

C- Bone tenderness

**D- Pain at night**

E- Improves with rest

Q31. Perinuclear antineutrophil cytoplasmic antibodies (pANCA) are most strongly associated with which condition?

A- Goodpasture's syndrome

**B- Churg-Strauss syndrome**

C- Polyarteritis nodosa

D- Wegener's granulomatosis

E- Autoimmune hepatitis

Q32. The presence of anti-cyclic citrullinated peptide antibody is suggestive of which one of the following conditions?

A- Systemic lupus erythematous

**B- Rheumatoid arthritis**

C- Type 1 diabetes mellitus

D- Addison's disease

E- Dermatomyositis

Q33. A 27-year-old woman presents with painful genital ulceration. She has had recurrent attacks for the past four years. Oral aciclovir has had little effect on the duration of her symptoms. She has also noticed for the past year almost weekly attacks of mouth ulcers which again are slow to heal. Her only past medical history of note is being treated for thrombophlebitis two years ago. What is the most likely diagnosis?

**A- Behcet's syndrome**

B- Polyarteritis nodosa

C- Systemic lupus erythematosus

D- Sarcoidosis

E- Herpes simplex virus type 2

Q34. Which one of the following statements regarding the 2010 American College of Rheumatology / European League Against Rheumatism classification criteria for rheumatoid arthritis is correct? antibody

**A- A score of 7 out of 10 is sufficient to diagnose definite rheumatoid arthritis**

B- Inflammatory markers such as CRP and ESR are not part of the diagnostic criteria

C- Patients must have either a positive rheumatoid factor or a positive anti-cyclic citrullinated peptide

D- Large joint arthritis is more relevant than small joint arthritis

E- Gender is part of the scoring system

Q35. A 56-year-old lady is referred to rheumatology clinic due to severe Raynaud's phenomenon associated with arthralgia of the fingers. On examination you note shiny and tight skin of the fingers with a number of telangiectasia on the upper torso and face. She is also currently awaiting a gastroscopy to investigate heartburn. Which one of the following antibodies is most specific for the underlying condition?

A- Anti-Jo 1antiobodies

B- Rheumatoid factor

C- Anti-Scl-70 antibodies

**D- Anti-centromere antibodies**

E- Anti-nuclear factor

Q36. Which one of the following is true regarding the investigation of a patient with dermatomyositis?

A- Creatine kinase is characteristically normal

B- Muscle biopsy is contraindicated

**C- Anti-Jo-1 antibodies are usually negative**

D- Antinuclear antibodies are always negative

E- EMG is normal

Q37. Which one of the following statements concerning discoid lupus is correct?

A- Commonly progresses to SLE

B- Causes non-scarring alopecia

**C- Characterised by follicular keratin plugs**

D- Is rarely photosensitive

E- Typically presents in older males

Q38. A 31-year-old female with a history of SLE gives birth following a 39 week pregnancy. The newborn is noted to be bradycardic. Which one of the following autoantibodies are associated with congenital heart block?

**A- Anti-Ro**

B- Anti-Sm

C- Anti-RNP

D- Anti-dsDNA

E- Anti-Jo 1

Q39. A 45-year-old woman with a history of primary Sjogren's syndrome is reviewed in clinic. Her main problem is a dry mouth, which unfortunately has not responded to artificial saliva. Which one of the following medications is most likely to be beneficial?

A- Rivastigmine

B- Neostigmine

C- Clonidine

D- Atropine

**E- Pilocarpine**

Q40. A 45-year-old woman is referred to rheumatology outpatients with a 4 month history of joint pains, myalgia and generalised lethargy. An autoantibody screen reveals she is ANA positive and antiribonucleoprotein positive. The creatine kinase is elevated at 525. What is the most likely diagnosis?

A- Systemic lupus erythematous

**B- Mixed connective tissue disease**

C- Polymyositis

D- Dermatomyositis

E- CREST syndrome

Q41. A 57-year-old man with a history of ischaemic heart disease presents with an hot, erythematous and painful left 1st metatarsophalangeal joint. The attack settles following a course of non-steroidal antiinflammatories. He currently takes aspirin 75 mg od for secondary prevention of ischaemic heart disease. What should happen regarding his medication?

A- Switch aspirin to clopidogrel

**B- Continue aspirin at current dose**

C- Increase aspirin dose to 300mg od

D- Switch aspirin to dipyridamole

E- Stop aspirin

Q42. Osteopetrosis is due to a defect in:

**A- Osteoclast function**

B- PTH receptors

C- Osteoblast function

D- Calcium resorption in proximal tubule

E- Calcium absorption

Q43. Each one of the following is seen in reactive arthritis, except:

A- Urethritis

B- Keratoderma blenorrhagica

C- Conjunctivitis

**D- Aseptic meningoencephalitis**

E- Circinate balanitis

Q44. Which of the following is not a recognised cause of Raynaud's phenomenon?

A- Oral contraceptive pill

B- Cervical rib

C- Type I cryoglobulinaemia

**D- Pizotifen**

E- Scleroderma

Q45. A 54-year-old man with a history of type 2 diabetes mellitus presents with a history of right shoulder pain. On examination there is limited movement of the right shoulder in all directions. What is the most likely diagnosis?

**A- Adhesive capsulitis**

B- Dermatomyositis

C- Avascular necrosis

D- Lhermitte's syndrome

E- Diabetic amyotrophy

Q46. A 54-year-old woman who has had two Colle's fractures in the past three years has a DEXA scan: T-score L2-4-1.4 Femoral neck-2.7 What does the scan show?

A- Osteoporosis in both the vertebrae and femoral neck

B- Osteoporosis in vertebrae, osteopaenia in femoral neck

C- Osteopaenia in both the vertebrae and femoral neck

**D- Osteopaenia in vertebrae, osteoporosis in femoral neck**

E- Normal bone density in vertebrae, osteoporosis in femoral neck

Q47. An 28-year-old man is investigated for recurrent lower back pain. A diagnosis of ankylosing spondylitis is suspected. Which one of the following investigations is most useful?

A- ESR

**B- X-ray of the sacro-iliac joints**

C- HLA-B27 testing

D- X-ray of the thoracic spine

E- CT of the lumbar spine

Q48. Which one of the following conditions is least associated with HLA-B27?

A- Reiter's syndrome

B- Psoriatic arthritis

C- Ankylosing spondylitis

**D- Crohn's disease**

E- Sacroiliitis

Q49. You are doing the annual review of a 50-year-old woman who has rheumatoid arthritis. Which one of the following complications is most likely to occur as a result of her disease?

A- Chronic lymphocytic leukaemia

B- Hypertension

C- Colorectal cancer

D- Type 2 diabetes mellitus

**E- Ischaemic heart disease**

Q50. A 54-year-old male presents with weakness of his upper arms. On examination he is found to have a macular rash over his back and the extensor aspects of his upper arms. He is a heavy smoker and his sodium is 121 mmol/l. What is the most likely underlying diagnosis?

A- Addison's disease

B- Polymyositis

C- Overlap syndrome

**D- Dermatomyositis**

E- Hypothyroidism

Q51. Which of the following findings is not typical in a patient with antiphospholipid syndrome?

A- Prolonged APTT

**B- Thrombocytosis**

C- Recurrent venous thrombosis

D- Recurrent arterial thrombosis

E- Livedo reticularis

Q52. Which one of the following is least recognised as a risk factor for developing osteoporosis?

A- Multiple myeloma

B- Rheumatoid arthritis

**C- Long-term phenytoin therapy**

D- Chronic renal failure

E- Diabetes mellitus

Q53. Which one of the following is least recognised in polyarteritis nodosa?

**A- Cytoplasmic-antineutrophil cytoplasmic antibodies**

B- Hypertension

C- Mononeuritis multiplex

D- Pyrexia

E- Renal failure

Q54. A 51-year-old male presents with an acute onset of swelling and pain in his right knee. Aspiration shows negatively birefringent crystals with no organisms seen. His pain fails to settle with NSAIDs. What is the most appropriate next step in his management?

**A- Repeat joint aspiration and intra-articular depomederone**

B- Allopurinol

C- IV flucloxacillin

D- Diuretics

E- Low dose methotrexate

Q55. Which of the following is least likely to be associated with ankylosing spondylitis?

A- Apical fibrosis

B- Achilles tendonitis

C- Amyloidosis

**D- Achalasia**

E- Heart block

Q56. A 54-year-old man presents to the Emergency Department with a 2 day history of an swollen, painful left knee. Aspirated joint fluid shows calcium pyrophosphate crystals. Which of the following blood tests is most useful in revealing an underlying cause?

**A- Transferrin saturation**

B- ACTH

C- ANA

D- Serum ferritin

E- LDH

Q57. A 41-year-old female presents with lethargy and pain all over her body. This has been present for the past six months and is often worse when she is stressed or cold. Clinical examination is unremarkable other than a large number of tender points throughout her body. A series of blood tests including an autoimmune screen, inflammatory markers and thyroid function are normal. Given the likely diagnosis, which one of the following is not helpful in management?

A- Amitriptyline

**B- Trigger point injections**

C- Cognitive behavioural therapy

D- Exercise programme

E- Paracetamol

Q58. A 47-year-old female is referred to the rheumatology clinic due to cold fingers. Which connective tissue disease is most strongly associated with Raynaud's phenomenon?

A- Systemic lupus erythematous

B- Rheumatoid arthritis

**C- Systemic sclerosis**

D- Sjogren's syndrome

E- Polyarteritis nodosa

Q59. Which one of the following is the most common ocular manifestation of rheumatoid arthritis?

A- Scleritis

B- Episcleritis

**C- Keratoconjunctivitis sicca**

D- Corneal ulceration

E- Keratitis

Q60. Which one of the following drugs is least likely to cause gout?

**A- Lithium**

B- Bendrofluazide

C- Alcohol

D- Pyrazinamide

E- Furosemide

Q61. A 39-year-old woman with a history of rheumatoid arthritis presents with a two day history of a red right eye. There is no itch or pain. Pupils are 3mm, equal and reactive to light. Visual acuity is 6/5 in both eyes. What is the most likely diagnosis?

A- Keratoconjunctivitis sicca

B- Scleritis

C- Glaucoma

**D- Episcleritis**

E- Anterior uveitis

Q62. Which one of the following is most useful in the management of Familial Mediterranean Fever?

A- Prednisolone

B- Erythromycin

C- Cyclophosphamide

**D- Colchicine**

E- Benzylpenicillin

Q63. A 64-year-old female is referred to rheumatology out-patients by her GP with a history of arthritis in both hands. Which one of the following x-ray findings would most favour a diagnosis of rheumatoid arthritis over other possible causes?

A- Loss of joint space

**B- Periarticular osteopenia**

C- Subchondral sclerosis

D- Osteophytes

E- Subchondral cysts

Q64. A 33-year-old man who is suspected of having ankylosing spondylitis has a lumbar spine x-ray. Which one of the following features is most likely to be present?

A- Wedge shaped discs

**B- Sclerosis**

C- 'Rugger-Jersey' spine

D- Osteophytes

E- Subchondral cysts

Q65. A 40-year-old woman complains of a permanent 'funny-bone' sensation in her right elbow. This is accompanied by tingling in the little and ring finger. Her symptoms are worse when the elbow is bent for prolonged periods. What is the most likely diagnosis?

**A- Cubital tunnel syndrome**

B- Lateral epicondylitis

C- Medial epicondylitis

D- Median nerve entrapment syndrome

E- Radial tunnel syndrome

Q66. A 41-year-old man presents with persistent fatigue for the past 8 months. Which one of the following features is least consistent with a diagnosis of chronic fatigue syndrome?

A- Dizziness

B- Painful lymph nodes without enlargement

**C- Having a busy day improves the symptoms**

D- Palpitations

E- Headaches

Q67. Which one of the following is least associated with Behcet's syndrome?

A- Mouth ulcers

B- Genital ulcers

**C- Conjunctivitis**

D- Deep vein thrombosis

E- Aseptic meningitis

Q68. A 31-year-old patient is diagnosed with rheumatoid arthritis. Which of the following is associated with a good prognosis?

A- Being a non-smoker

B- Erosions on x-ray first developing 18 months after diagnosis

**C- Sudden onset**

D- Being diagnosed aged 35 years

E- Anti-CCP antibodies

Q69. A 44-year-old female with a history of Raynaud's phenomenon is reviewed in the rheumatology clinic. She is currently being investigated for dysphagia. On examination she is noted to have tight, shiny skin over her fingers. Which one of the following complications is she most likely to develop?

A- Early onset dementia

B- Erythema nodosum

**C- Malabsorption**

D- Constrictive pericarditis

E- Erosive joint disease

Q70. Which one of the following features is least typical of polymyalgia rheumatica?

**A- Elevated creatinine kinase**

B- Low-grade fever

C- Morning stiffness in proximal limb muscles

D- Polyarthralgia

E- Anorexia

Q71. A 61-year-old man is noted to have thickened patches of skin over his knuckles and extensor surfaces consistent with Gottron's papules. His creatinine kinase levels are also elevated. A diagnosis of dermatomyositis is suspected. Which one of the following types of autoantibody is most specific for this condition?

A- Anti-scl-70 antibodies

B- Anti-Jo-1 antibodies

C- Anti-nuclear antibodies

**D- Anti-Mi-2 antibodies**

E- Anti-centromere bodies

Q72. Which one of the following statements regarding ankylosing spondylitis is correct?

A- Schober's test assesses reduced chest expansion

B- HLA-B27 is positive in 50% of patients

**C- Achilles tendonitis is a recognised association**

D- It affects men twice as commonly as women

E- The typical age of presentation is between 40-50 years

Q73. A 54-year-old man is recovering following his first episode of gout. The pain and inflammation settled 4 days ago. He has no risk factors for the development of gout and there is no evidence of gouty tophi on examination. What is the most suitable point to start uric acid lowering therapy?

A- Immediately

B- If more than 6 episodes of gout in a 1 year period

**C- If one further attack of gout in the next 12 months**

D- 4 weeks after the initial attack of gout has settled

E- If more than 4 episodes of gout in a 1 year period

Q74. Which one of the following conditions has polygenic inheritance?

A- Bartter's syndrome

B- Huntington disease

**C- Ankylosing spondylitis**

D- Fragile X syndrome

E- Von Willebrand's disease

Q75. A 47-year-old female presents with elbow pain. She has just spent the weekend painting the house. On examination there is localised pain around the lateral epicondyle and a diagnosis of lateral epicondylitis is suspected. Which one of the following movements would characteristically worsen the pain?

A- Resisted thumb flexion

B- Thumb extension

C- Flexion of the elbow

D- Pronation of the forearm with the elbow flexed

**E- Resisted wrist extension with the elbow extended**

Q76. Approximately what percentage of patients with psoriasis develop an associated arthropathy?

A- 0.5%

B- 12-15%

C- 4-5%

D- 1%

**E- 10%**

Q77. You review a 48-year-old woman who is taking methotrexate for rheumatoid arthritis. Concurrent prescription of which other medication should be avoided?

A- Erythromycin

**B- Trimethoprim**

C- Sumatriptan

D- Lansoprazole

E- Sodium valproate

Q78. A 68-year-old presents with a painful swollen left knee which has failed to settle after a weeks rest. There is no history of trauma. On examination he has a moderate sized effusion. A plain radiograph is reported as follows: Some loss of joint space Linear calcification of the articular cartilage What is the most likely diagnosis?

**A- Pseudogout**

B- Rheumatoid arthritis

C- Sarcoidosis

D- Gout

E- Osteoarthritis

Q79. A 69-year-old man presents with an acute episode of gout on his left first metatarsal-phalangeal joint. What is the most likely underlying mechanism?

A- Sedentary lifestyle

**B- Decreased renal excretion of uric acid**

C- Increased endogenous production of uric acid

D- Starvation

E- Too much protein in diet

Q80. A 50-year-old man with no past medical history is investigated for ongoing back pain. He is found to have a vertebral collapse secondary to osteoporosis. What is the most appropriate test to determine the cause of his osteoporosis?

A- Thyroid function tests

B- Prostate specific antigen

C- Oestrogen level

D- Prolactin level

**E- Testosterone level**

Q81. A 54-year-old farm worker presents for review. She has recently been diagnosed with osteoarthritis of the hand but has no other past medical history of note. Despite regular paracetamol she is still experiencing considerable pain, especially around the base of both thumbs. What is the most suitable next management step?

A- Add oral diclofenac + lansoprazole

B- Switch paracetamol for co-codamol 8/500

**C- Add topical ibuprofen**

D- Add oral ibuprofen

E- Add oral glucosamine

Q82. A 24-year-old female is investigated for intermittent pain and swelling of the metacarpal phalangeal joints for the past 3 months. An x-ray shows loss of joint space and soft-tissue swelling. Rheumatoid factor is positive and a diagnosis of rheumatoid arthritis is made. What is the most appropriate management to slow disease progression?

A- Infliximab

B- Rituximab

C- Sulfasalazine

**D- Methotrexate + sulfasalazine + short-course of prednisolone**

E- Diclofenac

Q83. A 40-year-old woman who is known to have systemic lupus erythematosus is reviewed with an exacerbation of wrist pain. Which one of the following is the most useful marker for monitoring disease activity?

A- C-reactive protein

B- C2 levels

C- Anti-nuclear antibody titres

**D- Anti-dsDNA titres**

E- Anti-Sm titres

Q84. Which one of the following is not associated with carpal tunnel syndrome?

A- Tinel's sign

B- Compression of the median nerve

**C- Wasting of the hypothenar eminence**

D- Flexion of the wrist reproduces symptoms

E- Weakness of thumb abduction

Q85. A 34-year-old kitchen worker presents with a two week history of pain in her right wrist. She has recently emigrated from Ghana and has no past medical history of note. On examination she is tender over the base of her right thumb and also over the radial styloid process. Ulnar deviation of the wrist recreates the pain. What is the most likely diagnosis?

A- Rheumatoid arthritis

B- Osteoarthritis of the carpometacarpal joint

**C- De Quervain's tenosynovitis**

D- Carpal tunnel syndrome

E- Systemic lupus erythematosus

Q86. A 54-year-old man is diagnosed as having gout. You are discussing ways to help prevent future attacks. Which one of the following is most likely to precipitate an attack of gout?

A- Chocolate

B- Brazil nuts

C- Eggs

**D- Sardines**

E- Smoking

Q87. A 45-year-old man presents with a painful, swollen and red left middle toe. There is no history of trauma and his symptoms have been present for around a week. Which one of the following conditions is most associated with this presentation?

A- Diabetes mellitus

B- Systemic sclerosis

C- Rheumatoid arthritis

D- Bisphosphonate use

**E- Psoriatic arthritis**

Q88. A 27-year-old woman is referred to orthopaedics. Three years she had surgery and chemotherapy for thyroid cancer. Follow up scans to date have shown no evidence of any disease recurrence. For the past two months she has been experiencing gradually increasing pain in her right hip which is worse on exercising. On examination passive movement of the hip is painful in all directions, especially internal rotation. An x-ray ordered by her GP has been reported as normal. What is the most likely diagnosis?

A- Trochanteric bursitis

**B- Avascular necrosis of the femoral head**

C- Primary hyperparathyroidism

D- Metastatic deposits

E- Hypoparathyroidism

Q89. A 73-year-old man presents pain in his right thigh. This has been getting progressively worse for the past 9 months despite being otherwise well. An x-ray is reported as follows: X-ray right femur Radiolucency of subarticular region suggestive of osteolysis. Some areas of patchy sclerosis Bloods tests show: Calcium 2.38 mmol/l Phosphate 0.85 mmol/l Alkaline phosphatase 544 u/L Prostate specific antigen 4.4 ng/ml What is the most appropriate action?

A- Vitamin D supplementation

B- Check serum testosterone

C- Referral to an orthopaedic surgeon

D- Referral to a urologist

**E- IV bisphosphonates**

Q90. A 25-year-old man presents with a painful, swollen left knee. He returned 4 weeks ago from a holiday in Spain. There is no history of trauma and he has had no knee problems previously. On examination he has a swollen, warm left knee with a full range of movement. His ankle joints are also painful to move but there is no swelling. On the soles of both feet you notice a waxy yellow rash. What is the most likely diagnosis?

A- Rheumatoid arthritis

B- Psoriatic arthritis

C- Gout

**D- Reactive arthritis**

E- Gonococcal arthritis

Q91. A 24-year-old man is investigated for chronic back pain. Which one of the following would most suggest a diagnosis of ankylosing spondylitis?

**A- Reduced lateral flexion of the lumbar spine**

B- Pain gets worse during the day

C- Accentuated lumbar lordosis

D- Pain on straight leg raising

E- Loss of thoracic kyphosis

Q92. A 45-year-old man who is known to have haemochromatosis presents with a swollen and painful right knee. An x-ray shows no fracture but extensive chondrocalcinosis. Given the likely diagnosis, which one of the following is most likely to present in the joint fluid?

A- Raised hyaluronic acid levels

B- Monosodium urate crystals

C- Bipyramidal oxalate crystals

D- Negatively birefringent calcium carbonate crystals

**E- Positively birefringent rhomboid-shaped crystals**

Q93. Which of the following statements is true regarding psoriatic arthropathy?

A- Skin disease always precedes joint disease

B- Approximately one-third of patients with psoriasis eventually develop arthropathy

C- The mainstay of management is analgesia, physiotherapy and joint replacement

**D- Males and females are equally affected**

E- Arthritis mutilans is the most common subtype

Q94. Which one of the following is most recognised as a risk factor for developing osteoporosis?

**A- Osteogenesis imperfecta**

B- Marfan's syndrome

C- Myotonic dystrophy

D- Duchenne muscular dystrophy

E- Ehler-Danlos syndrome

Q95. A 71-year-old man presents with an erythematous, swollen first metatarsophalangeal joint on the left foot. This is causing him considerable pain and he is having difficulty walking. He has never had any previous similar episodes. His past medical history includes atrial fibrillation and type 2 diabetes mellitus and his current medications are warfarin, metformin and simvastatin. What is the most appropriate treatment of this episode?

A- Intra-articular corticosteroid

**B- Colchicine**

C- Ibuprofen

D- Diclofenac

E- Prednisolone

Q96. A 33-year-old female presents 6 weeks after the birth of her first child with a two-week history of polyarthralgia, fever and a skin rash. First-line investigations show: ESR 45 mm/hour What is the most likely diagnosis?

A- Polymorphic eruption of pregnancy

**B- Systemic lupus erythematous**

C- Rheumatoid arthritis

D- Reactive arthritis

E- Pseudogout

Q97. A 57-year-old woman with a history of polymyalgia rheumatica has been taking prednisolone 10 mg for the past 5 months. A DEXA scan is reported as follows: L2 T-score-1.6 SD Femoral neck T-score-1.7 SD What is the most suitable management?

A- No treatment

B- Vitamin D + calcium supplementation + repeat DEXA scan in 6 months

C- Vitamin D + calcium supplementation

D- Vitamin D + calcium supplementation + hormone replacement therapy

**E- Vitamin D + calcium supplementation + oral bisphosphonate**

Q98. Which one of the following would not suggest an underlying connective tissue disorder in a patient with Raynaud's?

A- Unilateral symptoms

B- Digital ulcers

C- Presence of autoantibodies

**D- Onset at 25 years old**

E- Calcinosis

Q99. A 66-year-old female presents with pain at the base of her left thumb. She has no past medical history of note. On examination there is diffuse tenderness and swelling of her left first carpometacarpal joint. What is the most likely diagnosis?

**A- Osteoarthritis**

B- De Quervain's tenosynovitis

C- Gout

D- Rheumatoid arthritis

E- Primary hyperparathyroidism

Q100. A 66-year-old female is on long-term prednisolone therapy for polymyalgia rheumatica. What is the most appropriate protection against osteoporosis?

A- Hormone replacement therapy

B- Calcitonin

**C- Oral bisphosphonate**

D- Calcium and vitamin D

E- Hip-protectors

Q101. A 54-year-old woman is reviewed. She was discharged from the psychiatric ward around 5 weeks ago following an admission for an acute psychotic episode. Her psychotic symptoms have settled on risperidone but unfortunately she has now developed a dry mouth and arthralgia in both hands. A number of blood tests are requested: Rheumatoid factor Positive Anti-Ro Positive Anti-Smith Negative ANA Positive C4 Low What is the most likely diagnosis?

A- Systemic lupus erythematous

B- Sarcoidosis

C- Drug-induced lupus erythematous

D- Rheumatoid arthritis

**E- Sjogren's syndrome**

Q102. Which one of the following is most likely to indicate an underlying connective tissue disorder in a patient with Raynaud's phenomenon?

A- Chilblains

B- Bilateral symptoms

C- Female patient

D- Onset at 18 years old

**E- Recurrent miscarriages**

Q103. A 33-year-old female is admitted to the Emergency Department due to right-sided weakness. She has a past history of deep vein thrombosis following the birth of her daughter. The only other past history of note is two miscarriages. A CT head confirms an ischaemic stroke in the left middle cerebral artery territory. What is the likely finding on echocardiography?

**A- Normal**

B- Dilated cardiomyopathy

C- Bicuspid aortic valve

D- Atrial septal defect

E- Ventricular septal defect

Q104. A 35-year-old woman who has severe Raynaud's disease is reviewed in clinic. Three months ago she was started on nifedipine. Unfortunately this has had a minimal effect on her symptoms and has resulted in ankle oedema. What is the most appropriate next step in management?

A- Aspirin

B- Sympathectomy

**C- Intravenous prostacyclin**

D- Methotrexate

E- Intravenous infliximab

Q105. A 63-year-old man presents to the Emergency Department with a 2 day history of a painful and swollen left knee joint. Aspiration reveals positively birefringent crystals and no organisms are seen. Which of the following conditions are not recognised causes of the underlying condition?

A- Haemochromatosis

B- Low magnesium

**C- High phosphate**

D- Acromegaly

E- Hyperparathyroidism

Q106. A 23-year-old female presents with a painful ankle following an inversion injury whilst playing tennis. Which one of the following findings is least relevant when deciding whether an x-ray is needed?

**A- Swelling immediately after the injury and now**

B- Pain in the malleolar zone

C- Tenderness at the medial malleolar zone

D- Tenderness at the lateral malleolar zone

E- Cannot walk 4 steps immediately after the injury and now

Q107. A 28-year-old man is diagnosed with having ankylosing spondylitis. He presented with a six month history of back pain. On examination there is reduced lateral flexion of the spine but no evidence of any other complications. Which one of the following is he most likely to offered as first-line treatment?

**A- Exercise regime + NSAIDs**

B- Exercise regime + infliximab

C- Physiotherapy + sulfasalazine

D- Physiotherapy + etanercept

E- Exercise regime + paracetamol

Q108. Which one of the following is most consistently associated with a poor prognosis in rheumatoid arthritis?

**A- Anti-CCP antibodies**

B- HLA DR2 allele

C- Rapid onset

D- Being a smoker

E- Female sex

Q109. You review a 40-year-old mechanic who presents with joint pains. For the past two months he has noticed intermittent pain, stiffness and swelling of the joints in his hands and feet. The stiffness tends to improve during the day but the pain tends to get worse. He has also noticed stiffness in his back but cannot remember any aggravating injury. You order some blood tests (taken during an acute attack) which are reported as follows: Rheumatoid factor Negative Anti-cyclic citrullinated peptide antibody Positive Uric acid 0.3 mmol/l (0.18- 0.48) ESR 41 mm/hr What is the most likely diagnosis?

A- Reactive arthritis

B- Ankylosing spondylitis

C- Gout

D- Osteoarthritis

**E- Rheumatoid arthritis**

Q110. A 30-year-old female who is known to have antiphospholipid syndrome is diagnosed as having a deep vein thrombosis. This is her first thrombotic event. How should her anticoagulation be managed?

A- Life-long low-dose aspirin

**B- 6 months warfarin, target INR 2- 3**

C- Life-long warfarin, target INR 3- 4

D- Life-long warfarin, target INR 2- 3

E- 6 months warfarin, target INR 2- 3 followed by life-long low-dose aspirin and clopidogrel

Q111. A 20-year-old woman is reviewed in the rheumatology clinic. She has been referred due to a three month history of arthralgia, lethargy, muscle pains and Raynaud's phenomenon. On examination she is noted to have slightly swollen hands but no significant synovitis. A number of blood tests are ordered: Hb 12.9 g/dl Platelets 282 \* 109 /l WBC 6.2 \* 109 /l Rheumatoid factor Negative ANA Positive Anti-dsDNA antibodies Negative CRP 25 mg/l ESR 39 mm/hr Creatine kinase 675 ng/mL (50-200) Given the likely diagnosis, which other antibodies are most likely to be present?

A- Anti-Scl-70

B- Anti-centromere

C- Anti-Jo

D- Anti-RO

**E- Anti-RNP**

Q112. A 62-year-old man with lung cancer is suspected of having dermatomyositis. Which one of the following antibodies is most likely to be positive?

**A- Anti-nuclear antibodies**

B- Anti-centromere bodies

C- Anti-scl-70 antibodies

D- Anti-Jo-1 antibodies

E- Anti-Mi-2 antibodies

Q113. A 50-year-old woman complains of pain in her right elbow. This has been present for the past four weeks and is maximal around 4-5cm distal from the lateral aspect of the elbow joint. The pain is made worse by extending the elbow and pronating the forearm. What is the most likely diagnosis?

A- Lateral epicondylitis

**B- Radial tunnel syndrome**

C- De Quervain's tenosynovitis

D- Cubital tunnel syndrome

E- Medial epicondylitis

Q114. Which one of the following antibodies is most specific for systemic lupus erythematous?

A- Anti-neutrophil cytoplasmic antibodies

B- Anti-nuclear antibodies

**C- Anti-Sm antibodies**

D- Anti-RNP antibodies

E- Anti-cardiolipin antibodies

Q115. Which one of the following is most recognised as a potential complication in a patient with ankylosing spondylitis?

**A- Heart block**

B- Aortic stenosis

C- Achalasia

D- Diabetes mellitus

E- Bronchiectasis

Q116. A 58-year-old woman with a history of left hip osteoarthritis presents for review. She is currently taking co-codamol 30/500 for pain on a regular basis but this is unfortunately not controlling her symptoms. There is no past medical history of note, in particular no asthma or gastrointestinal problems. What is the most suitable next step in management?

A- Switch to regular oral tramadol

B- Add topical ibuprofen

**C- Add oral diclofenac + proton pump inhibitor**

D- Add oral etoricoxib

E- Add oral diclofenac

Q117. Which one of the following is least associated with the development of gout?

A- Psoriasis

B- Lesch-Nyhan syndrome

C- Lymphoma

**D- Lithium toxicity**

E- Renal failure

Q118. A 44-year-old woman is seen in the rheumatology clinic. She has been referred with Raynaud's phenomenon. During the review of systems she mentions that her GP is organising an endoscopy to investigate dyspepsia. On examination she is noted to have tight, shiny skin over her fingers. Which one of the following complications is she most likely to develop?

A- Bronchiectasis

B- Angiodysplasia

C- Arterial hypertension

D- Chronic kidney disease

**E- Pulmonary hypertension**

## **Chapter 9 Dermatology**

Q1. A 41-year-old man develops itchy, polygonal, violaceous papules on the flexor aspect of his forearms. Some of these papules have coalesced to form plaques. What is the most likely diagnosis?

**A- Lichen planus**

B- Scabies

C- Lichen sclerosus

D- Morphea

E- Psoriasis

Q2. A 30-year-old female in her third trimester of pregnancy mentions during an antenatal appointment that she has noticed an itchy rash around her umbilicus. This is her second pregnancy and she had no similar problems in her first pregnancy. Examination reveals blistering lesions in the peri-umbilical region and on her arms. What is the likely diagnosis?

A- Seborrhoeic dermatitis

B- Pompholyx

C- Polymorphic eruption of pregnancy

D- Lichen planus

**E- Pemphigoid gestationis**

Q3. A 62-year-old female is referred to dermatology due to a lesion over her shin. It initially started as a small red papule which later became a deep, red, necrotic ulcer with a violaceous border. What is the likely diagnosis?

A- Necrobiosis lipoidica diabeticorum

B- Syphilis

C- Erythema nodosum

D- Pretibial myxoedema

**E- Pyoderma gangrenosum**

Q4. A 39-year-old female has a pigmented mole removed from her leg which histology shows to be a malignant melanoma. What is the single most important prognostic marker?

A- Number of episodes of sunburn before the age of 18 years

B- Age of patient

C- Diameter of melanoma

**D- Depth of melanoma**

E- Mutation in the MC1R gene

Q5. A 62-year-old female is referred due to a long-standing ulcer above the right medial malleolus. Anklebrachial pressure index readings are as follows: Right 0.95 Left 0.95 To date it has been managed by the District Nurse with standard dressings. What is the most appropriate management to maximize the likelihood of the ulcer healing?

**A- Compression bandaging**

B- Intermittent pneumatic compression

C- Hydrocolloid dressings

D- Refer to vascular surgeon

E- Topical flucloxacillin

Q6. A 40-year-old man complains of widespread pruritus for the past two weeks. The itching is particularly bad at night. He has no history of note and works in the local car factory. On examination he has noted to have a number of linear erythematous lesions in between his fingers. What is the most likely diagnosis?

A- Polyurethane dermatitis

B- Fibreglass exposure

C- Cimex lectularius infestation (Bed-bugs)

**D- Scabies**

E- Langerhans cell histiocytosis

Q7. A 22-year-old woman presents due to hypopigmented skin lesions on her chest and back. She has recently returned from the south of France and has tanned skin. On examination the lesions are slightly scaly. What is the most likely diagnosis?

A- Tinea corporis

**B- Pityriasis versicolor**

C- Porphyria cutanea tarda

D- Lyme disease

E- Psoriasis

Q8. A 67-year-old man with a history of Parkinson's disease presents due to the development of an itchy, red rash on his neck, behind his ears and around the nasolabial folds. He had a similar flare up last winter but did not seek medical attention. What is the most likely diagnosis?

A- Levodopa associated dermatitis

**B- Seborrhoeic dermatitis**

C- Flexural psoriasis

D- Acne rosacea

E- Fixed drug reaction to ropinirole

Q9. A 43-year-old man comes for review. A few months ago he developed redness around his nose and cheeks. This is worse after drinking alcohol. He is concerned as one of his work colleagues asked him if he had a drink problem despite him drinking 14 units per week. On examination he has erythema as described above with some pustules on the nose and telangiectasia on the cheeks. What is the most likely diagnosis?

A- Mitral stenosis

B- Seborrhoeic dermatitis

C- Alcohol-related skin changes

**D- Acne rosacea**

E- Systemic lupus erythematosus

Q10. A 19-year-old student presents with a three day history of a 1 cm golden, crusted lesion on the border of her lower lip. What is the most suitable management?

A- Oral co-amoxiclav

B- Oral penicillin

C- Oral flucloxacillin

D- Oral flucloxacillin + penicillin

**E- Topical fusidic acid**

Q11. A 74-year-old lady with a history of hypothyroidism presents in January with a rash down the right side of her body. On examination an erythematous rash with patches of hyperpigmentation and telangiectasia is found. What is the likely diagnosis?

A- Erythema marginatum

B- Herpes zoster

C- Pretibial myxoedema

**D- Erythema ab igne**

E- Xanthomata

Q12. A 28-year-old man presents with multiple protuberant lesions around the anus which have been present for about 6 weeks. He reports it is painful when he passes a stool although there is no change in bowel habit. What is the most likely diagnosis?

A- Haemorrhoids

B- Anal cancer

**C- Genital warts**

D- Anal skin tags

E- Crohn's disease

Q13. A 25-year-old man presents with a widespread rash over his body. The torso and limbs are covered with multiple erythematous lesions less than 1 cm in diameter which in parts are covered by a fine scale. You note that two weeks earlier he was seen with to a sore throat when it was noted that he had exudative tonsillitis. Other than a history of asthma he is normally fit and well. What is the most likely diagnosis?

A- Pityriasis Rosea

B- Pityriasis versicolor

C- Syphilis

D- Discoid eczema

**E- Guttate psoriasis**

Q14. A 25-year-old man presents with a pruritic skin rash. This has been present for the past few weeks and has responded poorly to an emollient cream. The pruritus is described as 'intense' and has resulted in him having trouble sleeping. On inspecting the skin you notice a combination of papules and vesicles on his buttocks and the extensor aspect of the knees and elbows. What is the most likely diagnosis?

A- Lichen planus

B- Chronic plaque psoriasis

C- Henoch-Schonlein purpura

**D- Dermatitis herpetiformis**

E- Scabies

Q15. A 54-year-old man is referred to the dermatology outpatient department due to a facial rash which has persisted for the past 12 months. On examination there is a symmetrical rash consisting of extensive pustules and papules which affects his nose, cheeks and forehead. What is the most appropriate treatment?

A- Ciprofloxacin

B- Isotretinoin

**C- Oxytetracycline**

D- Hydroxychloroquine

E- Prednisolone

Q16. A 23-year-old man presents with a three day history of general malaise and low-grade temperature. Yesterday he developed extensive painful ulceration of his mouth and gums. On examination his temperature is 37.4ºC, pulse 84 / min and there is submandibular lymphadenopathy. What is the most likely diagnosis?

A- Epstein Barr virus

B- Lichen planus

C- HIV seroconversion illness

**D- Herpes simplex virus infection**

E- Oral Candida

Q17. Which one of the following conditions is most strongly associated with erythema multiforme?

A- Crohn's disease

B- Tuberculosis

C- Sarcoidosis

**D- Herpes simplex virus**

E- Streptococcal infections

Q18. Which of the following conditions is most associated with onycholysis?

A- Bullous pemphigoid

**B- Raynaud's disease**

C- Osteogenesis imperfecta

D- Oesophageal cancer

E- Scabies

Q19. A 34-year-old man presents for the removal of a mole. Where on the body are keloid scars most likely to form?

**A- Sternum**

B- Lower back

C- Abdomen

D- Flexor surfaces of limbs

E- Scalp

Q20. A 45-year-old woman presents for review. She has noticed a number of patches of 'pale skin' on her hands over the past few weeks. The patient has tried using an emollient and topical hydrocortisone with no result. On examination you note a number of hypopigmented patches on the dorsum of both hands. Her past medical history includes thyrotoxicosis for which she takes carbimazole and thyroxine. What is the most likely causes of her symptoms?

**A- Vitiligo**

B- Carbimazole-induced hypopigmentation

C- Leukopaenia-induced fungal infection

D- Idiopathic guttate hypomelanosis

E- Addison disease

Q21. #Which one of the following complications is most associated with psoralen + ultraviolet A light (PUVA) therapy?

**A- Squamous cell cancer**

B- Osteoporosis

C- Basal cell cancer

D- Dermoid cysts

E- Malignant melanoma

Q22. A 38-year-old woman with a history of rheumatoid arthritis and epilepsy presents with generalised increased hair growth over her trunk and arms. Which one of the following drugs is associated with hypertrichosis?

A- Sodium valproate

B- Prednisolone

C- Phenytoin

**D- Ciclosporin**

E- Methotrexate

Q23. A 64-year-old patient is referred to dermatology outpatients due to a rash. A diagnosis necrolytic migratory erythema is made. What is the most likely underlying diagnosis?

A- Gastrinoma

B- Lung cancer

**C- Glucagonoma**

D- Pancreatic cancer

E- Lymphoma

Q24. A 31-year-old woman develops with painful, purple lesions on her shins. Which one of the following medications is most likely to be responsible?

A- Montelukast

B- Lansoprazole

**C- Combined oral contraceptive pill**

D- Sodium valproate

E- Carbimazole

Q25. Which one of the following conditions is least likely to be associated with pyoderma gangrenosum?

A- Ulcerative colitis

**B- Syphilis**

C- Lymphoma

D- IgA monoclonal gammopathy

E- Rheumatoid arthritis

Q26. A 36-year-old woman is reviewed. She presented 4 weeks ago with itchy dry skin on her arms and was diagnosed as having atopic eczema. She was prescribed hydrocortisone 1% cream with an emollient. Unfortunately there has been no improvement in her symptoms. What is the next step in management, alongside continued regular use of an emollient?

A- Betamethasone valerate 0.1%

**B- Clobetasone butyrate 0.05%**

C- Clobetasol propionate 0.05%

D- Topical tetracycline

E- Regular wet wraps

Q27. A 54-year-old man presents with a brown velvety rash on the back of his neck around his axilla. A clinical diagnosis of acanthosis nigricans is made. Which one of the following conditions is most associated with this kind of rash?

**A- Hypothyroidism**

B- Psoriasis

C- Tuberculosis

D- Ulcerative colitis

E- Acute pancreatitis

Q28. A 67-year-old man who is a retired builder presents following the development of a number of red, scaly lesions on his left temple. These were initially small and flat but are now erythematous and rough to touch. What is the most likely diagnosis?

A- Pityriasis versicolor

B- Seborrhoeic keratosis

C- Polymorphous light eruption

**D- Actinic keratoses**

E- Malignant melanoma

Q29. A 85-year-old lady presents to dermatology clinic complaining of itchy white plaques affecting her vulva. There is no history of vaginal discharge or bleeding. A similar plaque is also seen on her inner thigh. What is the likely diagnosis?

A- Candida

B- Lichen planus

**C- Lichen sclerosus**

D- Herpes simplex

E- Seborrhoeic dermatitis

Q30. A 26-year-old newly qualified nurse presents as she has developed a bilateral erythematous rash on both hands. She has recently emigrated from the Philippines and has no past medical history of note. A diagnosis of contact dermatitis is suspected. What is the most suitable to test to identify the underlying cause?

A- Radioallergosorbent test (RAST)

B- Latex IgM levels

C- Skin prick test

D- Urinary porphyrins

**E- Skin patch test**

Q31. A 43-year-old man is admitted to the Emergency Department with a rash and feeling generally unwell. He is known to have epilepsy and his medication was recently changed to phenytoin three weeks ago. Around one week ago he started to develop mouth ulcers associated with malaise and a cough. Two days ago he started to develop a widespread red rash which has now coalesced to form large fluid-filled blisters, covering around 30% of his body area. The lesions separate when slight pressure is applied. On examination his temperature is 38.3ºC and pulse 126 / min. Blood results show: Na+ 144 mmol/l K + 4.2 mmol/l Bicarbonate 19 mmol/l Urea 13.4 mmol/l Creatinine 121 µmol/l What is the most likely diagnosis?

A- Phenytoin-induced neutropaenia

B- Drug-induced lupus

C- Kawasaki disease

**D- Toxic epidermal necrolysis**

E- Staphylococcal Scalded Skin syndrome

Q32. A 34-year-old man presents to dermatology clinic with an itchy rash on his palms. He has also noticed the rash around the site of a recent scar on his forearm. Examination reveals papules with a white-lace pattern on the surface. Some isolated white streaks are also noted on the mucous membranes of the mouth. What is the diagnosis?

**A- Lichen planus**

B- Scabies

C- Lichen sclerosus

D- Morphea

E- Pityriasis rosea

Q33. An 18-year-old female is reviewed in the dermatology clinic complaining of scalp hair loss. Which one of the following conditions is least likely to be responsible?

**A- Porphyria cutanea tarda**

B- Discoid lupus

C- Tinea capitis

D- Alopecia areata

E- Telogen effluvium

Q34. A 55-year-old female is referred to dermatology due to a lesions over both shins. On examination symmetrical erythematous lesions are found with an orange peel texture. What is the likely diagnosis?

**A- Pretibial myxoedema**

B- Pyoderma gangrenosum

C- Necrobiosis lipoidica diabeticorum

D- Erythema nodosum

E- Syphilis

Q35. Which of the following skin conditions is not associated with diabetes mellitus?

A- Necrobiosis lipoidica

**B- Sweet's syndrome**

C- Granuloma annulare

D- Vitiligo

E- Lipoatrophy

Q36. Which of the following skin disorders is least associated with tuberculosis?

A- Scrofuloderma

B- Erythema nodosum

C- Lupus vulgaris

D- Verrucosa cutis

**E- Lupus pernio**

Q37. A 62-year-old male is referred to dermatology with a lesion over his shin. On examination shiny, painless areas of yellow skin over the shin are found with abundant telangiectasia. What is the most likely diagnosis?

A- Pretibial myxoedema

**B- Necrobiosis lipoidica diabeticorum**

C- Erythema nodosum

D- Pyoderma gangrenosum

E- Syphilis

Q38. Which one of the following conditions is least associated with pruritus?

**A- Pemphigus vulgaris**

B- Iron-deficiency anaemia

C- Polycythaemia

D- Chronic renal failure

E- Scabies

Q39. A 24-year-old female with a history of anorexia nervosa presents with red crusted lesions around the corner of her mouth and below her lower lip. What is she most likely to be deficient in?

**A- Zinc**

B- Tocopherol

C- Pantothenic acid

D- Thiamine

E- Magnesium

Q40. Which one of the following statements regarding acne vulgaris is incorrect?

A- Follicular epidermal hyperproliferation results in obstruction of the pilosebaceous follicle

B- Acne vulgaris affects at least 80% of teenagers

C- Propionibacterium acnes is an anaerobic bacterium

D- Typical lesions include comedones and pustules

**E- Beyond the age of 25 years acne vulgaris is more common in males**

Q41. A 23-year-old man presents with an itchy skin condition. Which one of the following is not part of the UK Working Party Diagnostic Criteria for atopic eczema?

A- History of asthma

**B- Responds to topical steroids**

C- History of flexural involvement

D- Onset below age 2 years

E- History of generally dry skin

Q42. A 62-year-old with a history of acne rosacea presents for advice regarding treatment. Which one of the following interventions has the least role in management?

A- Camouflage creams

B- Topical metronidazole

**C- Low-dose topical corticosteroids**

D- Laser therapy

E- Use of high-factor sun block

Q43. A 26-year-old man who is HIV positive is noted to have developed seborrhoeic dermatitis. Which of the following two complications are most associated with this condition?

A- Alopecia and otitis externa

**B- Blepharitis and otitis externa**

C- Photosensitivity and alopecia

D- Photosensitivity and blepharitis

E- Blepharitis and alopecia

Q44. A 26-year-old male presents with a rash. Examination reveals erythematous oval lesions on his back and upper arms which have a slight scale just inside the edge. They vary in size from 1 to 5 cm in diameter. What is the most likely diagnosis?

A- Lichen planus

B- Guttate psoriasis

C- Lichen sclerosus

**D- Pityriasis rosea**

E- Pityriasis versicolor

Q45. Which of the following statements regarding psoriasis is incorrect?

A- Often occurs on extensor surfaces

B- Psoriatic arthropathy may occur prior to the development of skin lesions

**C- Mediated by type 2 helper T cells**

D- Abnormal T cell activity stimulates keratinocyte proliferation

E- Nail signs include pitting and onycholysis

Q46. A 24-year-old woman presents due to a rash on her neck and forehead. She returned from a holiday in Cyprus 1 week ago and had her hair dyed 2 days ago. On examination there is a weepy, vesicular rash around her hairline although the scalp itself is not badly affected. What is the most likely diagnosis?

A- Cutaneous leishmaniasis

B- Irritant contact dermatitis

**C- Allergic contact dermatitis**

D- Syphilis

E- Photocontact dermatitis

Q47. Which of the following conditions is least likely to exhibit the Koebner phenomenon?

A- Vitiligo

B- Molluscum contagiosum

C- Lichen planus

D- Psoriasis

**E- Lupus vulgaris**

Q48. A 21-year-old woman who is 16 weeks pregnant present with worsening acne which she is finding distressing. She is currently using topical benzyl peroxide with limited effect. On examination there is widespread non-inflammatory lesions and pustules on her face. What is the most appropriate next management step?

A- Oral trimethoprim

B- Oral lymecycline

**C- Oral erythromycin**

D- Topical retinoid

E- Oral doxycycline

Q49. Which one of the following factors would predispose a patient to forming keloid scars?

A- Having white skin

B- Incisions along relaxed skin tension lines

**C- Being aged 20-40 years**

D- Being female

E- Having a wound on the lower back

Q50. A 49-year-old man is reviewed in the dermatology clinic complaining of losing hair. Examination reveals generalised scalp hair loss that does not follow the typical male-pattern distribution. Which one of the following medications is least likely to be responsible?

A- Colchicine

B- Cyclophosphamide

C- Heparin

D- Carbimazole

**E- Phenytoin**

Q51. A 34-year-old man presents with a three week history of an intensely itchy rash on the back of his elbows. On examination he has a symmetrical vesicular rash on the extensor aspects of his arms. Which one of the following antibodies is most likely to be positive?

A- Anti-mitochondrial antibody

**B- Anti-gliadin antibody**

C- Anti-nuclear antibody

D- Anti-neutrophil cytoplasmic antibody

E- Anti-Jo-1 antibody

Q52. A 65-year-old woman presents with bullae on her forearms following a recent holiday in Spain. She also notes that the skin on her hands is extremely fragile and tears easily. In the past the patient has been referred to dermatology due to troublesome hypertrichosis. What is the most likely diagnosis?

A- Pellagra

B- Pemphigus vulgaris

C- Epidermolysis bullosa

D- Bullous pemphigoid

**E- Porphyria cutanea tarda**

Q53. A 34-year-old man comes for review. Over the past two weeks he has developed a number of painful, erythematous lesions on his shins. He has no dermatological history of note and is usually fit and well. On examination the lesions are consistent with erythema nodosum. You arrange some baseline investigations. He asks what is likely to happen. What is the most appropriate response?

A- Heal without scarring if steroids are given within 2 weeks

B- Heal without scarring within 6-12 months

**C- Heal without scarring within 1-2 months**

D- Heal with scarring within 1-2 months

E- Heal with scarring within 6-12 months

Q54. A 64-year-old woman presents with severe mucosal ulceration associated with the development of blistering lesions over her torso and arms. On examination the blisters are flaccid and easily ruptured when touched. What is the most likely diagnosis?

**A- Pemphigus vulgaris**

B- Pemphigoid

C- Dermatitis herpetiformis

D- Psoriasis

E- Epidermolysis bullosa

Q55. A 17-year-old man presents with a 2 week history of abdominal pain, diarrhoea and repeated episodes of flushing. Examination reveals urticarial skin lesions on the trunk. What test is most likely to reveal the diagnosis?

A- Chest x-ray

B- Urinary catecholamines

C- Serum amylase

D- Urinary 5-HIAA

**E- Urinary histamine**

Q56. Which of the following skin conditions associated with malignancy are not correctly paired?

A- Necrolytic migratory erythema and glucagonoma

B- Migratory thrombophlebitis and pancreatic cancer

**C- Erythema gyratum repens and lymphoma**

D- Acanthosis nigricans and gastrointestinal cancer

E- Erythroderma and lymphoma

Q57. A 54-year-old man presents with a two month history of a rapidly growing lesion on his right forearm. The lesion initially appeared as a red papule but in the last two weeks has become a crater filled centrally with yellow/brown material. On examination the man has skin type II, the lesion is 4 mm in diameter and is morphologically as described above. What is the most likely diagnosis?

A- Seborrhoeic keratosis

**B- Keratoacanthoma**

C- Pyoderma gangrenosum

D- Basal cell carcinoma

E- Malignant melanoma

Q58. You review a 50-year-old man who has psoriasis. Which one of the following medications is most likely exacerbate his condition?

A- Nicorandil

B- Simvastatin

C- Verapamil

**D- Atenolol**

E- Isosorbide mononitrate

Q59. A 23-year-old man presents as he is concerned over recent hair loss. Examination reveals a discrete area of hair loss on the left temporal region with no obvious abnormality of the underlying scalp. What is the most likely diagnosis?

A- Telogen effluvium

**B- Alopecia areata**

C- Tinea capitis

D- Male-pattern baldness

E- Discoid lupus erythematous

Q60. A 25-year-old male presents with extensive patches of altered pigmentation on his front, back, face and thighs. There is mild pruritus. A diagnosis of extensive pityriasis versicolor is made. What is the most appropriate management?

A- Oral metronidazole

B- Topical terbinafine

**C- Oral itraconazole**

D- Topical selenium sulphide

E- Oral terbinafine

Q61. A 54-year-old woman with a history of type 1 diabetes mellitus presents with unsightly toenails affecting the lateral three nails of the left foot. On examination the nails and brown and break easily. Nail scrapings demonstrate Trichophyton rubrum infection. What is the treatment of choice?

**A- Oral terbinafine for 12 weeks**

B- Oral itraconazole for 4 weeks

C- Topical itraconazole for 2 weeks

D- Topical amorolfine for 6 weeks

E- Oral itraconazole for 1 weeks

Q62. A 81-year-old man is investigated after he develops a number of itchy blisters on his trunk. A skin biopsy suggests a diagnosis bullous pemphigoid. This is most likely to be caused by antibodies directed against:

A- Adherens

B- Desmoglein-3

**C- Hemidesmosomal BP antigens**

D- Occludin-2

E- Desmoglein-1

Q63. A 60-year-old woman presents with a swelling just proximal to the nail bed on the left ring finger. She has a history of osteoarthritis but is usually well. On examination a 4mm, firm dome-shaped swelling is seen. What is the most likely diagnosis?

A- Fibrokeratoma

B- Epidermoid cyst

C- Orf

**D- Myxoid cyst**

E- Rheumatoid nodule

Q64. A 3-year-old girl is taken to her doctor due to a rash on the right upper arm. On examination multiple raised lesions of about 2 mm in diameter are seen. On close inspection a central dimple is present in the majority of lesions. What is the likely diagnosis?

A- Roseola infantum

**B- Molluscum contagiosum**

C- Kawasaki disease

D- Viral warts

E- Pityriasis rosea

Q65. A 45-year-old man with a history of seborrhoeic dermatitis presents in late winter due a flare in his symptoms, affecting both his face and scalp. Which one of the following agents is least likely to be beneficial?

A- Topical ketoconazole

B- Selenium sulphide shampoo

C- Topical hydrocortisone

D- Tar shampoo

**E- Aqueous cream**

Q66. A 48-year-old man with a history of psoriasis develops plaques on his face. Of the following options, which one is the most appropriate treatment?

A- Hydrocortisone 1%

B- Calcipotriol

C- Coal tar

D- Dithranol

E- Tacrolimus

Q67. A 22-year-old male is referred to dermatology clinic with a longstanding problem of bilateral excessive axillary sweating. He is otherwise well but the condition is affecting his confidence and limiting his social life. What is the most appropriate management?

A- Non-sedating antihistamine

B- Topical hydrocortisone 1%

C- Perform thyroid function tests

**D- Topical aluminium chloride**

E- Trial of desmopressin

Q68. A 23-year-old man presents with a 4 day history of an itchy and sore right ear. He has recently returned from holiday in Spain. On examination the right ear canal is inflamed but no debris is seen. The tympanic membrane is clearly visible and is unremarkable. What is the most appropriate management?

**A- Topical corticosteroid + aminoglycoside**

B- Topical corticosteroid

C- Refer to ENT

D- Topical corticosteroid + clotrimazole

E- Oral flucloxacillin

Q69. A 29-year-old man consults you regarding a rash he has noticed around his groin. It has been present for the past 3 months and is asymptomatic. On examination there is a symmetrical well-demarcated, brownred macular rash around the groin. What is the most likely diagnosis?

**A- Erythrasma**

B- Pityriasis versicolor

C- Secondary syphilis

D- Acanthosis nigricans

E- Candidal intertrigo

Q70. Which one of the following conditions is least associated with photosensitivity?

A- Discoid lupus erythematous

B- Systemic lupus erythematous

C- Herpes labialis

**D- Acute intermittent porphyria**

E- Xeroderma pigmentosum

Q71. A 15-year-old girl presents with an urticarial rash, angioedema and wheezing. Her mother states that she has just come from her younger sister's party where she had been helping to blow up balloons. What is the most likely diagnosis?

A- C1-esterase deficiency (hereditary angioedema)

B- Allergic contact dermatitis

C- Peanut allergy

**D- Latex allergy**

E- Irritant contact dermatitis

Q72. A 72-year-old woman is diagnosed with a number of erythematous, rough lesions on the back of her hands. A diagnosis of actinic keratoses is made. What is the most appropriate management?

A- Reassurance

B- Urgent referral to a dermatologist

**C- Topical fluorouracil cream**

D- Review in 3 months

E- Topical betnovate

Q73. An 84-year-old woman with a history of ischaemic heart disease is reviewed in the dermatology clinic. Her current medication includes aspirin, simvastatin, bisoprolol, ramipril and isosorbide mononitrate. She has developed tense blistering lesions on her legs. Each lesion is around 1 to 3 cm in diameter and she reports that they are slightly pruritic. Examination of her mouth and vulva is unremarkable. What is the most likely diagnosis?

A- Pemphigus

B- Drug reaction to aspirin

C- Epidermolysis bullosa

D- Scabies

**E- Bullous pemphigoid**

Q74. A 29-year-old man presents due to the development of 'hard skin' on his scalp. On examination he has a 9cm circular, white, hyperkeratotic lesion on the crown of his head. He has no past history of any skin or scalp disorder. Skin scrapings are reported as follows: No fungal elements seen What is the most likely diagnosis?

**A- Psoriasis**

B- Dissecting cellulitis

C- Kerion

D- Systemic lupus erythematous

E- Seborrhoeic dermatitis

Q75. A 15-year-old male returns to the dermatology clinic for review. He has a past history of acne and is currently treated with oral lymecycline. There has been no response to treatment and examination reveals evidence of scarring on his face. What is the most suitable treatment?

A- Oral doxycycline

B- Oral cyproterone acetate

**C- Oral isotretinoin**

D- IV retinoin

E- Topical retinoids

Q76. Each one of the following is associated with yellow nail syndrome except:

A- Chronic sinus infections

B- Bronchiectasis

**C- Azoospermia**

D- Congenital lymphoedema

E- Pleural effusions

Q77. A 54-year-old woman is prescribed topical fusidic acid for a small patch of impetigo around her nose. She has recently been discharged from hospital following varicose vein surgery. Seven days after starting treatment there has been no change in her symptoms. Examination reveals a persistent small, crusted area around the right nostril. Whilst awaiting the results of swabs, what is the most appropriate management?

A- Oral vancomycin

B- Oral erythromycin

C- Topical metronidazole

**D- Topical mupirocin**

E- Oral flucloxacillin

Q78. Café-au-lait spots are seen in each of the following, except:

A- McCune-Albright syndrome

**B- Friedreich's ataxia**

C- Neurofibromatosis

D- Fanconi anaemia

E- Tuberous sclerosis

Q79. A 43-year-old presents with itchy lesions on the soles of both feet. These have been present for the past two months. On examination small blisters are seen with surrounding dry and cracked skin. What is the most likely diagnosis?

A- Porphyria cutanea tarda

B- Pustular psoriasis

**C- Pompholyx**

D- Bullous pemphigoid

E- Pemphigus

Q80. A 45-year-old woman is presents with itchy, violaceous papules on the flexor aspects of her wrists. She is normally fit and well and has not had a similar rash previously. Given the likely diagnosis, what other feature is she most likely to have?

A- Onycholysis

B- Raised ESR

**C- Mucous membrane involvement**

D- Pain in small joints

E- Microscopic haematuria

Q81. A 9-year-old child with a history of atopic eczema presents with a sudden worsening of her skin. Her eczema is usually well controlled with emollients but her parents are concerned as the facial eczema has got significantly worse overnight. She now has painful clustered blisters on both cheeks, around her mouth on her neck. Her temperature is 37.9ºC. What is the most appropriate management?

A- Advise paracetamol + emollients and reassure

**B- Intravenous aciclovir**

C- Potent topical steroid

D- Intravenous flucloxacillin

E- Oral fluconazole

Q82. A woman presents with painful erythematous lesions on her shins. Which one of the following is least associated with this presentation?

A- Pregnancy

B- Behcet's syndrome

C- Streptococcal infection

D- Penicillin

**E- Amyloidosis**

Q83. A 34-year-old female is reviewed in the dermatology clinic with a skin rash under her new wrist watch. An allergy to nickel is suspected. What is the best investigation?

A- Skin prick test

**B- Skin patch test**

C- Skin biopsy

D- Serum IgE

E- Serum nickel antibodies

Q84. A 43-year-old woman is referred to psychiatry following repeated episodes of hypomaniac behaviour interspersed with periods of depression. Her past medical history includes psoriasis and a deep vein thrombosis 11 years ago. Which one of the following medications is most likely to worsen her psoriasis?

A- Sodium valproate

B- Quetiapine

**C- Lithium**

D- Valproaic acid

E- Fluoxetine

Q85. A 20-year-old man presents with acute gingivitis associated with oral ulceration. A diagnosis of primary herpes simplex infection is suspected. Which one of the following types of rash is he most likely to go an develop?

A- Erythema ab igne

B- Erythema nodosum

C- Erythema chronicum migrans

D- Erythema marginatum

**E- Erythema multiforme**

Q86. A 17-year-old female originally from Nigeria presents due to a swelling around her earlobe. She had her ears pierced around three months ago and has noticed the gradual development of an erythematous swelling since. On examination a keloid scar is seen. What is the most appropriate management?

A- Intralesional diclofenac

B- Advise no treatment is available

**C- Intralesional triamcinolone**

D- Advise will spontaneously regress within 4-6 months

E- Intralesional sclerotherapy

Q87. A 58-year-old woman presents with a persistent erythematous rash on her cheeks and a 'red nose'. She describes occasional episodes of facial flushing. On examination erythematous skin is noted on the nose and cheeks associated with occasional telangiectasia. What is the most appropriate management?

**A- Topical metronidazole**

B- Topical isotretinoin

C- Benzyl peroxide

D- Daktacort

E- Topical hydrocortisone

Q88. A 78-year-old nursing home resident is reviewed due to the development of an intensely itchy rash. On examination red linear lesions are seen on the wrists and elbows, and red papules are present on the penis. What is the most appropriate management?

**A- Topical permethrin**

B- Referral to GUM clinic

C- Topical betnovate

D- Topical ketoconazole

E- Topical selenium sulphide

Q89. A 63-year-old man who is known to have type 2 diabetes mellitus presents with a number of lesions over his shins. On examination there are a number of 3-4 mm smooth, firm, papules which are hyperpigmented and centrally depressed. What is the most likely diagnosis?

A- Lupus vulgaris

B- Necrobiosis lipoidica diabeticorum

C- Guttate psoriasis

**D- Granuloma annulare**

E- Pyoderma gangrenosum

Q90. A 50-year-old chronic alcoholic presents with a persistent skin rash on his hands, arms, neck and face. The rash is red-brown in colour, symmetrical and scaly. He also complains of a poor appetite, nausea and diarrhoea. Which vitamin deficiency is most likely to have caused his symptoms?

**A- Niacin**

B- Folic acid

C- Thiamine

D- Vitamin B6

E- Zinc

Q91. A 34-year-old man with a history of polyarthralgia, back pain and diarrhoea is found to have a 3 cm red lesion on his shin which is starting to ulcerate. What is the most likely diagnosis?

A- Systemic Shigella infection

B- Syphilis

C- Metastatic colon cancer

D- Erythema nodosum

**E- Pyoderma gangrenosum**

Q92. A 33-year-old is investigated for lethargy. The full blood count is reported as follows: Hb 10.1 g/dl Plt 156 \* 109 /l WBC 3.7 \* 109 /l His daughter was unwell one week previously with a pyrexial illness associated with a red rash on her cheeks. What is the most likely cause?

A- Measles

B- Coxsackie a16

C- Group A haemolytic streptococci

**D- Parvovirus B19**

E- HHV-6 (Human Herpesvirus-6)

Q93. Which one of the following is least likely to cause a bullous rash?

A- Furosemide

B- Friction

**C- Lichen planus**

D- Insect bite

E- Epidermolysis bullosa

Q94. A 64-year-old female is referred to dermatology due to a non-healing skin ulcer on her lower leg. This has been present for around 6 weeks and the appearance didn't improve following a course of oral flucloxacillin. What is the most important investigation to perform first?

A- MRI

B- Rheumatoid factor titres

**C- Ankle-brachial pressure index**

D- Swab of ulcer for culture and sensitivity

E- X-ray

Q95. A 33-year-old woman is reviewed in the dermatology clinic with patchy, well demarcated hair loss on the scalp. This is affecting around 20% of her total scalp, and causing significant psychological distress. A diagnosis of alopecia areata is suspected. Which one of the following is an appropriate management plan?

A- Topical 5-FU cream

B- Autoimmune screen

C- Topical ketoconazole

**D- Topical corticosteroid**

E- Autoimmune screen + topical ketoconazole

Q96. A 17-year-old female presents with multiple comedones, pustules and papules on her face. Which one of the following is least likely to improve her condition?

A- Topical retinoids

**B- Dietary advice**

C- Sunlight

D- Oral trimethoprim

E- Ethinylestradiol with cyproterone acetate

Q97. Each of the following drugs may be used in psoriasis, except:

**A- Interferon alpha**

B- Infliximab

C- Retinoids

D- Methotrexate

E- Ciclosporin

Q98. A 34-year-old female with a history of discoid lupus erythematous is reviewed in clinic. The erythematous, scaly rash on her face has not responded to topical steroid creams. What is the most appropriate next step in management?

A- UV light therapy

**B- Oral hydroxychloroquine**

C- Topical dapsone

D- Oral prednisolone

E- Topical hydroxychloroquine

Q99. A 35-year-old female presents tender, erythematous nodules over her forearms. Blood tests reveal: Calcium 2.78 mmol/l What is the most likely diagnosis?

A- Granuloma annulare

**B- Erythema nodosum**

C- Lupus pernio

D- Erythema multiforme

E- Necrobiosis lipoidica

Q100. A 62-year-old woman mentions in diabetes clinic that she has a 'volcano' like spot on her left cheek, which has appeared over the past 3 months. She initially thought it may be a simple spot but it has not gone away. On examination she has a 5 mm red, raised lesion with a central keratin filled crater. A clinical diagnosis of probable keratoacanthoma is made. What is the most suitable management?

A- Reassure will spontaneously involute within 3 months

**B- Urgent referral to dermatology**

C- Topical 5-FU

D- Non-urgent referral to dermatology

E- Oral prednisolone

Q101. A 74-year-old woman develops tense, itchy blisters on her inner thighs and upper arms. Given the likely diagnosis, what will immunofluorescence of the skin biopsy demonstrate?

A- Loss of fibrinogen at the basement membrane

B- Granular IgG along the basement membrane

C- IgM crystallization at the dermal junctions

D- Linear IgA deposits at the dermoepidermal junction

**E- IgG and C3 at the dermoepidermal junction**

Q102. A patient who is suspected of having dermatitis herpetiformis undergoes a skin biopsy. Which one of the following antibodies is most likely to be found in the dermis?

A- IgM

**B- IgA**

C- IgD

D- IgE

E- IgG

Q103. A 31-year-old female with polycystic ovarian syndrome consults you as she is troubled with excessive facial hair. Switching her combined oral contraceptive pill to co-cyprindiol has had no effect. On examination she has hirsutism affecting her moustache, beard, and temple areas. What is the most appropriate treatment?

A- Topical salicylic acid

B- Topical adapalene

C- Oral clomifene

**D- Topical eflornithine**

E- Topical tazarotene

Q104. A 69-year-old woman with a history of learning difficulties is reviewed in clinic. She is known to have erythema ab igne on her legs but according to her carer still spends long hours in front of her electric fire. Which one of the following skin lesions is she at risk of developing?

**A- Squamous cell carcinoma**

B- Cutaneous T-cell lymphoma of the skin

C- Dermatofibrosarcoma protuberans

D- Basal cell carcinoma

E- Malignant melanoma

Q105. A 43-year-old woman who is a recent immigrant from Mozambique is referred to the dermatology outpatient clinic. She has developed a number of hypopigmented, oval shaped lesions on her body which are associated with reduced sensation. These are mainly located on the extensor surfaces of her limbs. She has no past medical history of note other than suffering from malaria as a child. What is the most likely diagnosis?

A- HIV

B- Chagas disease

C- Pityriasis versicolor

D- Tuberculosis

**E- Leprosy**

Q106. Which one of the following is least recognised as a cause of erythroderma in the UK?

A- Lymphoma

B- Drug eruption

**C- Lichen planus**

D- Psoriasis

E- Eczema

Q107. A patient develops an eczematous, weeping rash on his wrist following the purchase of a new watch. In the Gell and Coombs classification of hypersensitivity reactions this is an example of a:

A- Type I reaction

B- Type II reaction

C- Type III reaction

**D- Type IV reaction**

E- Type V reaction

Q108. A 72-year-old woman who is known to have type 2 diabetes mellitus and heart failure is reviewed. One week ago she was treated with oral flucloxacillin and penicillin V for a right lower limb cellulitis. Unfortunately there has been no response to treatment. What is the most appropriate next line antibiotic?

A- Co-amoxiclav

B- Erythromycin

**C- Clindamycin**

D- Vancomycin

E- Gentamicin

Q109. A 14-year-old male is reviewed due to a patch of scaling and hair loss on the right side of his head. A skin scraping is sent which confirms a diagnosis of tinea capitis. Which organism is most likely to be responsible?

**A- Trichophyton tonsurans**

B- Microsporum distortum

C- Trichophyton verrucosum

D- Microsporum audouinii

E- Microsporum canis

Q110. A 67-year-old man with recurrent actinic keratoses on his scalp is reviewed. Which one of the following is not a treatment option for the management of this condition?

A- Topical diclofenac

**B- Topical betnovate**

C- Topical fluorouracil

D- Topical imiquimod

E- Cryotherapy

Q111. A 72-year-old man is investigated for oral ulceration. A biopsy suggests pemphigus vulgaris. This is most likely to be caused by antibodies directed against:

A- Hemidesmosomal BP180

B- Occludin-2

C- Hemidesmosomal BP230

**D- Desmoglein**

E- Adherens

Q112. Which one of the following drugs is most likely to result in a photosensitive rash?

A- Gentamicin

B- Erythromycin

C- Penicillin

**D- Tetracycline**

E- Amoxicillin

Q113. A 78-year-old woman asks you for cream to treat a lesion on her left cheek. It has been present for the past nine months and is asymptomatic. On examination you find a 2 \* 3 cm area of flat brown pigmentation with a jagged, irregular edge. The pigmentation on the anterior aspect of the lesion is a darker brown. What is the most likely diagnosis?

A- Solar lentigo

B- Dermatofibroma

**C- Lentigo maligna**

D- Bowen's disease

E- Seborrhoeic keratosis

Q114. A 45-year-old man who presented with itchy lesions on his hands is diagnosed with scabies. It is decided to treat him with permethrin 5%. You have explained the need to treat all members of the household and hot wash all bedding and clothes. What advice should be given about applying the cream?

A- From neck down + leave for 12 hours

B- All skin including scalp + leave for 12 hours + retreat in 2 days

**C- All skin including scalp + leave for 12 hours + retreat in 7 days**

D- From neck down + leave for 4 hours

E- From neck down + leave for 12 hours + retreat in 7 days

Q115. A 17-year-old male is reviewed six weeks after starting an oral antibiotic for acne vulgaris. He stopped taking the drug two weeks ago due to perceived alteration in his skin colour, and denies been exposed to strong sunlight for the past six months. On examination he has generalised increased skin pigmentation, including around the buttocks. Which one of the following antibiotics was he likely to be taking?

A- Doxycycline

B- Oxytetracycline

C- Tetracycline

D- Erythromycin

**E- Minocycline**

Q116. A 67-year-old man is diagnosed with actinic keratoses on his right temple and prescribed fluorouracil cream. One week later he presents as the skin where he is applying treatment has become red and sore. On examination there is no sign of weeping or blistering. What is the most appropriate action?

**A- Continue fluorouracil cream + review in 1 week**

B- Complete a 'Yellow Card'

C- Stop fluorouracil cream + prescribe topical hydrocortisone

D- Continue fluorouracil cream + prescribe topical hydrocortisone to use concurrently

E- Stop fluorouracil cream

Q117. A 19-year-old man is started on isotretinoin for severe nodulo-cystic acne. Which one of the following side-effects is most likely to occur?

A- Low mood

B- Thrombocytopaenia

C- Raised plasma triglycerides

D- Reversible alopecia

**E- Dry skin**

Q118. Which one of the following statements regarding fungal nail infections is incorrect?

A- Candida accounts for less than 10% of cases

B- Diagnosis should be confirmed by microbiology before starting treatment

**C- Treatment is successful in around 90-95% of people**

D- Thickened, rough, opaque nails are typical

E- Suitable investigations include nail clippings

Q119. A 65-year-old woman with blistering lesions on her leg is diagnosed as having bullous pemphigoid. What is the most appropriate initial management?

A- Reassurance

B- Topical corticosteroids

C- Oral itraconazole

D- Screen for solid-tumour malignancies

**E- Oral corticosteroids**

Q120. Each one of the following is associated with hypertrichosis, except:

A- Anorexia nervosa

B- Porphyria cutanea tarda

**C- Psoriasis**

D- Minoxidil

E- Ciclosporin

Q121. Which one of the following antibiotics is most associated with the development of Stevens-Johnson syndrome?

**A- Co-trimoxazole**

B- Ethambutol

C- Chloramphenicol

D- Ciprofloxacin

E- Gentamicin

Q122. A 33-year-old man presents complaining of an itchy scalp and dandruff. On examination he is noted to have eczema on his scalp, behind his ears and around his nose. He has tried 'Head and Shoulders' and 'Neutrogen T-gel' but with poor results. Which one of the following is the most appropriate treatment for his scalp?

A- Topical hydrocortisone

B- Oral metronidazole

C- Topical selenium sulphide

D- Oral terbinafine

**E- Topical ketoconazole**

Q123. A 34-year-old patient who is known to have psoriasis presents with erythematous skin in the groin and genital area. He also has erythematous skin in the axilla. In the past he has expressed a dislike of messy or cumbersome creams. What is the most appropriate treatment?

**A- Topical steroid**

B- Topical dithranol

C- Topical clotrimazole

D- Coal tar

E- Topical calcipotriol

Q124. Which one of the following statements regarding vitiligo is true?

A- It is seen in around 0.1% of patients

B- The average age of onset is 40-50 years

**C- Skin trauma may precipitate new skin lesions**

D- It is rare in Caucasian people

E- The torso tends to be affected first

Q125. A 50-year-old man presents with shiny, flat-topped papules on the palmar aspect of the wrists. He is mainly bothered by the troublesome and persistent itching. A diagnosis of lichen planus is suspected. What is the most appropriate treatment?

A- Refer for punch biopsy

B- Emollients + oral antihistamine

C- Topical dapsone

D- Topical clotrimazole

**E- Topical clobetasone butyrate**

Q126. Which of the following skin conditions associated with malignancy are not correctly paired?

A- Erythroderma and lymphoma

**B- Necrolytic migratory erythema and gastrinoma**

C- Acanthosis nigricans and gastrointestinal cancer

D- Sweet's syndrome and myelodysplasia

E- Erythema gyratum repens and lung cancer

Q127. A 30-year-old man presents with painful, purple coloured lesions on his shins. Some of these lesions have started to heal and no evidence of scarring is seen. These have been present for the past 2 weeks. There is no past medical history of note and he takes no regular medications. What is the most useful next investigation?

A- Liver function tests

B- Anti-nuclear antibody

C- ECG

D- HIV test

**E- Chest x-ray**

Q128. A 36-year-old female with a history of ulcerative colitis is diagnosed as having pyoderma gangrenosum. She presented 4 days ago with a 1 cm lesion on her right shin which rapidly ulcerated and is now painful. What is the most appropriate management?

A- Topical hydrocortisone

**B- Oral prednisolone**

C- Surgical debridement

D- Topical tacrolimus

E- Infliximab

## **Chapter 10 Nephrology**

Q1. A 27-year-old man is investigated for haemoptysis. He is a non-smoker and has no respiratory history of note. Whilst awaiting a bronchoscopy he becomes lethargic and anorexic. Blood tests show the following: Na+ 141 mmol/l K + 5.3 mmol/l Urea 16.7 mmol/l Creatinine 271 µmol/l A renal biopsy is performed and shows linear IgG deposits along the basement membrane. What type of antibodies are most likely to cause this type of presentation?

A- cANCA

B- IgA

C- pANCA

D- Anti-nuclear antibodies (ANA)

**E- Anti-glomerular basement membrane (anti-GBM) antibodies**

Q2. A 24-year-old woman is diagnosed as having nephrotic syndrome after being investigated for proteinuria. A diagnosis of minimal change glomerulonephritis is made. What is the most appropriate initial treatment to reduce proteinuria?

A- Protein restriction in diet

B- No treatment shown to effective

C- Angiotensin-converting-enzyme inhibitor

D- Diuretic

**E- Prednisolone**

Q3. A 64-year-old female is brought to the Emergency Department by her family, who are concerned about her increasing confusion over the past 2 days. On examination she is found to be pyrexial at 38ºC. Blood tests reveal: Hb 9.6 g/dl Platelets 65 \* 109 /l WCC 11.1 \* 109 /l Urea 23.1 mmol/l Creatinine 366 µmol/l What is the most likely diagnosis?

A- Wegener's granulomatosis

**B- Thrombotic thrombocytopenic purpura**

C- Haemolytic uraemic syndrome

D- Idiopathic thrombocytopenic purpura

E- Rapidly progressive glomerulonephritis

Q4. A 45-year-old female with nephrotic syndrome develops renal vein thrombosis. What changes in patients with nephrotic syndrome predispose to the development of venous thromboembolism?

A- Reduced excretion of protein S

**B- Loss of antithrombin III**

C- Reduced excretion of protein C

D- Loss of fibrinogen

E- Reduced metabolism of vitamin K

Q5. A 14-year-old girl is referred to the paediatric unit with reduced urine output and lethargy. She has been passing bloody diarrhoea for the past four days. On admission she appears dehydrated. Bloods show the following: Na+ 142 mmol/l K + 4.8 mmol/l Bicarbonate 22 mmol/l Urea 10.1 mmol/l Creatinine 176 µmol/l Hb 10.4 g/dl MCV 90 fl Plt 91 \* 109 /l WBC 14.4 \* 109 /l Given the likely diagnosis, which one of the following organisms is the most likely cause?

A- Campylobacter

B- Giardiasis

**C- E- coli**

D- Salmonella

E- Shigella

Q6. A 17-year-old man is referred to the local nephrology unit for investigation. He reports having several episodes of visible haematuria. There is no history of abdominal or loin pain. These typically seem to occur within a day or two of developing an upper respiratory tract infection. Urine dipstick is normal. Blood tests show the following: Na+ 141 mmol/l K + 4.3 mmol/l Bicarbonate 25 mmol/l Urea 4.1 mmol/l Creatinine 72 µmol/l What is the most likely diagnosis?

A- Chlamydia

B- Bladder cancer

**C- IgA nephropathy**

D- Rhinovirus-associated nephropathy

E- Post-streptococcal glomerulonephritis

Q7. A 54-year-old woman with a history membranous glomerulonephritis secondary to systemic lupus erythematous is admitted to hospital. Her previous stable renal function has deteriorated rapidly. The following blood tests were obtained: Na+ 139 mmol/l K + 5.8 mmol/l Urea 44 mmol/l Creatinine 867 µmol/l Albumin 17 g/l ESR 49 mm/hr Urinary protein 14 g/24 hours Urine dipstick protein +++ blood ++ What has likely caused the sudden deterioration in renal function?

A- Exacerbation of SLE

**B- Renal vein thrombosis**

C- Bilateral hydronephrosis

D- Acute interstitial nephritis

E- Analgesic nephropathy

Q8. A 25-year-old woman with a history of end-stage renal disease secondary to focal segmental glomerulosclerosis presents to the Emergency Department. For the past 12 months she has used Continuous Ambulatory Peritoneal Dialysis (CAPD). She feels generally unwell with abdominal pain and a fever. She also describes her last bag as being 'cloudy'. Which organism is most likely to be responsible for this presentation?

A- Streptococcus pyogenes

B- Enterococcus

**C- Staphylococcus epidermidis**

D- Streptococcus agalactiae

E- Escherichia coli

Q9. A 25-year-old man has a renal biopsy due to worsening renal function. This reveals linear IgG deposits along the basement membrane. What is the most likely diagnosis?

A- Systemic lupus erythematous

B- IgA nephropathy

C- Minimal change disease

D- Post-streptococcal glomerulonephritis

**E- Goodpasture's syndrome**

Q10. A 65-year-old female with a 20 year history of rheumatoid arthritis is referred to the acute medical unit with bilateral leg oedema. The following results are obtained: Urea 11.2 mmol/l Creatinine 205 µmol/l Albumin 26 g/l Bilirubin 12 mmol/l ALP 120 IU/l Urine protein 6.2 g/24 hours Which investigation is most likely to lead to the correct diagnosis?

A- CT abdomen

B- Plasma magnesium

C- Intravenous urogram

**D- Rectal biopsy**

E- Renal angiogram

Q11. Which one of the following types of glomerulonephritis is most characteristically associated with partial lipodystrophy?

A- Minimal change disease

B- Diffuse proliferative glomerulonephritis

**C- Mesangiocapillary glomerulonephritis**

D- Membranous glomerulonephritis

E- Rapidly progressive glomerulonephritis

Q12. A 67-year-old woman presents for review due to ankle swelling. She has a history of rheumatoid arthritis which was diagnosed when she was 24 years old and a 8 year history of type 2 diabetes mellitus. Her current medication includes metformin and methotrexate. On examination she has bilateral pitting lower limb oedema. A 24 hour urine collection is reported as follows: 24 hr urinary protein 4.8g What is the most likely cause of her leg oedema?

A- Diabetic nephropathy

B- Nephrotic syndrome secondary to methotrexate

C- Dilated cardiomyopathy secondary to methotrexate

**D- Amyloidosis**

E- Protein-losing enteropathy secondary to metformin

Q13. An sample of tissue from a renal biopsy is viewed using an electron microscope. Podocyte fusion is seen. Which one of the following types of glomerulonephritis is most associated with this finding?

A- Membranous glomerulonephritis

B- IgA nephropathy

C- Focal segmental glomerulosclerosis

D- Mesangiocapillary glomerulonephritis

**E- Minimal change glomerulonephritis**

Q14. A 54-year-old man who had a renal transplant two years ago is reviewed in clinic. He is currently taking a combination of ciclosporin and mycophenolate as immunosuppressive therapy. Two weeks ago he was discharged on oral fluconazole after inpatient treatment for a fungal pneumonia. His creatinine level has increased from 114 µmol/l before hospital admission to 187 µmol/l today. What is the most likely factor contributing to this rise?

A- Amphotericin-B induced membranous glomerulonephritis

**B- Ciclosporin nephrotoxicity**

C- 5-fluorocytosine induced minimal change glomerulonephritis

D- Mycophenolate nephrotoxicity

E- Fluconazole nephrotoxicity

Q15. Each of the following is a risk factor for renal stone formation, except:

A- Renal tubular acidosis

B- Cadmium

C- Hyperparathyroidism

D- Dehydration

**E- Cystinosis**

Q16. Each one of the following is a recognised side-effect of erythropoietin, except:

A- Urticaria

B- Hypertension

C- Bone aches

**D- Long bone fractures**

E- Pure red cell aplasia

Q17. A 27-year-old man is diagnosed with Goodpasture's syndrome. Which one of the following does not increase the likelihood of a pulmonary haemorrhage?

A- Smoking

B- Inhalation of hydrocarbons

C- Male gender

**D- Dehydration**

E- Lower respiratory tract infection

Q18. A 72-year-old woman who has been on the ward for the past five days is noted by the nurses not to be passing much urine. She was admitted originally with pneumonia but has since developed diarrhoea. Blood tests show her creatinine has increased from 98 to 172 µmol/l. Which one of the following tests is most useful when determining whether there is prerenal uraemia or acute tubular necrosis?

A- Serum urea level

B- Haemoglobin concentration

C- Plasma osmolality

D- Urinary urea

**E- Urinary sodium**

Q19. Which one of the following statements regarding the assessment of proteinuria in patients with chronic kidney disease is incorrect?

A- Albumin:creatinine ratio (ACR) is more sensitive than protein:creatinine ratio (PCR)

B- An ACR of 30 mg/mmol is approximately equal to a PCR of 50 mg/mmol

**C- An ACR sample is collected over 24 hours**

D- Women typically have higher ACR values

E- An ACR of 3.1 mg/mmol in a diabetic man is clinically significant

Q20. Which one of the following is least recognised as a cause of membranous glomerulonephritis?

A- Malaria

B- Lymphoma

C- Hepatitis B

**D- Cryoglobulinaemia**

E- Gold

Q21. Autosomal dominant polycystic kidney disease type 1 is associated with a gene defect in:

A- Chromosome 4

B- Chromosome 8

C- Chromosome 12

**D- Chromosome 16**

E- Chromosome 20

Q22. A 35-year-old female is admitted to hospital with hypovolaemic shock. CT abdomen reveals a haemorrhagic lesion in the right kidney. Following surgery and biopsy this is shown to be an angiomyolipomata. What is the most likely underlying diagnosis?

A- Neurofibromatosis

B- Budd-Chiari syndrome

C- Hereditary haemorrhagic telangiectasia

D- Von Hippel-Lindau syndrome

**E- Tuberous sclerosis**

Q23. Which one of the following causes of glomerulonephritis is associated with normal complement levels?

A- Post-streptococcal glomerulonephritis

B- Mesangiocapillary glomerulonephritis

C- Subacute bacterial endocarditis

**D- Goodpasture's syndrome**

E- Systemic lupus erythematous

Q24. An 18-year-old girl who is deaf and has a history of renal impairment is reviewed in clinic. She has previously been diagnosed with Alport's syndrome but is thinking about having children and asks about the risks of passing the condition on. What is the mode of inheritance of Alport's syndrome in the majority of cases?

**A- X-linked dominant**

B- Mitochondrial

C- Autosomal recessive

D- Autosomal dominant

E- X-linked recessive

Q25. A 73-year-old with a history of alcohol excess is admitted following a fall at home. On admission the following blood results are obtained: Urea 3.5 mmol/l Creatinine 110 µmol/l Creatine kinase 180 u/l Three days later the blood results are as follows: Urea 14.5 mmol/l Creatinine 248 µmol/l Creatine kinase 4,400 u/l Which one of the following would have been most likely to prevent the deterioration in renal function?

A- Low dose dopamine

B- Urinary acidification

**C- Intravenous fluids**

D- Frusemide

E- Mannitol

Q26. A 10-year-old boy is taken to see the GP by his mother. For the past two days he has had a sore throat associated with blood in his urine. There is no significant past medical history. The GP suspects glomerulonephritis and refers the patient to hospital. What would a renal biopsy most likely show?

A- Proliferation of endothelial cells

B- No change

**C- Mesangial hypercellularity**

D- Basement membrane thickening

E- Capillary wall necrosis

Q27. A 62-year-old man with chronic kidney disease secondary to diabetes mellitus is reviewed. When assessing his estimated glomerular filtration rate (eGFR), which one of the following variables is not required by the Modification of Diet in Renal Disease (MDRD) equation?

A- Age

B- Serum creatinine

C- Ethnicity

D- Gender

**E- Serum urea**

Q28. Which one of the following may be useful in the prevention of calcium renal stones?

A- Pyridoxine

B- Allopurinol

C- Lithium

D- Ferrous sulphate

**E- Thiazide diuretics**

Q29. A 45-year-old man is seen in the Emergency Department with nausea, pallor and lethargy. He has no past medical history of note. A cannula is inserted and bloods show the following Na+ 140 mmol/l K + 6.7 mmol/l Bicarbonate 14 mmol/l Urea 18.2 mmol/l Creatinine 230 µmol/l What is the most appropriate initial management?

A- Nebulised salbutamol

B- Intravenous bicarbonate

C- Haemodialysis

D- Insulin/dextrose infusion

**E- Intravenous calcium gluconate**

Q30. You review a 42-year-old woman six weeks following a renal transplant for focal segmental glomerulosclerosis. Following the procedure she was discharged on a combination of tacrolimus, mycophenolate, and prednisolone. She has now presented with a five day history of feeling generally unwell with anorexia, fatigue and arthralgia. On examination her sclera are jaundiced and she has widespread lymphadenopathy with hepatomegaly. What is the most likely diagnosis?

A- Hepatitis C

B- Epstein-Barr virus

C- HIV

D- Hepatitis B

**E- Cytomegalovirus**

Q31. A 43-year-old man has a work-up for hypertension. He has found to have blood + on a urine dipstick of a freshly voided sample. Which one of the following may account for this finding?

A- Smoking

**B- Exercise**

C- Obesity

D- Eating red meat the previous day

E- Use of ramipril

Q32. Which one of the following types of glomerulonephritis is most characteristically associated with Goodpasture's syndrome?

A- Diffuse proliferative glomerulonephritis

B- Mesangiocapillary glomerulonephritis

C- Membranous glomerulonephritis

**D- Rapidly progressive glomerulonephritis**

E- Focal segmental glomerulosclerosis

Q33. A patient with type 1 diabetes mellitus is reviewed in the nephrology outpatient clinic. He is known to have stage 1 diabetic nephropathy. Which of the following best describes his degree of renal involvement?

A- Latent phase

**B- Hyperfiltration**

C- End-stage renal failure

D- Overt nephropathy

E- Microalbuminuria

Q34. A 13-year-old girl develops purpura on her lower limbs and buttocks associated with microscopic haematuria. A diagnosis of Henoch-Schonlein purpura is made. Her urea and electrolytes show mild renal impairment that is still present 4 weeks later, although she does not require any specific therapy. What is the most likely renal outcome?

A- Hypertension within 20 years

B- Persistent proteinuria

C- End stage renal failure

**D- Full renal recovery**

E- Frequent relapses

Q35. A 47-year-old woman presents with loin pain and haematuria. Urine dipstick demonstrates: Blood ++++ Nitrites POS Leucocytes +++ Protein ++ Urine culture shows a Proteus infection. An x-ray demonstrates a stag-horn calculus in the left renal pelvis. What is the most likely composition of the renal stone?

A- Xanthine

B- Calcium oxalate

**C- Struvite**

D- Cystine

E- Urate

Q36. A 34-year-old man presents to the Emergency Department with abdominal pain. This started earlier on in the day and is getting progressively worse. The pain is located on his left flank and radiates down into his groin. He has had not had a similar pain before and is normally fit and well. Examination reveals a man who is flushed and sweaty but is otherwise unremarkable. What is the most suitable initial management?

A- Oral ciprofloxacin

**B- IM diclofenac 75 mg**

C- Immediate abdominal ultrasound

D- IM morphine 5 mg

E- IM diclofenac 75 mg + start bendroflumethiazide to prevent further episodes

Q37. A 44-year-old man is referred to the renal team. He has a long history of chronic sinusitis and was investigated last year for haemoptysis but no cause was found. A number of recent urine dipstick tests has shown persistent microscopic haematuria. Na+ 140 mmol/l K + 4.8 mmol/l Urea 11.4 mmol/l Creatinine 145 µmol/l ESR 61 mm/hr CRP 30 mg/l anti-GBM Negative cANCA (PR3) Positive pANCA (MPO) Negative ANA Negative Given the likely diagnosis, what findings would be expected on renal biopsy?

A- Segmental tuft necrosis

B- Kimmelstiel-Wilson nodules

**C- Crescentic glomerulonephritis**

D- 'Full-house' immunoglobulin deposition

E- Membranous glomerulonephritis

Q38. A 62-year-old man is reviewed in the renal clinic. He has been referred as his creatinine level increased from 90 to 173 µmol/l after the introduction of ramipril. This had been started in an attempt to control his blood pressure. An ultrasound abdomen is reported as follows: Both kidneys are small with the right measuring 5.8cm and the left 5.6cm Normal liver, pancreas, spleen and bladder outline What is the most appropriate next line investigation?

A- Renal angiography

B- 24 hour urinary protein collection

C- Renal artery Doppler flow studies

D- CT angiography

**E- MR angiography**

Q39. Each one of the following is associated with papillary necrosis, except:

A- Acute pyelonephritis

B- Tuberculosis

C- Chronic analgesia use

**D- Syphilis**

E- Sickle cell disease

Q40. Which one of the following types of glomerulonephritis is most characteristically associated with streptococcal infection in children?

A- Focal segmental glomerulosclerosis

**B- Diffuse proliferative glomerulonephritis**

C- Membranous glomerulonephritis

D- Mesangiocapillary glomerulonephritis

E- Rapidly progressive glomerulonephritis

Q41. A 70-year-old man has been admitted with abdominal pain. The surgeons wish to perform a contrastenhanced CT but are concerned because he has chronic kidney disease stage 3. Other than ensuring adequate hydration, which one of the following can reduce the risk of contrastinduced nephropathy?

A- Oral sodium bicarbonate

B- Oral prednisolone

**C- Oral N-acetylcysteine**

D- Intravenous furosemide

E- Intravenous mannitol

Q42. A 54-year-old man who has end stage diabetic nephropathy is being assessed for a renal transplant. When assessing the HLA matching between donor and recipient what is the most important HLA antigen to match?

A- DP

B- B

**C- DR**

D- C

E- A

Q43. Which one of the following features is least likely to be seen in Henoch-Schonlein purpura?

A- Abdominal pain

B- Renal failure

C- Polyarthritis

**D- Thrombocytopenia**

E- Purpuric rash over buttocks

Q44. Which one of the following is least associated with retroperitoneal fibrosis?

A- Riedel's thyroiditis

B- Previous radiotherapy

C- Inflammatory abdominal aortic aneurysm

D- Methysergide

**E- Sulphonamides**

Q45. A 40-year-old woman with rheumatoid arthritis is diagnosed as having type 1 renal tubular acidosis. Which one of the following features is most likely to be seen as a consequence?

A- Hyperkalaemia

B- Osteomalacia

C- Decreased bicarbonate reabsorption in the proximal tubule

D- Raised anion gap metabolic acidosis

**E- Nephrocalcinosis**

Q46. A 45-year-old woman with nephrotic syndrome is noted to have marked loss of subcutaneous tissue from the face. What is the most likely underlying cause of her renal disease?

**A- Membranoproliferative glomerulonephritis type II**

B- Focal segmental glomerulosclerosis

C- Minimal change glomerulonephritis

D- Renal vein thrombosis

E- Membranous glomerulonephritis

Q47. A 65-year-old man with a history of hypertension is reviewed. As part of routine blood tests to monitor his renal function whilst taking ramipril the following blood tests are received: Na+ 140 mmol/l K + 4.8 mmol/l Urea 6.2 mmol/l Creatinine 102 µmol/l eGFR 68 ml/min A urine dipstick is subsequently performed which is normal and a renal ultrasound sound shows normal sized kidneys with no abnormality detected. What stage of chronic kidney disease does this patient have?

**A- No chronic kidney disease**

B- Chronic kidney disease stage 4

C- Chronic kidney disease stage 3

D- Chronic kidney disease stage 2

E- Chronic kidney disease stage 1

Q48. Which of the following factors would suggest that a patient has established acute tubular necrosis rather than pre-renal uraemia?

A- Urine sodium = 10 mmol/L

B- Fractional urea excretion = 20%

C- Increase in urine output following fluid challenge

D- Specific gravity = 1025

**E- Fractional sodium excretion = 1.5%**

Q49. A 20-year-old man presents with facial and ankle swelling. This has slowly been developing over the past week. During the review of systems he describes passing 'frothy' urine. A urine dipstick shows protein +++. What is the most likely cause of this presentation?

**A- Minimal change disease**

B- IgA nephropathy

C- Membranoproliferative glomerulonephritis

D- Polycystic kidney disease

E- Membranous glomerulonephritis

Q50. Which one of the following is least associated with focal segmental glomerulosclerosis?

A- Alport's syndrome

B- Heroin

C- Sickle-cell anaemia

**D- Bleomycin**

E- HIV infection

Q51. Fanconi syndrome is associated with each one of the following, except:

**A- Hydronephrosis**

B- Osteomalacia

C- Aminoaciduria

D- Glycosuria

E- Proximal renal tubular acidosis

Q52. Which one of the following is least recognised as an indication for plasma exchange?

A- Guillain-Barre syndrome

B- Churg-Strauss syndrome

C- Myasthenia gravis

**D- Cerebral malaria**

E- Goodpasture's syndrome

Q53. A 26-year-old man with loin pain and haematuria is found to have autosomal dominant polycystic kidney disease. A defect in which one of the following genes is likely to be responsible?

A- Fibrillin-2 gene

B- Polycystin gene

C- Fibrillin-1 gene

D- Von Hippel-Lindau gene

**E- PKD1 gene**

Q54. A 62-year-old man is diagnosed with renal cell cancer. Which one of the following hormones is least likely to be present in excessive levels?

A- Erythropoietin

B- Parathyroid hormone

**C- Growth hormone**

D- ACTH

E- Renin

Q55. A 5-year-old boy is seen in the Emergency Department due to lethargy and pallor. There is no recent history of diarrhoea. The following results are obtained: Hb 8.4 g/dl Platelets 30 \* 109 /l Urea 24 mmol/l Creatinine 164 µmol/l Urinalysis reveals proteinuria and haematuria. What is the most appropriate management?

A- IV cyclophosphamide

B- Ciprofloxacin

C- Oral prednisolone

D- IV methylprednisolone followed by oral prednisolone

**E- Plasma exchange**

Q56. A 33-year-old man with a history of coeliac disease is admitted for investigation of recurrent macroscopic haematuria. His urine is typically brown and there is no history of passing clots. What is the most likely diagnosis?

A- Diffuse proliferative glomerulonephritis

**B- IgA nephropathy**

C- Membranous glomerulonephritis

D- Minimal change disease

E- Rapidly progressive glomerulonephritis

Q57. You are reviewing a 65-year-old in the renal clinic. He has been on haemodialysis for chronic kidney disease for the past 6 years. What is he most likely to die from?

A- Hyperkalaemia

B- Malignancy

C- Dilated cardiomyopathy

D- Dialysis related sepsis

**E- Ischaemic heart disease**

Q58. Which one of the following is not a feature of HIV-associated nephropathy?

**A- Small kidneys**

B- Normotension

C- Elevated urea and creatinine

D- Proteinuria

E- Focal segmental glomerulosclerosis on renal biopsy

Q59. A 62-year-old man attends your clinic. He has a history of hypertension and atrial fibrillation for which he is anticoagulated with warfarin. A urine dipstick taken 8 weeks ago during a routine hypertension clinic appointment showed blood +. This has been repeated on two further occasions. What is the most appropriate action?

A- Take no further action

B- Send a 24-urine sample for protein estimation

C- Renal biopsy

**D- Cystoscopy**

E- Confirm with urine microscopy

Q60. A 61-year-old man with a history of hypertension presents with central chest pain. Acute coronary syndrome is diagnosed and conventional management is given. A few days later a diagnostic coronary angiogram is performed. The following week a deteriorating of renal function is noted associated with a purpuric rash on his feet. What is the most likely diagnosis?

A- Aspirin-induced interstitial nephritis

B- Heparin-induced thrombocytopaenia

C- Renal artery stenosis

**D- Cholesterol embolisation**

E- Antiphospholipid syndrome

Q61. A 62-year-old man with a diabetic nephropathy and hypertension is reviewed. His current medication is insulin, bendroflumethiazide, ramipril and amlodipine. On examination blood pressure is 144/78 mmHg. Blood tests reveal the following: Na+ 139 mmol/l K + 4.9 mmol/l Urea 12.8 mmol/l Creatinine 215 µmol/l eGFR 29 ml/min Renal function was similar to 3 months ago. What is the most appropriate action?

A- No change to his medication

**B- Switch bendroflumethiazide to furosemide**

C- Add a beta-blocker

D- Add spironolactone

E- Stop ramipril

Q62. You review a 65-year-old man with stage 5 chronic kidney disease in the renal outpatient clinic. He has recently been started on erythropoietin injections. Which one of the following is the main benefit this treatment?

A- Reduced proteinuria

**B- Improved exercise tolerance**

C- Reduced blood pressure

D- Improved renal function

E- Reduced long-term all-cause mortality

Q63. A 71-year-old man with chronic kidney disease stage 3 is reviewed in the cardiology clinic. He is known to have hypertension and ischaemic heart disease but a recent fasting glucose result confirmed he is not diabetic. A recent early morning urine result is reported as follows: Albumin:creatinine ratio 5.2 mg/mmol What is the most appropriate action?

A- Refer to a nephrologist

**B- No action as not clinically significant**

C- Obtain a 24-hour urine collection

D- Repeat using a late-evening sample

E- Arrange renovascular imaging

Q64. Which one of the following types of glomerulonephritis is most characteristically associated with Wegener's granulomatosis?

A- Mesangiocapillary glomerulonephritis

B- Membranous glomerulonephritis

**C- Rapidly progressive glomerulonephritis**

D- Focal segmental glomerulosclerosis

E- Diffuse proliferative glomerulonephritis

Q65. A 39-year-old woman with systemic lupus erythematosus presents for review in the rheumatology clinic. Dipstick urine on arrival at clinic shows protein ++. Further investigations reveal the following Bicarbonate 22 mmol/l Urea 7.1 mmol/l Creatinine 134 µmol/l 24-hour urinary protein 2.6 g What is the renal biopsy most likely to show?

**A- Diffuse proliferative glomerulonephritis**

B- Mesangiocapillary glomerulonephritis

C- Rapidly progressive glomerulonephritis

D- Membranous glomerulonephritis

E- Minimal change disease

Q66. A two-year old boy presents with an abdominal mass. Which of the following is associated with Wilm's tumour (nephroblastoma)?

A- Deletion on short arm of chromosome 12

B- Tuberose sclerosis

**C- Beckwith-Wiedemann syndrome**

D- Autosomal dominant polycystic kidney disease

E- Autosomal recessive polycystic kidney disease

Q67. Which one of the following factors is most likely to invalidate the use of the Modification of Diet in Renal Disease (MDRD) equation to calculate a patients eGFR?

A- Diuretic use

**B- Pregnancy**

C- Type 2 diabetes mellitus

D- Blood pressure of 180/110 mmHg

E- Female gender

Q68. Each one of the following is a cause of sterile pyuria, except:

A- Renal stones

**B- Membranous glomerulonephritis**

C- Renal tuberculosis

D- Chlamydia

E- Appendicitis

Q69. A 45-year-old presents to the Emergency Department with chest pain. An ECG shows anterior ST elevation and he is thrombolysed with alteplase. His chest pain settles and he is started on aspirin, atorvastatin, bisoprolol and ramipril. Four days later his blood results are as follows: Urea 22 mmol/l Creatinine 277 µmol/l What is the most likely cause for the deterioration in renal function?

**A- Renal artery stenosis**

B- NSAID related nephropathy

C- Statin nephropathy

D- Dressler's syndrome

E- Haemorrhage into renal cyst

Q70. A 24-year-old man who has a sister with adult polycystic kidney disease (ADPKD) asks if he could be screened for the disease. What is the most appropriate screening test?

A- PKD1 gene testing

B- CT abdomen

C- Urine microscopy

**D- Ultrasound abdomen**

E- Anti-polycystin 1 antibodies levels

Q71. Alport's syndrome is due to a defect in:

A- Fibrillin-2

B- Type II collagen

C- Fibrillin-1

**D- Type IV collagen**

E- Type V collagen

Q72. What is the most likely outcome following the diagnosis of minimal change nephropathy in a 10-year-old male?

A- Chronic kidney disease requiring renal replacement therapy within 30 years

B- Full recovery and no further episodes

**C- Full recovery but with later relapses**

D- Chronic kidney disease not requiring renal replacement therapy

E- Chronic kidney disease requiring renal replacement therapy within 10 years

Q73. Which one of the following statements regarding minimal change glomerulonephritis is incorrect?

A- Has a good prognosis

B- The majority of cases are steroid responsive

C- Is a common cause of nephrotic syndrome

**D- Hypertension is found in approximately 25% of patients**

E- Haematuria is rare

Q74. A 65-year-old man presents to the Emergency Department with lethargy and leg swelling. Initial bloods show the following: Na+ 138 mmol/l K+ 5.6 mmol/l Urea 19.3 mmol/l Creatinine 299 µmol/l His renal function six months ago was normal. Which one of his regular medications is it most important to stop straight away?

**A- Ibuprofen**

B- Warfarin

C- Paracetamol

D- Diazepam

E- Atenolol

Q75. A 67-year-old with chronic kidney disease stage 4 and metastatic prostate cancer presents as his pain is not controlled with co-codamol. Which one of the following opioids is it most appropriate to use given his impaired renal function?

**A- Buprenorphine**

B- Morphine

C- Hydromorphone

D- Diamorphine

E- Tramadol

Q76. Which one of the following statements is true regarding autosomal recessive polycystic kidney disease?

A- Onset is typically in the third decade

B- Liver involvement is rare

C- Is due to a defect on chromosome 16

D- More common than autosomal dominant polycystic kidney disease

**E- May be diagnosed on prenatal ultrasound**

Q77. A 12-year-old boy is investigated for a purpuric rash on the extensor surfaces of his lower legs. He also has a history of abdominal pain and an urticarial rash. The following results are obtained: Urine dipstick: blood ++ What would be the likely finding on renal biopsy?

A- Linear IgG deposits

B- No change

C- Sclerosis within the glomerulus

**D- Mesangial hypercellularity**

E- Basement membrane thickening

Q78. You are asked to review a 75-year-old female on the surgical wards due to hyperkalaemia. Results are as follows: Plasma Urine Na+ (mmol/l) 129 5 K + (mmol/l) 6.8 Urea (mmol/l) 26 350 Creatinine (µmol/l) 262 Osmolality (mosmol/kg) 296 470 What is the most likely diagnosis?

A- Acute tubular necrosis

B- Hyperosmolar non-ketotic coma

C- Hydronephrosis

**D- Prerenal uraemia**

E- Pyelonephritis

Q79. Which of the following types of renal stones are said to have a semi-opaque appearance on x-ray?

A- Calcium oxalate

**B- Cystine stones**

C- Urate stones

D- Xanthine stones

E- Triple phosphate stones

Q80. A 65-year-old man who is known to have colorectal cancer is referred to the renal clinic. His GP performed a protein-creatinine ratio as he had been complaining of 'frothy' urine. The results suggest nephrotic range proteinuria which is confirmed on a 24-hour urinary collection. Assuming the proteinuria is related to his colorectal cancer what is the renal histology most likely to show?

A- Mesangiocapillary glomerulonephritis

B- Minimal change glomerulonephritis

C- Focal segmental glomerulosclerosis

**D- Membranous glomerulonephritis**

E- Membranoproliferative glomerulonephritis

Q81. A 65-year-old man is seen in the Emergency Department complaining of muscle weakness and lethargy. Admission bloods show the following: Na+ 138 mmol/l K + 6.3 mmol/l Bicarbonate 15 mmol/l Urea 9.2 mmol/l Creatinine 110 µmol/l What is the most appropriate initial treatment to lower the serum potassium level?

A- Intravenous bicarbonate

B- Haemodialysis

**C- Insulin/dextrose infusion**

D- Intravenous calcium gluconate

E- Oral calcium resonium

Q82. A patient develops membranoproliferative glomerulonephritis secondary to partial lipodystrophy. Which type of complement is likely to be low?

**A- C3**

B- C4

C- C2

D- C9

E- C6

Q83. A 45-year-old woman with type 1 diabetes mellitus is reviewed in the diabetes clinic. Three months ago her blood tests were as followed: K + 4.5 mmol/l Creatinine 116 µmol/l eGFR 47 ml/min At the time she was started on lisinopril to treat both the hypertension and act as a renoprotective agent. Lisinopril had been titrated up to treatment dose. Her current bloods are as follows: K + 4.9 mmol/l Creatinine 123 µmol/l eGFR 44 ml/min Of the following options, what is the most appropriate course of action?

A- Stop lisinopril and arrange investigations to exclude renal artery stenosis

B- Switch to a angiotensin 2 receptor blocker

C- Switch to a different ACE inhibitor

**D- No action**

E- Reduce dose of lisinopril

Q84. Which one of the following may be useful in the prevention of oxalate renal stones?

A- Ferrous sulphate

B- Thiazide diuretics

C- Lithium

**D- Pyridoxine**

E- Allopurinol

Q85. A 10-year-old boy is admitted to hospital with diarrhoea and lethargy. There is a known local outbreak of E coli 0157:H7 and his initial bloods show evidence of acute renal failure. Given the likely diagnosis, which one of the following investigation results would be expected?

A- Increased prothrombin time

B- Thrombocytosis

**C- Fragmented red blood cells**

D- Right-shift of the white blood cells

E- Raised serum haptoglobins

Q86. Which one of the following is not a risk factor for the development of calcium oxalate and calcium phosphate renal stones?

**A- Bendroflumethiazide**

B- Aminophylline

C- Acetazolamide

D- Furosemide

E- Prednisolone

Q87. A 34-year-old man who has injected heroin for the past 10 years is admitted to the Emergency Department. You notice on the computer that his serum creatinine has been slowly rising over recent years. His latest results show the following: Na+ 140 mmol/l K + 4.8 mmol/l Bicarbonate 26 mmol/l Urea 8.1 mmol/l Creatinine 156 µmol/l Urine dipstick Protein ++, nil else What is the most likely cause of his deteriorating renal function?

**A- Focal segmental glomerulosclerosis**

B- Amyloidosis

C- Mesangiocapillary glomerulonephritis

D- Chronic pyelonephritis

E- Renal vein thrombosis

Q88. A 43-year-old is referred to the renal clinic after presenting with peripheral oedema. He has no past medical history of note. Routine bloods ordered by his GP showed the following: Hb 14.1 g/dl Platelets 199 \* 109 /l WBC 5.6 \* 109 /l Na+ 141 mmol/l K + 4.8 mmol/l Urea 8.3 mmol/l Creatinine 143 µmol/l Bilirubin 21 µmol/l ALP 84 u/l ALT 22 u/l γGT 33 u/l Albumin 26 g/l His urinary protein is 4.2g/24 hours. On examination in the clinic he has pitting oedema of the ankles and his blood pressure is 160/92 mmHg. A renal biopsy is ordered and reported as follows: Light microscopy Mesangium: normal, with no hypercellularity. The capillary walls are thickened. Subepithelial deposits are seen. Given the likely diagnosis, which one of the following drugs is most likely to be beneficial?

**A- ACE inhibitor**

B- Ciclosporin

C- Corticosteroid

D- Aspirin

E- Cyclophosphamide

Q89. A 29-year-old man has his renal function checked. The eGFR is calculated to be 54 ml/min. Which one of the following factors is most likely to explain this unexpectedly low result?

A- Drinking a large amount of milk

B- Being dehydrated when the blood sample was taken

C- Being very tall

D- Excessive alcohol intake

**E- Large muscle mass secondary to body building**

Q90. Which one of the following is associated with a better prognosis in patients with IgA nephropathy?

A- Heavy proteinuria at presentation

B- Male gender

C- Hyperlipidaemia

**D- Frank haematuria**

E- ACE genotype DD

Q91. Autosomal dominant polycystic kidney disease type 2 is associated with a gene defect in:

**A- Chromosome 4**

B- Chromosome 8

C- Chromosome 12

D- Chromosome 16

E- Chromosome 20

Q92. Which of the following factors would suggest that a patient has pre-renal uraemia rather than established acute tubular necrosis?

A- Urine sodium = 70 mmol/L

**B- Fractional urea excretion = 20%**

C- No response to fluid challenge

D- Urine:plasma urea ratio 5:1

E- Specific gravity = 1005

Q93. A 63-year-old man is admitted with severe right sided loin pain to the Emergency Department. A urine dipstick shows blood +++, leucocytes +, protein +. An abdominal radiograph is therefore ordered which shows a stag-horn calculus in the right renal pelvis. What are stag-horn calculi normally composed of?

A- Xanthine

**B- Magnesium ammonium phosphate**

C- Calcium oxalate

D- Uric acid

E- Magnesium calcium phosphate

Q94. Which one of the following is the most common type of SLE associated renal disease? Diffuse proliferative glomerulonephritis is the most common and severe form of renal disease in SLE patients

A- Class II: mesangial glomerulonephritis

B- Class III: focal (and segmental) proliferative glomerulonephritis

**C- Class IV: diffuse proliferative glomerulonephritis**

D- Class V: diffuse membranous glomerulonephritis

E- Class VI: sclerosing glomerulonephritis

## **Chapter 11 Psychiatry**

Q1. Which one of the following symptoms may indicate mania rather than hypomania?

A- Predominately elevated mood

**B- Delusions of grandeur**

C- Increased appetite

D- Flight of ideas

E- Irritability

Q2. A 45-year-old man who takes chlorpromazine for schizophrenia presents with severe restlessness. What side-effect of antipsychotic medication is this an example of?

**A- Akathisia**

B- Neuroleptic malignant syndrome

C- Acute dystonia

D- Tardive dyskinesia

E- Parkinsonism

Q3. A 25-year-old man demands a CT scan of his abdomen in clinic. He states it is 'obvious' he has cancer despite previous negative investigations. This is an example of a:

**A- Hypochondrial disorder**

B- Conversion disorder

C- Munchausen's syndrome

D- Dissociative disorder

E- Somatisation disorder

Q4. A 34-year-old man confides in you that he experienced childhood sexual abuse. Which one of the following features is not a characteristic feature of post-traumatic stress disorder?

A- Hyperarousal

B- Emotional numbing

C- Nightmares

**D- Loss of inhibitions**

E- Avoidance

Q5. A 25-year-old man with a history of schizophrenia is prescribed olanzapine. Which one of the following adverse effects is he most likely to experience?

A- Anorexia

B- Parkinsonism

C- Hypertension

**D- Weight gain**

E- Agranulocytosis

Q6. A 39-year-old man comes for review. Six months ago he was started on paroxetine for depression. Around five days ago he stopped taking the medication as he felt that it was having no benefit. His only past medical history of note is asthma. For the past two days he has experienced increased anxiety, sweating, headache and the feeling of a needle like sensation in his head. During the consultation he is pacing around the room. What is the most explanation for his symptoms?

A- Bipolar disorder

B- Malingering

**C- Selective serotonin reuptake inhibitor discontinuation syndrome**

D- Migraine

E- Generalised anxiety disorder

Q7. You are considering prescribing a tricyclic antidepressant for a patient who has not responded to two different types of selective serotonin reuptake inhibitors. Which one of the following tricyclic antidepressants is most dangerous in overdose?

**A- Dosulepin**

B- Imipramine

C- Clomipramine

D- Nortriptyline

E- Lofepramine

Q8. A 23-year-old male presents to his GP two weeks after a road traffic accident concerned about increased anxiety levels, lethargy and headache. At the time he had a CT brain after banging his head on the steering wheel, which revealed no abnormality. Six months following this episode his symptoms have resolved. What did his original symptoms likely represent?

A- Conversion disorder

B- Post-traumatic stress disorder

C- Somatisation disorder

D- Generalised anxiety disorder

**E- Post-concussion syndrome**

Q9. An elderly patient in a nursing home is started on quetiapine due to persistent aggressive behaviour that has not responded to non-pharmacological approaches. Which of the following adverse effects do antipsychotics increase the risk of in elderly patients?

A- Atrial fibrillation

B- Myocardial infarction

C- Aspiration pneumonia

**D- Stroke**

E- Breast cancer

Q10. A 30-year-old man presents to his doctor as he has been feeling generally 'out of sorts' for the past few weeks. He is accompanied by his girlfriend who says he has 'not been himself'. She is worried and feels he may need to see a psychiatrist. There is no history of past mental health problems. Which one of the following symptoms would be most suggestive of depression?

A- Palpitations

B- Nausea before certain situations e.g. getting on a bus

**C- Early morning waking**

D- Excessive gambling

E- Flash-backs to childhood problems

Q11. A 23-year-old man asks to be referred to a plastic surgeon. From his records you can see he has been treated for anxiety and depression with fluoxetine previously and has been off work with back pain for the past three months. He is concerned that his ears are too big in proportion to his face. He reports that he now seldom leaves the house because of this. On examination his ears appear to be within normal limits. What is the most appropriate description of this behaviour?

A- Hypochondriasis

B- Generalised anxiety disorder

C- Somatisation

D- Malingering

**E- Dysmorphophobia**

Q12. A woman who gave birth 5 days ago presents for review as she is concerned about her mood. She is having difficulty sleeping and feels generally anxious and tearful. Since giving birth she has also found herself snapping at her husband. This is her first pregnancy, she is not breast feeding and there is no history of mental health disorders in the past. What is the most appropriate management?

**A- Explanation and reassurance**

B- Cognitive behavioural therapy

C- Trial of fluoxetine

D- Trial of citalopram

E- Discuss with psychiatric team to consider admission to mother and baby unit

Q13. A 18-year-old sprinter who is currently preparing for a national athletics meeting asks to see the team doctor due to an unusual sensation in his legs. He describes a numb sensation below his knee. On examination the patient there is apparent sensory loss below the right knee in a non-dermatomal distribution. The team doctor suspects a non-organic cause of his symptoms. This is an example of a:

**A- Conversion disorder**

B- Hypochondrial disorder

C- Somatisation disorder

D- Malingering

E- Munchausen's syndrome

Q14. A 23-year-old man presents as he is concerned about a number of recent episodes related to sleep. He finds when he wakes up and less often when he is falling asleep he is 'paralysed' and unable to move. This sometimes associated with what the patient describes as 'hallucinations' such as seeing another person in the room. He is becoming increasingly anxious about these recent episodes. What is the most likely diagnosis?

A- Frontal lobe epilepsy

B- Generalised anxiety disorder

**C- Sleep paralysis**

D- Night terrors

E- Acute schizophrenia

Q15. A 34-year-old man originally from West Africa is seen in January with depression. There is no past medical history of note but he is known to smoke cannabis. He has had similar episodes for the past two winters. What is the most likely diagnosis?

A- Cyclothymic disorder

B- Atypical depression

**C- Seasonal affective disorder**

D- Schizophrenia

E- Drug-induced depression

Q16. You review a patient who has been taking citalopram for the past two years to treat depression. He has felt well now for the past year and you agree a plan to stop the antidepressant. How should the citalopram be stopped?

A- Can be stopped immediately

B- Withdraw gradually over the next 3 days

C- Withdraw gradually over the next week

D- Withdraw gradually over the next 2 weeks

**E- Withdraw gradually over the next 4 weeks**

Q17. Which one of the following side-effects is more common with atypical than conventional anti-psychotics?

A- Akathisia

**B- Weight gain**

C- Galactorrhoea

D- Parkinsonism

E- Tardive dyskinesia

Q18. A 45-year-old man is admitted due to haematemesis. He drinks 120 units of alcohol a week. When is the peak incidence of seizures following alcohol withdrawal?

A- 2 hours

B- 6 hours

C- 12 hours

D- 24 hours

**E- 36 hours**

Q19. Which of the following conditions is least associated with obsessive compulsive disorder?

A- Tourette's syndrome

B- Anorexia nervosa

C- Schizophrenia

D- Depression

**E- Wilson's disease**

Q20. A 54-year-old man with a history of depression presents for review. He was started on fluoxetine eight weeks ago and is now requesting to stop his medication as he feels so well. What should be recommended regarding his treatment?

A- It should be stopped straight away

B- It should be continued for at least another 6 weeks

C- It should be continued for at least another 3 months

**D- It should be continued for at least another 6 months**

E- It should be continued for at least another 12 months

Q21. Which one of the following is not associated with a poor prognosis in schizophrenia?

**A- Acute onset**

B- Strong family history

C- Low IQ

D- Premorbid history of social withdrawal

E- Lack of obvious precipitant

Q22. A 24-year-old female is reviewed following a course of cognitive behaviour therapy for bulimia. She feels there has been no improvement in her condition and is interested in trying pharmacological treatments. Which one of the following is most suitable?

A- Low-dose citalopram

B- Low-dose fluoxetine

C- Low-dose amitriptyline

D- High-dose amitriptyline

**E- High-dose fluoxetine**

Q23. Which one of the following statements regarding anorexia nervosa is correct?

A- The BMI should be < 16.5 kg/m^2 before making the diagnosis

B- If amenorrhoea is present a hormonal disorder needs to be excluded

**C- It is the most common cause of admissions to child and adolescent psychiatric wards**

D- Around 75-80% of the patients are female

E- Has a good prognosis if treated

Q24. A 24-year-old male is admitted to the Emergency Department complaining of severe abdominal pain. On examination he is shivering and rolling around the trolley. He has previously been investigated for abdominal pain and no cause has been found. He states that unless he is given morphine for the pain he will kill himself. This is an example of:

A- Hypochondrial disorder

B- Conversion disorder

**C- Malingering**

D- Munchausen's syndrome

E- Somatisation disorder

Q25. A 14-year-old boy is brought for review. He is normally fit and well and hasn't seen a doctor for over five years. His mother has been increasingly concerned about his behaviour in the past few weeks. She describes him staying up late at night, talking quickly and being very irritable. Yesterday he told his mother he was planning to 'take-over' the school assembly and give 'constructive criticism' to his teachers in front of the other pupils. He feels many of his teachers are 'underperforming' and need to be 'retaught' their subjects by him. He admits to trying cannabis once around six months ago and has drank alcohol 'a few times' in the past year, the last time being two weeks ago. Prior to his deterioration a few weeks ago his mother describes him as a happy, well-adjusted, sociable young man. Which one of the following is the most likely diagnosis?

A- Hypomania

B- Cannabis-induced psychosis

**C- Mania**

D- Alcoholic hallucinosis

E- Asperger's syndrome

Q26. A 27-year-old woman is brought in by her husband. She has been refusing to go outside for the past 3 months, telling her husband she is afraid of catching avian flu. On exploring this further she is concerned due to the high number of migrating birds she can see in her garden. She reports that the presence of her husbands socks on the washing line in the garden alerted her to this. What is the most likely diagnosis?

A- Depression

B- Hypochondrial disorder

C- Formal thought disorder

D- Borderline personality disorder

**E- Acute paranoid schizophrenia**

Q27. A patient you are looking after is started on imipramine for depression. Which combination of side-effects is most likely to be seen in a patient taking this class of antidepressants?

A- Dry mouth + urinary frequency

B- Hypertension + sweating

C- Gastrointestinal bleeding + dyspepsia

D- Headache + myoclonus

**E- Blurred vision + dry mouth**

Q28. Which one of the following statements regarding post-partum mental health problems is NOT true?

**A- Post-natal depression is seen in around 2-3% of women**

B- Puerperal psychosis has a recurrence rate of around 20%

C- Baby-blues are seen in the majority of women

D- Post-natal depression usually develops within the first month

E- Sertraline can be used whilst mothers are breast feeding

Q29. A 65-year-old female with a history of ischaemic heart disease is noted to be depressed following a recent myocardial infarction. What would be the most appropriate antidepressant to start?

A- Paroxetine

B- Imipramine

C- Flupentixol

D- Venlafaxine

**E- Sertraline**

Q30. A 35-year-old man with a history of schizophrenia is brought to the Emergency Department by worried friends due to drowsiness. On examination he is generally rigid. A diagnosis of neuroleptic malignant syndrome is suspected. Each one of the following is a feature of neuroleptic malignant syndrome, except:

A- Renal failure

B- Pyrexia

C- Elevated creatine kinase

**D- Usually occurs after prolonged treatment**

E- Tachycardia

Q31. A 64-year-old woman presents as she is feeling down and sleeping poorly. After speaking to the patient and using a validated symptom measure you decide she has moderate depression. She has a past history of cerebrovascular disease and currently takes aspirin, ramipril and simvastatin. What is the most appropriate course of action?

A- Stop aspirin, start citalopram

B- Start venlafaxine

**C- Start citalopram + lansoprazole**

D- Stop aspirin, start clopidogrel + citalopram

E- Start citalopram

Q32. Which one of the following intervention is most likely to be beneficial in a patient with schizophrenia?

A- Counselling

B- Supportive psychotherapy

C- Social skills training

D- Adherence therapy

**E- Cognitive behavioural therapy**

Q33. A 69-year-old man is diagnosed as having Parkinson's disease. Which one of the following psychiatric problems is most likely to occur in this patient?

A- Tics

B- Psychosis

C- Mania

D- Dementia

**E- Depression**

Q34. A patient with a history of depression presents for review. Which one of the following suggests an increased risk of suicide?

A- Being 25-years-old

**B- History of arm cutting**

C- Being married

D- Female sex

E- Having a busy job

Q35. A 31-year-old woman who gave birth two weeks ago presents for review with her husband. He is worried by her mood as she now seems depressed and is interacting poorly with the baby. He describes her mood three days ago being much different, when she was talking in a rapid and incoherent fashion about the future. The mother denies any hallucinations but states that her child has been brought into a 'very bad world'. What is the most appropriate management?

A- Start fluoxetine

B- Reassurance + review by health visitor

C- Cognitive behavioural therapy

D- Start lithium

**E- Arrange urgent admission**

Q36. A 36-year-old patient presents with nausea, headaches and palpitations. He has had multiple previous admissions with such symptoms over the past 2 years, each time no organic cause was found. What kind of disorder is this likely to represent?

A- Munchausen's syndrome

B- Hypochondrial disorder

**C- Somatisation disorder**

D- Conversion disorder

E- Dissociative disorder

Q37. The risk of developing schizophrenia if one monozygotic twin is affected is approximately:

A- 10%

B- 20%

**C- 50%**

D- 75%

E- >95%

Q38. A 43-year-old man with a history of schizophrenia is taken off chlorpromazine due to troublesome parkinsonian symptoms. Which one of the following atypical antipsychotic is it least suitable for him to be commenced on as the next step?

A- Quetiapine

B- Amisulpride

C- Olanzapine

D- Risperidone

**E- Clozapine**

Q39. Which one of the following statements regarding cognitive behavioural therapy is incorrect?

A- May be useful in the management of generalised anxiety disorder

B- Can be used for patients already taking antidepressants

C- Usually consists of one to two hour sessions once per week

D- Should be completed within 6 months

**E- Patients usually get around 35-40 hours in total**

Q40. A patient reports feeling unwell after suddenly stopping paroxetine. Which one of the following symptoms is most consistent with selective serotonin reuptake inhibitor discontinuation syndrome?

A- Postural hypotension

**B- Diarrhoea**

C- Myoclonic jerks

D- Hallucinations

E- Seizures

Q41. A 42-year-old woman presents for review. Her husband reports that she has had an argument with their son which resulted in him leaving home. Since this happened she has not been able to speak. Clinical examination of her throat and chest is unremarkable. Which one of the following terms best describes this presentation?

A- Aprosodia

B- Schizophasia

C- Expressive aphasia

D- Akinetic mutism

**E- Psychogenic aphonia**

Q42. Which one of the following is least recognised as a potential adverse effect of electroconvulsive therapy?

A- Nausea

**B- Epilepsy**

C- Cardiac arrhythmias

D- Short term memory impairment

E- Headache

Q43. A 24-year-old man is brought to the Emergency Department by his brother who is concerned about his odd behaviour. Over the past two weeks he has started to tell his brother that he can hear people talking about him on the radio. He denies any auditory hallucinations. During the consultation he scores 10/10 on the mini-mental state examination. When asked to explain the meaning of the statement 'people in glass houses shouldn't throw stones' he replies 'you may break the glass'. What is this an example of?

A- Depression

B- Autistic thinking

**C- Concrete thinking**

D- Delusional disorder

E- Acute mania

Q44. A 16-year-old girl is brought for review by her father. She is talented violinist and is due to start music college in a few weeks time. Her parents are concerned she has had a stroke as she is reporting weakness on her right side. Neurological examination is inconsistent and you suspect a non-organic cause for her symptoms. Despite reassurance about the normal examination findings the girl remains unable to move her right arm. What is the most appropriate term for this behaviour?

A- Hypochondrial disorder

B- Munchausen's syndrome

C- Somatisation disorder

**D- Conversion disorder**

E- Munchausen's-by-proxy syndrome

Q45. Which one of the following selective serotonin reuptake inhibitors has the highest incidence of discontinuation symptoms?

**A- Paroxetine**

B- Citalopram

C- Escitalopram

D- Fluoxetine

E- Sertraline

Q46. You review a 55-year-old woman who has become dependant on temazepam, which was initially prescribed as a hypnotic. She is keen to end her addiction to temazepam and asks for help. Her current dose is 20mg on. What is the most appropriate strategy?

A- Switch to the equivalent zopiclone dose then slowly withdraw over the next 2 weeks

B- Switch to the equivalent diazepam dose then slowly withdraw over the next 2 weeks

C- Switch to the equivalent zopiclone dose then slowly withdraw over the next 2 months

D- Switch to the equivalent chlordiazepoxide dose then slowly withdraw over the next 2 months

**E- Switch to the equivalent diazepam dose then slowly withdraw over the next 2 months**

Q47. A 34-year-old ex-soldier with a history of post-traumatic stress disorder returns for review. He has had a course of eye movement desensitisation and reprocessing therapy which was not helpful and is reluctant to try cognitive behavioural therapy. Of the options listed, which medication may be useful in such patients?

A- Fluoxetine

B- Citalopram

**C- Mirtazapine**

D- Topiramate

E- Bupropion

Q48. Which of the following types of tricyclic antidepressant is considered the safest in overdosage?

A- Nortriptyline

B- Imipramine

C- Dosulepin

**D- Lofepramine**

E- Clomipramine

Q49. A 46-year-old man is seen by an occupation health doctor due to long-term sickness leave. He states chronic lower back pain prevents him from working but examination findings are inconsistent and the doctor suspects a non-organic cause of his symptoms. This is an example of a:

A- Conversion disorder

B- Munchausen's syndrome

**C- Malingering**

D- Hypochondrial disorder

E- Somatisation disorder

Q50. You are considering prescribing a selective serotonin reuptake inhibitor for a patient with depression. Which class of drug is most likely to interact with a selective serotonin reuptake inhibitor?

A- Beta-blocker

B- Thiazolidinediones

C- Tetracycline

D- Statin

**E- Triptan**

Q51. Which class of drug have the Medicines and Healthcare products Regulatory Agency warned may be associated with an increased risk of venous thromboembolism in elderly patients?

A- Tricyclic antidepressants

B- 5HT3 antagonists

C- Third generation cephalosporins

D- Benzodiazepines

**E- Atypical antipsychotics**

Q52. A patient presents three days after suddenly stopping diazepam after having taken it for over two years. He feels generally unwell. Which one of the following features would suggest a diagnosis other than benzodiazepine withdrawal syndrome?

**A- Hypothermia**

B- Loss of appetite

C- Tinnitus

D- Perceptual disturbances

E- Perspiration

Q53. A 29-year-old fireman presents following a recent traumatic incident where a child died in a house fire. He describes recurrent nightmares and flashbacks which have been present for the past 3 months. A diagnosis of post-traumatic stress disorder is suspected. What is the most appropriate first-line treatment?

A- Arrange a CT head to exclude an organic cause

B- Cognitive behavioural therapy or eye movement desensitisation and reprocessing therapy

C- Cognitive behavioural therapy or graded exposure therapy

D- Cognitive behavioural therapy or psychodynamic therapy

**E- Watchful waiting**

## **Chapter 12 Ophthalmology**

Q1. A 65-year-old man with a 16 year history of type 2 diabetes mellitus presents complaining of poor eye sight and blurred vision. Visual acuity measured using a Snellen chart is reduced to 6/12 in the right eye and 6/18 in the left eye. Fundoscopy reveals a number of yellow deposits in the left eye consistent with drusen formation. Similar changes but to a lesser extent are seen in the right eye. What is the most likely diagnosis?

A- Wet age-related macular degeneration

B- Pre-proliferative diabetic retinopathy

C- Chronic open angle glaucoma

D- Proliferative diabetic retinopathy

**E- Dry age-related macular degeneration**

Q2. Which one of the following is associated with the Holmes-Adie pupil?

**A- Decreased ankle reflexes**

B- Pupillary constriction

C- Ptosis in 10-20% of cases

D- An increased of developing multiple sclerosis

E- Neurosyphilis

Q3. A 71-year-old man presents with a burning sensation around his right eye. On examination an erythematous blistering rash can be seen in the right trigeminal distribution. What is the most likely diagnosis?

A- Ramsay Hunt syndrome

B- Cluster headache

C- Fungal keratitis

**D- Herpes zoster ophthalmicus**

E- Trigeminal neuralgia

Q4. Which one of the following is least associated with the development of optic atrophy?

**A- Ataxic telangiectasia**

B- Longstanding papilloedema

C- Multiple sclerosis

D- Glaucoma

E- Retinitis pigmentosa

Q5. A 34-year-old woman presents complaining of headaches. Examination of her pupils using a light shone alternately in each eye reveals that when the light is shone in the right eye both pupils constrict but when the light source immediately moves to the left eye both eyes appear to dilate. What is the most likely diagnosis?

A- Right optic neuritis

B- Left sided Horner's syndrome

C- Craniopharyngioma

**D- Left optic neuritis**

E- Right Holmes-Adie pupil

Q6. A 65-year-old man with a known history of Paget's disease is noted to have irregular dark red lines radiating from the optic nerve. What is the likely diagnosis?

A- Retinitis pigmentosa

B- Optic neuritis

**C- Angioid retinal streaks**

D- Choroidoretinitis

E- Malignant hypertension

Q7. A 64-year-old woman presents with bilateral sore eyelids. She also complains of her eyes being dry all the time. On examination her eyelid margins are erythematous at the margins but are not swollen. Of the given options, what is the most appropriate initial management?

A- Topical chloramphenicol + mechanical removal of lid debris

B- Hot compresses + topical steroids

C- Topical chloramphenicol + topical steroids

**D- Hot compresses + mechanical removal of lid debris**

E- Topical chloramphenicol + hot compresses

Q8. A 67-year-old woman presents for review. She has recently been diagnosed with dry age-related macular degeneration. Which one of the following is the strongest risk factor for developing this condition?

A- Hypertension

B- Poor diet

**C- Smoking**

D- Diabetes mellitus

E- Alcohol excess

Q9. A 34-year-old man is referred to ophthalmology following a deterioration in his vision. He is noted to be tall with thin, long fingers and a degree of learning disabilities. Following review he is suspected as having a displacement of his lens on the right side. What is the most likely underlying diagnosis?

A- Ehlers-Danlos syndrome

**B- Homocystinuria**

C- Rapadilino syndrome

D- Marfan's syndrome

E- Crouzon disease

Q10. A 62-year-old man presents with sudden visual loss in his right eye. He is otherwise asymptomatic. Which one of the following conditions is least likely to be responsible?

A- Ischaemic optic neuropathy

B- Occlusion of the central retinal vein

C- Occlusion of the central retinal artery

**D- Optic neuritis**

E- Vitreous haemorrhage

Q11. A 63-year-old man presents to his GP complaining of pain in his right eye. On examination the sclera is red and the pupil is dilated with a hazy cornea. What is the most likely diagnosis?

A- Scleritis

B- Conjunctivitis

**C- Acute angle closure glaucoma**

D- Anterior uveitis

E- Subconjunctival haemorrhage

Q12. A 74-year-old man presents to ophthalmology clinic after seeing his optician. They have noticed raised intra-ocular pressure and decreased peripheral vision. His past medical history includes asthma and type 2 diabetes mellitus. What is the most appropriate treatment given the likely diagnosis?

**A- Latanoprost**

B- Pilocarpine

C- Timolol

D- Dorzolamide

E- Brimonidine

Q13. A 54-year-old woman presents with a persistent watery left eye for the past 4 days. On examination there is erythema and swelling of the inner canthus of the left eye. What is the most likely diagnosis?

A- Blepharitis

B- Acute angle closure glaucoma

C- Meibomian cyst

**D- Dacryocystitis**

E- Pinguecula

Q14. A 71-year-old man presents with severe pain around his right eye and vomiting. On examination the right eye is red and decreased visual acuity is noted. Which one of the following options is the most appropriate initial treatment?

A- Topical pilocarpine + oral prednisolone

B- Topical pilocarpine + topical steroids

C- Topical steroids

**D- Topical pilocarpine + intravenous acetazolamide**

E- Topical steroids + intravenous acetazolamide

Q15. A 35-year-old man presents with visual problems. He has had very poor vision in the dark for a long time but is now worried as he is developing 'tunnel vision'. He states his grandfather had a similar problem and was registered blind in his 50's. What is the most likely diagnosis?

A- Leber's congenital amaurosis

B- Vitelliform macular dystrophy

C- Central serous retinopathy

D- Primary open angle glaucoma

**E- Retinitis pigmentosa**

Q16. Each one of the following is associated with retinitis pigmentosa, except:

A- Usher syndrome

B- Refsum disease

C- Kearns-Sayre syndrome

**D- Tuberous sclerosis**

E- Abetalipoproteinaemia

Q17. A 60-year-old woman who has recently started treatment for polymyalgia rheumatica presents with a five day history of headaches and reduced vision on the right side since this morning There is no eye pain but the there is a 'large, dark shadow' covering the superior visual field on the right side. On examination she has a tender, palpable right temporal artery. What is the most likely explanation for the reduced vision?

**A- Anterior ischemic optic neuropathy**

B- Central retinal vein occlusion

C- Optic neuritis

D- Ophthalmic arteritis

E- Central retinal artery occlusion

Q18. Which one of the following statements regarding macular degeneration is true?

A- Drusen are characteristic of wet macular degeneration

B- Photodynamic therapy is useful in dry macular degeneration

C- Asian ethnicity is a risk factor

D- Male sex is a risk factor

**E- Wet macular degeneration carries the worst prognosis**

Q19. Which one of the following is least associated with the development of optic atrophy?

A- Tobacco

B- Methanol

C- Vitamin B12 deficiency

D- Lead

**E- Zinc deficiency**

Q20. Which one of the following causes of Horner's syndrome is due to a central lesion?

A- Cavernous sinus thrombosis

B- Internal carotid aneurysm

**C- Syringomyelia**

D- Pancoast's tumour

E- Cervical rib

Q21. A 68-year-old man with a history of type 2 diabetes mellitus presens with worsening eye sight. Mydriatic drops are applied and fundoscopy reveals pre-proliferative diabetic retinopathy. A referral to ophthalmology is made. Later in the evening whilst driving home he develops pain in his left eye associated with decreased visual acuity. What is the most likely diagnosis?

A- Keratitis secondary to mydriatic drops

B- Proliferative diabetic retinopathy

**C- Acute angle closure glaucoma**

D- Central retinal artery occlusion

E- Vitreous haemorrhage

Q22. A 71-year-old with a history of type 2 diabetes mellitus and hypertension presents due to the sensation of light flashes in his right eye. These symptoms have been present for the past 2 days and seem to occur more at the peripheral part of vision. There is no redness or pain in the affected eye. Corrected visual acuity is measured as 6/9 in both eyes. What is the most likely diagnosis?

A- Change in shape of eye secondary to variations in blood sugar

B- Primary open angle glaucoma

**C- Vitreous detachment**

D- Normal phenomenon in diabetic retinopathy

E- Normal phenomenon in healthy eyes

Q23. A 67-year-old man presents as he has developed a painful blistering rash around his right eye. On examination a vesicular rash covering the right trigeminal nerve dermatome is seen. Currently he has no eye symptoms or signs. Which one of the following is most likely to predict future eye involvement?

**A- Presence of the rash on the tip of his nose**

B- Smoking history

C- Increasing age

D- Previous courses of corticosteroids

E- Presence of the rash in the ear canal

Q24. Each one of the following is a cause of a mydriatic pupil, except:

A- Third nerve palsy

B- Atropine

C- Holmes-Adie pupil

**D- Argyll-Robertson pupil**

E- Traumatic iridoplegia

Q25. A 45-year-old woman with Graves' disease comes for review. She has recently been diagnosed with thyroid eye disease and is being considered for radiotherapy. Over the past three days her right eye has become red and painful. On examination there is proptosis and erythema of the right eye. Visual acuity is 6/9 in both eyes. What complication is she most likely to have developed?

**A- Exposure keratopathy**

B- Optic neuropathy

C- Carbimazole-related neutropaenia

D- Central retinal vein occlusion

E- Sjogren's Syndrome

Q26. Each one of the following are associated with angioid retinal streaks, except:

A- Paget's disease

B- Pseudoxanthoma elasticum

C- Acromegaly

**D- Kearns-Sayre syndrome**

E- Ehler-Danlos syndrome

Q27. Which one of the following is not a risk factor for primary open-angle glaucoma?

A- Diabetes mellitus

B- Family history

C- Hypertension

D- Afro-Caribbean ethnicity

**E- Hypermetropia**

Q28. A 23-year-old female presents with recurrent headaches. Examination of her cranial nerves reveals the right pupil is 3 mm whilst the left pupil is 5 mm. The right pupil constricts to light but the left pupil is sluggish. What is the most likely diagnosis?

A- Horner's syndrome

B- Migraine

C- Multiple sclerosis

**D- Holmes-Adie syndrome**

E- Argyll-Roberson syndrome

Q29. A 70-year-old man is investigated for blurred vision. Fundoscopy reveals drusen, retinal epithelial and macular neovascularisation. A diagnosis of age related macular degeneration is suspected. What is the most appropriate next investigation?

A- Vitreous fluid sampling

B- MRI orbits

C- Ocular tonometry

**D- Fluorescein angiography**

E- Kinetic perimetry

Q30. During routine follow-up at renal clinic a man is noted to have corpuscular pigmentation of the left retina. Which one of the following conditions is associated with retinitis pigmentosa?

A- Autosomal dominant polycystic kidney disease

B- Tuberous sclerosis

C- Von Hippel-Lindau syndrome

**D- Alport's syndrome**

E- Medullary sponge kidney

Q31. An 84-year-old man presents with loss of vision in his left eye since the morning. He is otherwise asymptomatic and of note has had no associated eye pain or headaches. His past medical history includes ischaemic heart disease but he is otherwise well. On examination he has no vision in his left eye. The left pupil responds poorly to light but the consensual light reaction is normal. Fundoscopy reveals a red spot over a pale and opaque retina. What is the most likely diagnosis?

A- Vitreous haemorrhage

B- Retinal detachment

C- Ischaemic optic neuropathy

D- Central retinal vein occlusion

**E- Central retinal artery occlusion**

Q32. Which one of the following is least recognised as a cause of tunnel vision?

A- Papilloedema

B- Choroidoretinitis

**C- Angioid retinal streaks**

D- Glaucoma

E- Retinitis pigmentosa

Q33. A 70-year-old woman presents with loss of vision in her left eye. For the past two weeks she has painful frontal headaches and has been feeling generally lethargic. On examination visual acuity is 6/9 in the right eye but on the left side only hand movements can be made seen. Fundoscopy of the left side reveals a pale and oedematous optic disc. What is the most likely diagnosis?.

A- Acute angle closure glaucoma

B- Central retinal artery occlusion

C- Multiple sclerosis

D- Methanol poisoning

**E- Temporal arteritis**

Q34. A 52-year-old old man who has a history of alcohol excess is brought to the Emergency Department by paramedics. He is a frequent attender and this time has a laceration on his scalp following a fall. Whilst examining him he seems confused and complains of problems with his vision. Which one of the following is the most commonly found ocular abnormality in patients with Wernicke's encephalopathy?

A- Ophthalmoplegia

B- Lateral rectus palsy

**C- Nystagmus**

D- Mydriasis

E- Scotomata

Q35. Which one of the following is not a feature of background diabetic retinopathy?

A- Microaneurysms

B- Blot haemorrhages

**C- Cotton wool spots**

D- Seen in both type 1 and type 2 diabetes mellitus

E- Hard exudates

Q36. Each one of the following predisposes to cataract formation, except:

A- Down's syndrome

**B- Hypercalcaemia**

C- Diabetes mellitus

D- Long-term steroid use

E- Uveitis

Q37. A 65-year-old woman presents to the Emergency Department with visual problems. She has rheumatoid arthritis, depression and takes medication to control her blood pressure. Over the past few days she has been getting troublesome headaches and blurred vision but today has noted a marked reduction in vision in the right eye. On examination her right eye is red, has a sluggish pupil and a corrected visual acuity 6/30. Her medication has recently been changed. Which one of the following drugs is most likely to have precipitated this event?

A- Methotrexate

B- Doxazosin

**C- Amitriptyline**

D- Atenolol

E- Bendroflumethiazide

Q38. Which one of the following is associated with heterochromia in congenital disease?

A- Holmes-Adie pupil

B- Third nerve palsy

C- Sixth nerve palsy

D- Argyll-Robertson pupil

**E- Horner's syndrome**

Q39. A 64-year-old woman with type 2 diabetes mellitus presents as she has started to bump into things since the morning. Over the previous two days she had noticed some 'floating spots in her eyes'. Examination reveals she has no vision in her right eye. The red reflex on the right side is difficult to elicit and you are unable to visualise the retina on the right side during fundoscopy. Examination of the left fundus reveals changes consistent with pre-proliferative diabetic retinopathy. What is the most likely diagnosis?

A- Occlusion of central retinal vein

**B- Vitreous haemorrhage**

C- Proliferative retinopathy

D- Cataract

E- Retinal detachment

Q40. A 72-year-old woman presents with a vesicular rash around her left eye. The left eye is red and there is a degree of photophobia. A presumptive diagnosis of herpes zoster ophthalmicus is made and an urgent referral to ophthalmology is made. What treatment is she most likely to be given?

A- Oral aciclovir + topical aciclovir

B- Intravenous aciclovir + topical aciclovir

C- Oral famciclovir + topical aciclovir

D- Topical aciclovir

**E- Oral aciclovir**

Q41. An 80-year-old woman presents with 'funny spots' affecting her vision. Over the past week she has noticed a number of flashes and floaters in the visual field of the right eye. What is the most likely diagnosis?

A- Retinal detachment

**B- Posterior vitreous detachment**

C- Optic neuritis

D- Depression

E- Vitreous haemorrhage

Q42. A 71-year-old female with dry age-related macular degeneration is reviewed. Unfortunately her eyesight has deteriorated over the past six months. She has never smoked and is taking antioxidant supplements. What is the most appropriate next step?

A- Retinal transplant

B- Intravitreal ranibizumab

**C- Explain no other medical therapies currently available**

D- Photodynamic therapy

E- Photocoagulation

Q43. Which one of the following statements regarding the Holmes-Adie pupil is incorrect?

A- May be associated with absent ankle/knee reflexes

**B- Bilateral in 80% of cases**

C- It is a benign condition

D- Slowly reactive to accommodation but very poorly (if at all) to light

E- Causes a dilated pupil

Q44. Which one of the following features is not characteristic of optic neuritis?

A- Eye pain worse on movement

B- Relative afferent pupillary defect

C- Poor discrimination of colours, 'red desaturation'

**D- Sudden onset of visual loss**

E- Central scotoma

Q45. A 69-year-old man presents to the Emergency Department with blurred vision. The examining doctor suspects a diagnosis of primary open-angle glaucoma (POAG). Which one of the following features would be most consistent with a diagnosis of POAG?

A- Symptoms worse with mydriasis

B- Eye pain

C- Semi-dilated non-reacting pupil

**D- Loss of nasal visual field**

E- Red eye

Q46. A 74-year-old man presents with a severe throbbing headache on the right side of his head. He has now had this pain for around 6-7 days but reports no obvious trigger. There have been no visual disturbances or episodes of limb weakness. Neurological examination is unremarkable. The right side of his head is tender to touch but he cannot remember falling. Given the likely diagnosis what is the most important initial step?

**A- Give high-dose oral prednisolone**

B- Arrange an urgent orbital x-ray for suspected blow-out fracture

C- Arrange an urgent temporal artery biopsy

D- Arrange an urgent CT head

E- Ocular pilocarpine + intravenous acetazolamide

Q47. A 47-year-old female with a history of rheumatoid arthritis presents with a painful and red left eye. Visual acuity is normal. Fundoscopy is also unremarkable. What is the most likely diagnosis?

**A- Scleritis**

B- Episcleritis

C- Glaucoma

D- Anterior uveitis

E- Keratoconjunctivitis sicca

Q48. A 43-year-old who is noted to have a high-arched palate, arachnodactyly and a late-systolic murmur presents with visual problems. Which one of the following eye disorders is most associated with his underlying condition?

**A- Superotemporal ectopia lentis**

B- Inferonasal ectopia lentis

C- Retinitis pigmentosa

D- Acute glaucoma

E- Retinal detachment

Q49. A 40-year-old man presents with bilateral dry, gritty eyes. A diagnosis of blepharitis is considered. Which one of the following is least likely to be associated with blepharitis?

A- Meibomian gland dysfunction

B- Seborrhoeic dermatitis

C- Staphylococcal infection

D- Acne rosacea

**E- Viral upper respiratory tract infection**

Q50. Which one of the following best describes the action of latanoprost in the management of primary openangle glaucoma?

A- Carbonic anhydrase inhibitor

B- Reduces aqueous production + increases outflow

C- Opens up drainage pores

**D- Increases uveoscleral outflow**

E- Reduces aqueous production

Q51. A 25-year-old woman presents with a one-day history of a painful and red left eye. She describes how her eye is continually streaming tears. On examination she exhibits a degree of photophobia in the affected eye and application of fluorescein demonstrates a dendritic pattern of staining. Visual acuity is 6/6 in both eyes. What is the most appropriate management?

A- Topical steroid

B- Perform a lumbar puncture

C- Treat with subcutaneous sumatriptan

**D- Topical aciclovir**

E- Topical chloramphenicol

Q52. A 24-year-old man who has a family history of retinitis pigmentosa is reviewed in the ophthalmology clinic. He reports worsening vision over the past few months. During fundoscopy, which of the following findings with most support a diagnosis of retinitis pigmentosa?

A- Pigmented scrambled egg appearance concentrated around the macula

B- Central irregular pigmentation with bull's eye maculopathy

**C- Black bone spicule-shaped pigmentation in the peripheral retina**

D- Drusen with haemorrhagic atrophic changes concentrated at the periphery of the retina

E- Pigmented choroidal neovascularisation throughout the retina

Q53. A 65-year-old man with a history of primary open-angle glaucoma presents with sudden painless loss of vision in his right eye. On examination of the right eye the optic disc is swollen with multiple flame-shaped and blot haemorrhages. What is the most likely diagnosis?

A- Diabetic retinopathy

B- Vitreous haemorrhage

C- Ischaemic optic neuropathy

**D- Occlusion of central retinal vein**

E- Occlusion of central retinal artery

Q54. A 71-year-old man who has recently been diagnosed with macular degeneration asks for advice regarding antioxidant dietary supplements. Which one of the following may contraindicate the prescription of such supplements?

**A- Current smoker**

B- Pernicious anaemia

C- Treated hypertension

D- History of depression

E- Previous episodes of tendonitis

## **Chapter 13 Neurology**

Q1. A 27-year-old man presents to the Emergency Department with 2 day history of severe headache and pyrexia (38.2ºC). A CT scan is reported as follows: CT: Brain Petechial haemorrhages in the temporal and inferior frontal lobes. No mass effect. Brain parenchyma otherwise normal What is the most likely diagnosis?

A- Brain abscess

B- Meningococcal meningitis

C- Cerebral malaria

**D- Herpes simplex encephalitis**

E- New variant CJD

Q2. A 29-year-old man presents complaining of visual disturbance. Examination reveals a right superior homonymous quadrantanopia. Where is the lesion most likely to be?

A- Optic chiasm

**B- Left temporal lobe**

C- Right temporal lobe

D- Left optic nerve

E- Left parietal lobe

Q3. A 64-year-old man with a history of Parkinson's disease is reviewed in clinic and a decision has been made to start him on cabergoline. Which one of the following adverse effects is most strongly associated with this drug?

A- Optic neuritis

B- Transient rise in liver function tests

**C- Pulmonary fibrosis**

D- Renal failure

E- Thrombocytopenia

Q4. A 76-year-old man is admitted with a right hemiparesis. He first noticed weakness on his right side around six hours ago. A CT scan shows an ischaemic stroke and aspirin 300mg is commenced. terms of further management in the acute phase, which one of the following values should not be corrected?

**A- BP 210/110**

B- Blood glucose 11.2 mmol/l

C- Oxygen saturation 93%

D- Temp 38.3ºC

E- Blood glucose 3.5 mmol/l

Q5. A 23-year-old man is referred to neurology clinic. He describes episodes of leg weakness following bouts of laughing whilst out with friends. The following weekend his friends described a brief collapse following a similar episode. What is the most likely diagnosis?

A- Stokes-Adams attack

**B- Cataplexy**

C- Hypokalaemic periodic paralysis

D- Absence seizure

E- Myasthenia gravis

Q6. A 44-year-old woman presents with pain in her right hand and forearm which has been getting worse for the past few weeks. There is no history of trauma. The pain is concentrated around the thumb and index finger and is often worse at night. Shaking her hand seems to provide some relief. On examination there is weakness of the abductor pollicis brevis and reduced sensation to fine touch at the index finger. What is the most likely diagnosis?

A- C6 entrapment neuropathy

B- Thoracic outlet syndrome

**C- Carpal tunnel syndrome**

D- Cervical rib

E- Pancoast's tumour

Q7. You are called to the obstetric ward to see a woman who is fitting. She is 34-weeks pregnant and currently an inpatient for the treatment of severe pre-eclampsia. The anaesthetist has secured the airway and is giving 100% oxygen. What is the most appropriate next step?

A- IV calcium gluconate

B- IV labetalol

C- IV methyldopa

D- IV lorazepam

**E- IV magnesium sulphate**

Q8. A 56-year-old woman presents with facial asymmetry. Whilst brushing her teeth this morning she noted that the right hand corner of her mouth was drooping. She is generally well but noted some pain behind her right ear yesterday and says her right eye is becoming dry. On examination she has a complete paralysis of the facial nerve on the right side, extending from the forehead to the mouth. Ear, nose and throat examination is normal. Clinical examination of the peripheral nervous system is normal. What is the most likely diagnosis?

A- Ramsey-Hunt syndrome

**B- Bell's palsy**

C- Stroke

D- Multiple sclerosis

E- Parotid tumour

Q9. A 29-year-old woman with a past history of hypothyroidism presents to the surgery complaining of weakness, particularly of her arms, for the past four months. She has also developed double vision towards the end of the day, despite having a recent normal examination at the opticians. What is the most likely diagnosis?

A- Chronic fatigue syndrome

B- Polymyositis

C- Polymyalgia rheumatica

D- Multiple sclerosis

**E- Myasthenia gravis**

Q10. Which one of the following statements regarding the development of a headache following lumbar puncture is incorrect?

A- Occurs in one-third of patients

B- May last several days

C- More common in females

**D- Usually develops within the first 12 hours**

E- Worsens with upright position

Q11. A 34-year-old female presents with vomiting preceded by an occipital headache of acute onset. On examination she was conscious and alert with photophobia but no neck stiffness. CT brain is reported as normal. What is the most appropriate further management?

A- CT brain with contrast

B- Repeat CT brain in 24h

**C- CSF examination**

D- Cerebral angiography

E- MRI brain

Q12. In patients with Guillain-Barre syndrome, respiratory function should be monitored with:

A- Oxygen saturations

B- PEFR

C- Flow volume loop

D- Arterial blood gases

**E- Forced vital capacity**

Q13. A 73-year-old female with a history of recurrent falls at home and alcohol excess is brought to the Emergency Department due to episodes of confusion over the past 5 days. Between these episodes she is apparently her normal self. On examination her GCS is 14/15 and she has nystagmus on left lateral gaze. What is the most likely diagnosis?

**A- Subdural haemorrhage**

B- Subarachnoid haemorrhage

C- Meningitis

D- Herpes simplex encephalitis

E- Alzheimer's disease

Q14. A 47-year-old man with a known history of schizophrenia is admitted to the Emergency Department due to confusion. A bottle of procyclidine tablets are found in his pocket. On examination the temperature is 38.1ºC with a blood pressure of 155/100 mmHg. Neurological examination reveals a GCS of 13/15 but assessment of his peripheral nervous system is difficult due to generalised increased muscle tone. What is the most likely diagnosis?

**A- Neuroleptic malignant syndrome**

B- Procyclidine overdose

C- Catatonic schizophrenia

D- Clozapine induced agranulocytosis

E- Quetiapine induced rhabdomyolysis

Q15. You review a 25-year-old man who is complaining of leg weakness. Other than a bout of diarrhoea three weeks ago he has been feeling fit and well and has no significant medical history. On examination you note reduced power in his legs, normal sensation and reduced knee and ankle reflexes. His pulse is 78/min and blood pressure is 122/84 mmHg (standing), 100/64 mmHg (sitting). What is the most likely diagnosis?

A- Botulism food poisoning

**B- Guillain-Barre syndrome**

C- Cauda equina syndrome

D- Myasthenia gravis

E- Transverse myelitis

Q16. A 27-year-old man presents with a history of fits consistent with tonic-clonic seizures. What is the most suitable first-line treatment?

A- Gabapentin

B- Lamotrigine

**C- Sodium valproate**

D- Carbamazepine

E- Phenytoin

Q17. Which of the following features is least likely to be found in a patient with tuberous sclerosis?

A- Adenoma sebaceum

B- Cafe-au-lait spots

C- Retinal hamartomas

D- 'Ash-leaf' spots

**E- Lisch nodules**

Q18. Which of the following visual field changes would be most consistent with a left parietal lobe lesion?

A- Right homonymous hemianopia

B- Left inferior homonymous quadrantanopia

C- Left superior homonymous quadrantanopia

D- Right superior homonymous quadrantanopia

**E- Right inferior homonymous quadrantanopia**

Q19. A 52-year-old man is prescribed apomorphine. What type of receptors does apomorphine act on?

A- Opioid receptors

B- GABA receptors

C- Cholinergic receptors

**D- Dopamine receptors**

E- Muscarinic receptors

Q20. An obese 24-year-old female presents with headaches and blurred vision. Examination reveals bilateral blurring of the optic discs but is otherwise unremarkable with no other neurological signs. Blood pressure is 130/74 and she is apyrexial. What is the most likely underlying diagnosis?

A- Multiple sclerosis

B- Meningococcal meningitis

C- Brain abscess

D- Normal pressure hydrocephalus

**E- Idiopathic intracranial hypertension**

Q21. A 60-year-old woman presents with a tremor. Which one of the following features would suggest a diagnosis of essential tremor rather than Parkinson's disease?

A- Difficulty in initiating movement

B- Tremor is worse following alcohol

C- Postural instability

D- Unilateral symptoms

**E- Tremor is worse when the arms are outstretched**

Q22. A 24-year-old female presents with a headache. She has a past history of epilepsy and is known to suffer from migraines, but has previously managed attacks with a combination of paracetamol and metoclopramide. This combination is however not working for the current episode. What second line medication is it most appropriate to use?

A- Codeine + paracetamol

B- Pizotifen

**C- Zolmitriptan + paracetamol**

D- Methysergide

E- Ergotamine

Q23. A 45-year-old man presents with dizziness and right-sided hearing loss. Which one of the following tests would most likely indicate an acoustic neuroma?

A- Jerky nystagmus

B- Left homonymous hemianopia

C- Tongue deviated to the left

D- Fasciculation of the tongue

**E- Absent corneal reflex**

Q24. A 57-year-old woman presents with an 8 week history of intermittent dizziness. These episodes typically occur when she suddenly moves her head and are characterised by the sensation that the room is 'spinning'. Most attacks last around one minute before dissipating. Neurological examination is unremarkable. What is the most likely diagnosis?

**A- Benign paroxysmal positional vertigo**

B- Meniere disease

C- Crescendo transient ischaemic attacks

D- Multiple sclerosis

E- Viral labyrinthitis

Q25. Which one of the following is least associated with normal pressure hydrocephalus?

**A- Papilloedema**

B- Dementia

C- Urinary incontinence

D- Gait abnormality

E- Enlarged fourth ventricle

Q26. A 33-year-old man presents complaining of visual disturbance. Examination reveals a bitemporal hemianopia with predominately the upper quadrants being affected. What is the most likely lesion?

A- Craniopharyngioma

B- Brainstem lesion

**C- Pituitary macroadenoma**

D- Frontal lobe lesion

E- Right occipital lesion

Q27. A 28-year-old man develops nausea and a severe headache whilst trekking in Nepal. Within the next hour he becomes ataxic and confused. A diagnosis of high altitude cerebral oedema is suspected. Other than descent and oxygen, what is the most important treatment?

A- Acetazolamide

**B- Dexamethasone**

C- Burr hole

D- Mannitol

E- Frusemide

Q28. A patient is referred due to the development of a third nerve palsy associated with a headache. On examination meningism is present. Which one of the following diagnoses needs to be urgently excluded?

A- Weber's syndrome

B- Internal carotid artery aneurysm

C- Multiple sclerosis

**D- Posterior communicating artery aneurysm**

E- Anterior communicating artery aneurysm

Q29. Which one of the following features is most associated with frontal lobe lesions?

A- Wernicke's aphasia

B- Gerstmann's syndrome

**C- Perseveration**

D- Cortical blindness

E- Superior homonymous quadrantanopia

Q30. A 21-year-old female is seen in the first seizure clinic in the outpatient department. Both the EEG and MRI brain are normal. A decision is made not to start her on anti-epileptic medication. What restrictions on driving should she be informed about?

A- No restrictions but inform DVLA

B- No restrictions, no need to inform DVLA if not on medication

C- Cannot drive for 1 month from date of seizure

**D- Cannot drive for 6 months from date of seizure**

E- Cannot drive for 1 year from date of seizure

Q31. A 75-year-old female presents with weakness of her left hand. On examination wasting of the hypothenar eminence is seen and there is weakness of finger abduction. Thumb adduction is also weak. Where is the lesion most likely to be?

A- C7

B- Median nerve

C- Radial nerve

D- Anterior interosseous nerve

**E- Ulnar nerve**

Q32. Which type of motor neuron disease carries the worst prognosis?

A- Relapsing-remitting

**B- Progressive bulbar palsy**

C- Progressive muscular atrophy

D- Spinocerebellar ataxia

E- Amyotrophic lateral sclerosis

Q33. A 65-year-old man is referred to the neurology outpatient clinic due to a resting tremor of his right hand. A diagnosis of Parkinson's disease is made. He is otherwise well and is not currently disabled by his symptoms. What is the most appropriate treatment?

A- Selegiline

**B- No treatment**

C- New generation dopamine receptor agonist e.g. ropinirole

D- Conventional dopamine receptor agonist e.g. bromocriptine

E- Antimuscarinics

Q34. Which one of the following features is most associated with temporal lobe lesions?

A- Astereognosis

**B- Auditory agnosia**

C- Visual agnosia

D- Disinhibition

E- Expressive (Broca's) aphasia

Q35. Each of the following features are seen in myotonic dystrophy, except:

A- Mild mental impairment

**B- Round face**

C- Frontal balding

D- Myotonia

E- Cataracts

Q36. A 25-year-old female with a history of bilateral vitreous haemorrhage is referred due to progressive ataxia. What is the likely diagnosis?

A- Neurofibromatosis type I

B- Neurofibromatosis type II

C- Tuberose sclerosis

**D- Von Hippel-Lindau syndrome**

E- Sarcoidosis

Q37. A 78-year-old man is seen in the Memory clinic. His daughter reports that for the past 12 months he has become increasingly forgetful and has now started to wander around at night. A mini-mental test is performed and he scores 18 out of 30. Neurological examination is unremarkable. A full blood screen is also requested, all of which comes back as normal. What is the most appropriate next step?

**A- Arrange a MRI head**

B- Perform carotid Dopplers

C- Give practical advice + advise family to contact Alzheimer's Society

D- Prescribe aspirin + simvastatin

E- Prescribe donepezil

Q38. You want to prescribe an antiemetic to a 19-year-old female who is having a migraine attack. Which one of the following medications is most likely to precipitate extrapyramidal side-effects?

A- Meptazinol

B- Ondansetron

C- Domperidone

D- Cyclizine

**E- Metoclopramide**

Q39. A 55-year-old man presents due to an uncontrollable urge to move his legs during the night-time. He has also experience the sensation of spiders crawling over his legs. Simple measures such as walking and massaging the affected limb have not alleviated the problem. What is the most appropriate medical therapy?

A- Selective serotonin reuptake inhibitor

B- Low-dose tricyclic antidepressant

**C- Dopamine agonist**

D- 5-HT3 antagonist

E- Dopamine antagonist

Q40. A 34-year-old man is reviewed in the neurology clinic. He has been established on sodium valproate for primary generalised epilepsy. Despite now taking a therapeutic dose he continues to have seizures and is troubled by weight gain since starting sodium valproate. He asks to stop his current medication and try a different drug. Which one of the following drugs would be the most appropriate second-line treatment?

**A- Lamotrigine**

B- Ethosuximide

C- Pregabalin

D- Gabapentin

E- Tiagabine

Q41. A 69-year-old man who is known to have Alzheimer's disease is reviewed in clinic. His latest Mini Mental State Examination (MMSE) score is 18 out of 30. What is the most appropriate management?

A- Supportive care + memantine

B- Supportive care + trial of citalopram

C- Supportive care

D- Supportive care + donepezil + low-dose aspirin

**E- Supportive care + donepezil**

Q42. A 76-year-old man is reviewed in the Elderly Medicine clinic. He is concerned about his increasing forgetfulness over the past six months. His daughter notes he has generally 'slowed down' and struggles to follow conversations. Over the past month he has noted increasingly frequent episodes of urinary incontinence. He has also had one episode of faecal incontinence in the past week. On examination he is noted to have brisk reflexes and a short, shuffling gait. No cerebellar signs are noted. What is the most likely diagnosis?

A- Multiple system atrophy

B- Parkinson's disease

**C- Normal pressure hydrocephalus**

D- Urinary tract infection

E- Pick's disease

Q43. A 55-year-old man is diagnosed with amyotrophic lateral sclerosis. Which one of the following drugs has been shown to confer a survival benefit?

A- Rituximab

**B- Riluzole**

C- Interferon-beta

D- Cyclophosphamide

E- Interferon-alpha

Q44. Which one of the following is least associated with the development of chorea?

**A- Haemochromatosis**

B- Ataxic telangiectasia

C- Carbon monoxide poisoning

D- SLE

E- Huntington's disease

Q45. A 33-year-old female with multiple sclerosis complains that her vision becomes blurred during a hot bath. What is this an example of?

**A- Uhthoff's phenomenon**

B- Oppenheim's sign

C- Werdnig-Hoffman's sign

D- Lambert's sign

E- Lhermitte's sign

Q46. A 25-year-old female is found to have a left hemiparesis following a deep vein thrombosis. An ECG shows RBBB with right axis deviation. What is the most likely underlying diagnosis?

A- Ventricular septal defect

B- Patent ductus arteriosus

C- Ostium primum atrial septal defect

**D- Ostium secundum atrial septal defect**

E- Tetralogy of Fallot

Q47. You are reviewing a 22-year-old man who has developed headaches. Which one of the following features is most typical of migraines?

A- Pain on neck flexion

**B- Phonophobia**

C- Epiphora

D- Recent viral illness

E- Bilateral, 'tight-band' like pain

Q48. Which one of the following features is not associated with an oculomotor nerve palsy?

**A- Miosis**

B- Ptosis

C- Eye is deviated 'down and out'

D- Pain if due to a posterior communicating artery aneurysm

E- Diplopia

Q49. A 12-year-old boy is brought to the Emergency Department. He was hit on the side the head by a cricket ball during a match. His teacher describes him initially collapsing to the ground and complaining of a sore head. After two minutes he got up, said he felt OK and continued playing. After 30 minutes he suddenly collapsed to the ground and lost consciousness. What type of injury is he most likely to have sustained?

A- Cerebral contusion

B- Subarachnoid haemorrhage

C- Intraventricular haemorrhage

**D- Extradural haematoma**

E- Subdural haematoma

Q50. A 45-year-old man presents to the Emergency Department following the sudden onset of pain in the right side of his face whilst hammering a nail into the wall. The pain is described as severe and constant. On examination he has a mild right ptosis and small right pupil. What is the most likely diagnosis?

A- Trigeminal neuralgia

B- Glaucoma

**C- Carotid artery dissection**

D- Syringomyelia

E- Migraine

Q51. Neurofibromatosis type 1 is associated with a gene defect on which chromosome?

A- Chromosome 4

B- Chromosome 11

C- Chromosome 16

**D- Chromosome 17**

E- Chromosome 22

Q52. A 41-year-old man presents with a two week history of headaches around the left side of his face associated with watery eyes. He describes having about two episodes a day each lasting around 30 minutes. On examination he has a red left eye and a partial left ptosis. There is no past medical history of note other than migraines as a child. What is the likely diagnosis?

A- Atypical migraine

**B- Cluster headache**

C- Trigeminal neuralgia

D- Acute angle closure glaucoma

E- Cavernous sinus thrombosis

Q53. A 55-year-old man is referred to the neurology clinic due to a resting tremor and an abnormal gait characterised by short, shuffling steps. Which one of the following features would point towards a diagnosis of Parkinson's disease rather than parkinsonism of another cause?

**A- Asymmetrical tremor**

B- Bradykinesia

C- Impairment of vertical gaze

D- Confusion

E- Poor response to levodopa therapy

Q54. A 40-year-old woman presents with recurrent episode of vertigo associated with a feeling or 'fullness' and 'pressure' in her ears. She thinks her hearing is worse during the attacks. Clinical examination is unremarkable. What is the most likely diagnosis?

**A- Meniere's disease**

B- Benign paroxysmal positional vertigo

C- Acoustic neuroma

D- Cholesteatoma

E- Somatisation

Q55. A 64-year-old man presents with a eight-month history of generalised weakness. On examination he has fasciculation and weakness in both arms with absent reflexes. Examination of the lower limbs reveal increased tone and exaggerated reflexes. Sensation was normal and there were no cerebellar signs. What is the most likely diagnosis?

A- Progressive muscular atrophy

**B- Amyotrophic lateral sclerosis**

C- Vitamin B12 deficiency

D- Syringomyelia

E- Multiple sclerosis

Q56. A 72-year-old woman with a past history of treated hypertension presents to the Emergency Department. Yesterday she had a 2 hour episode where she couldn't find the right word when speaking. This has never happened before and there were no associated features. Neurological examination is unremarkable and blood pressure was 150/100 mmHg. Her only current medication is amlodipine. What is the most appropriate management?

A- Aspirin 300mg immediately + specialist review within 2 weeks

B- Specialist review within 2 weeks

**C- Aspirin 300mg immediately + specialist review within 24 hours**

D- Aspirin 75mg + outpatient CT brain

E- Specialist review within 24 hours

Q57. Which one of the following drugs is used in the management of multiple sclerosis?

**A- Beta-interferon**

B- Gamma-interferon

C- Infliximab

D- Rituximab

E- Alpha-interferon

Q58. A 34-year-old man from West Africa is admitted due to confusion associated with left-sided weakness and ataxia. He is known to be HIV positive but is not on anti-retroviral treatment. The following results are obtained: CD4 43 u/l CT head Low attenuation diffusely. No mass effect or enhancement What is the most likely diagnosis?

A- Toxoplasmosis

B- Tuberculosis

**C- Progressive multifocal leukoencephalopathy**

D- Cryptococcus

E- Cerebral lymphoma

Q59. Which one of the following is least characteristic of Wernicke's encephalopathy?

A- Ataxia

B- Confusion

C- Ophthalmoplegia

**D- Confabulation**

E- Nystagmus

Q60. A 19-year-old female presents complaining of visual disturbance. Examination reveals a bitemporal hemianopia with predominately the lower quadrants being affected. What is the most likely lesion?

A- Brainstem lesion

**B- Craniopharyngioma**

C- Frontal lobe lesion

D- Pituitary macroadenoma

E- Right occipital lesion

Q61. An 80-year-old man is investigated for progressive cognitive impairment. Which one of the following features is most suggestive of Lewy body dementia?

A- Disinhibition

B- Emotional lability

**C- Symptoms worsen with neuroleptics**

D- Urinary incontinence

E- Paucity of extrapyramidal signs

Q62. A 54-year-old man with small cell lung cancer complains of muscle weakness. Each one of the following are features of Lambert-Eaton syndrome, except:

A- Proximal muscles more commonly affected

B- Hyporeflexia

C- Dry mouth

**D- Repeated muscle contractions lead to decreased muscle strength**

E- Impotence

Q63. A 54-year-old man is admitted to the Emergency Department with a left hemiplegia. His symptoms started around 5 hours ago and he has had no headache, visual disturbance or loss of consciousness. On examination a dense left hemiplegia is noted. Blood pressure is 120/78 mmHg, GCS is 15/15 and pupils are equal and reactive to light. An urgent CT scan is performed shortly after his arrival. This demonstrates no abnormality. What is the most appropriate initial management?

A- Enoxaparin

B- Alteplase

C- Dexamethasone

D- Warfarin

**E- Aspirin**

Q64. A 54-year-old man presents concerned about leg weakness. On examination he is noted to have increased tone in both legs, brisk reflexes and weakness in both lower limbs. Examination of his upper limbs is normal. Which one of the following is least likely to produce these symptoms?

A- HIV

**B- Amyloidosis**

C- Hereditary spastic paraplegia

D- Multiple sclerosis

E- Parasagittal meningioma

Q65. Which one of the following is most likely to cause a bilateral facial nerve palsy?

A- Acoustic neuroma

B- Cholesteatoma

C- Bell's palsy

**D- Sarcoidosis**

E- Amyloidosis

Q66. A 63-year-old man is prescribed ropinirole for Parkinson's disease. What is the mechanism of action?

A- MAO-B inhibitor

B- Antimuscarinic

**C- Dopamine receptor agonist**

D- Dopamine receptor antagonist

E- Decarboxylase inhibitor

Q67. A 59-year-old man with no significant past medical history is admitted to hospital following an ischaemic stroke. He presented outside of the thrombolysis window and is treated with aspirin for the first few days. His blood pressure is 130/80 mmHg, fasting glucose is 5.6 mmol/l and fasting cholesterol is 3.9 mmol/l. He makes a good recovery and has regained nearly all of his previous functions upon discharge. Following recent NICE guidelines, which of the following medications should he be taking upon discharge (i.e. after 14 days)?

A- Aspirin + statin

B- Aspirin + dipyridamole + statin + ramipril

**C- Clopidogrel + statin**

D- Aspirin + dipyridamole

E- Aspirin + dipyridamole + statin

Q68. Which one of the following infections is most strongly associated with the development of Guillain-Barre syndrome

A- Shigella

B- Salmonella

C- E- coli H7:0157

D- Herpes simplex

**E- Campylobacter jejuni**

Q69. Lateral medullary syndrome is caused by occlusion of which one of the following blood vessels?

A- Anterior inferior cerebellar artery

B- Posterior cerebral artery

C- Lateral sinus thrombosis

D- Middle cerebral artery

**E- Posterior inferior cerebellar artery**

Q70. A 29-year-old female presents complaining of weakness in her arms, leading to increasing difficulties at work. On examination she has a bilateral ptosis and loss of the red-reflex in both eyes. Urine testing also reveals glycosuria. What is the most likely diagnosis?

**A- Myotonic dystrophy**

B- Homocystinuria

C- Multiple sclerosis

D- Myasthenia gravis

E- HIV

Q71. A 56-year-old man presents to the Emergency Department after developing trouble talking after waking up this morning. The symptoms are consistent with expressive dysphasia and lasted about 90 minutes before resolving completely. Neurological examination is unremarkable. A diagnosis of transient ischaemic attack (TIA) is made. His past medical history includes ischaemic heart disease for which he is prescribed aspirin, simvastatin and atenolol. Which one of the following factors is most associated with an increased risk of going on to have a stroke?

A- History of ischaemic heart disease

B- History of aspirin use

**C- Duration of this TIA**

D- Expressive dysphasia during this TIA

E- His age

Q72. A 14-year-old male is noted to have optic atrophy on fundoscopy. Neurological exam reveals dysarthric speech and nystagmus. Knee and ankle jerks are absent but there is an extensor plantar response. What is the likely diagnosis?

A- Leber's optic atrophy

B- Ataxic telangiectasia

**C- Friedreich's ataxia**

D- Subacute combined degeneration of the cord

E- Multiple sclerosis

Q73. A 46-year-old female presents with a burning sensation over the antero-lateral aspect of her right thigh. A diagnosis of meralgia paraesthetica is suspected. Which nerve is most likely to be affected?

A- Common peroneal nerve

B- Anterior cutaneous nerve of thigh

C- Posterior cutaneous nerve of thigh

**D- Lateral cutaneous nerve of thigh**

E- Sciatic nerve

Q74. A 72-year-old man who is being treated for Parkinson's disease is reviewed. Which one of the following features should prompt you to consider an alternative diagnosis?

A- Micrographia

B- Impaired olfaction

C- REM sleep behaviour disorder

**D- Diplopia**

E- Psychosis

Q75. A 52-year-old woman presents with a two week history of dizziness when she rolls over in bed. She says it feels like the room is spinning around her. Examination of her ears and cranial nerves is unremarkable. Given the likely diagnosis of benign paroxysmal positional vertigo what is the most appropriate management?

A- Trial of prochlorperazine

B- Request MRI brain

C- Advise review by an optician

**D- Perform Epley manoeuvre**

E- Trial of cinnarizine

Q76. A 62-year-old man is referred to the neurology clinic with worsening symptoms over the past few months. The neurologist suspects the patient has progressive supranuclear palsy. Which one of the following features is least likely to be seen in this patient?

A- Poor response to L-dopa

**B- Impairment of horizontal gaze**

C- Falls

D- Cognitive impairment

E- Slurring of speech

Q77. A 56-year-old woman comes for review. Around 4 weeks ago she had a blistering rash under her right breast which extended around to the back. A diagnosis of shingles was made. Unfortunately since that time she has been experiencing severe 'shooting' pains. The skin is also very tender to touch. Neither paracetamol nor ibuprofen have helped her symptoms. What is the most appropriate next step in management?

A- Lidocaine patch

B- Tramadol

**C- Amitriptyline**

D- Carbamazepine

E- Diclofenac

Q78. A patient is noted to have absent ankle jerks combined with extensor plantars on examination. Which one of the following is least likely?

**A- Multiple sclerosis**

B- Subacute combined degeneration of the cord

C- Syringomyelia

D- Syphilis

E- Motor neuron disease

Q79. A 42-year-old woman presents as she has noticed a 'droop' in the right side of her face since she woke up this morning. There is no associated limb weakness, dysphagia or visual disturbance. On examination you notice right-sided upper and lower facial paralysis. Which one of the following features would be most consistent with a diagnosis of Bell's palsy?

A- Vesicular rash around the ear

**B- Hyperacusis**

C- Sensory loss over the distribution of the facial nerve

D- Pins and needles in the right arm

E- Rhinorrhoea

Q80. A 47-year-old man presents to the Emergency Department with a three day history of severe headache associated with vomiting. There is no past medical history of note. On examination blood pressure is 98/62 mmHg, pulse is 108 bpm and temperature is 37.0ºC. There is mild neck stiffness and a partial third nerve palsy of the left eye. Blood rests reveal: Hb 14.8 g/dl Plt 373 \* 109 /l WBC 13.6 \* 109 /l Na+ 132 mmol/l K + 5.2 mmol/l Urea 4.2 mmol/l Creatinine 99 µmol/l Free T4 9 pmol/l (range 10-22) What is the most likely diagnosis?

A- Subarachnoid haemorrhage

B- Cavernous sinus thrombosis

C- Meningitis

**D- Pituitary apoplexy**

E- Lateral sinus thrombosis

Q81. Which one of the following is a contraindication to the use of a triptan in the management of migraine?

A- Concurrent pizotifen use

B- Patients older than 55 years

C- A history of epilepsy

D- Previous intracranial tumour

**E- A history of ischaemic heart disease**

Q82. A 24-year-old man is seen in the 'First Seizure' clinic. He has been referred by the local the Emergency Department following a single episode of a witnessed seizure. Which one of the following factors would be least relevant when deciding whether to start anti-epileptic drugs after a single seizure?

A- Brain imaging shows a structural abnormality

B- The patient has a neurological deficit

C- The EEG shows unequivocal epileptic activity

**D- The patient is less than 45 years old**

E- The patient considers the risk of having a further seizure unacceptable

Q83. A 23-year-old man is admitted following the sudden onset of an occipital headache. On examination GCS is 15/15, neurological examination is unremarkable but neck stiffness is noted. A subarachnoid haemorrhage is suspected but the CT scan is normal. At what time should a lumbar puncture be done to exclude the diagnosis?

A- Immediately

B- 2 hours post-headache

C- 4 hours post-headache

**D- 12 hours post-headache**

E- 24 hours post-headache

Q84. Which one of the following causes of peripheral neuropathy is most associated with demyelination?

A- Vasculitis

B- Alcohol

**C- Hereditary sensorimotor neuropathies (HSMN) type I**

D- Vitamin B12 deficiency

E- Diabetes mellitus

Q85. A 19-year-old man is admitted following a generalised seizure. No past history is available as the man is currently in a postictal state. On examination it is noted that he has three patches of hypopigmented skin and fibromata under two of his finger nails. What is the most likely diagnosis?

A- Neurofibromatosis

B- Lennox-Gastaut Syndrome

C- Multiple endocrine neoplasia type 1

D- Birt-Hogg-Dube syndrome

**E- Tuberous sclerosis**

Q86. A 45-year-old woman presents complaining of visual disturbance. Examination reveals a left congruous homonymous hemianopia. Where is the lesion most likely to be?

A- Optic chiasm

B- Left occipital cortex

C- Right optic tract

**D- Right occipital cortex**

E- Left optic tract

Q87. A 5-year-old boy is diagnosed as having absence seizures. What is the chance he will be seizure free by the age of 16-years-old?

A- 5-10%

B- 20-25%

C- 40-45%

D- 65-70%

**E- 90-95%**

Q88. A 67-year-old man is reviewed in the neurology clinic due to concerns about increasing clumsiness. Examination reveals an ataxic gait and increased upper limb tone with cog-wheel rigidity. Blood pressure is 135/80 lying and 95/70 standing. What is the most likely diagnosis?

A- Motor neuron disease

B- Progressive supranuclear palsy

C- Parkinson's disease

D- Multiple sclerosis

**E- Multiple system atrophy**

Q89. A 66-year-old woman is investigated for ascites and found to have ovarian cancer. She presents due to 'unsteadiness'. On examination there is evidence of nystagmus and past-pointing. Which one of the following antibodies is most likely to be present?

A- Anti-Hu

**B- Anti-Yo**

C- Anti-Ri

D- Anti-Ro

E- Anti-La

Q90. Which one of the following is least recognised as a cause of autonomic neuropathy

A- Guillain-Barre syndrome

**B- New variant CJD**

C- Diabetes

D- Parkinson's

E- HIV

Q91. A 29-year-old female presents complaining of double vision and unsteadiness. She has no past medical history of note. On examination she has limited movement of her eyes in all directions. Pupils are 3 mm, equal and reactive to light. Examination of the peripheral nervous system is normal other than reduced reflexes and the plantars are down going. Some past-pointing is also noted. What is the most likely diagnosis?

A- Multiple sclerosis

B- Conversion disorder

**C- Miller Fisher syndrome**

D- Ataxic telangiectasia

E- Friedreich's ataxia

Q92. In the treatment of migraine, sumatriptan is an example of a:

A- Beta-blocker

B- Alpha-blocker and a partial 5-HT2 agonist

**C- Specific 5-HT1 agonist**

D- 5-HT2 antagonist

E- Tricyclic antidepressant

Q93. A 34-year-old female is reviewed in the neurology clinic due to a number of 'funny-dos'. She describes a sensation that her surroundings are unreal, 'like a dream'. Following this she has been told that she starts to smack her lips, although she has no recollection of doing this. What is the most likely diagnosis?

A- Myoclonic seizure

B- Simple partial seizure

**C- Complex partial seizure**

D- Partial seizure progressing to generalised seizure

E- Absence seizure

Q94. A 25-year-old female presents 5 days after discharge from hospital following an admission for suspected meningitis. A lumbar puncture was performed which showed no evidence of infection. Unfortunately she developed a headache 48 hours after discharge. This has now lasted 3 days and has failed to settle with analgesia. Which one of the following treatment options should be considered?

A- Intrathecal steroids

B- Repeat lumbar puncture

C- Course of oral prednisolone

**D- Blood patch**

E- Intravenous fluids on top of oral fluid intake

Q95. A 62-year-old man presents with left-sided eye pain and diplopia for the past 2 days. Examination of his eyes shows his pupils equal and reactive to light with no proptosis. There is however an apparent palsy of the 6th cranial nerve associated with a partial 3rd nerve palsy on the left side. Examining the remaining cranial demonstrates hyperaesthesia of the upper face on the left side. Where is the likely lesion?

**A- Cavernous sinus**

B- Orbital apex

C- Pons

D- Cerebropontine angle

E- Medulla

Q96. A 29-year-old man with a history of schizophrenia is taken to the local Emergency Department as he is generally unwell. He is currently taking olanzapine and citalopram. On examination he is noted to have a temperature of 37.0ºC and his blood pressure is 170/100 mmHg. Which other examination finding would best support a diagnosis of neuroleptic malignant syndrome?

A- Ataxia

B- Hyperreflexia

**C- Muscle rigidity**

D- Tremor

E- Papilloedema

Q97. Which one of the following side-effects is least associated with the use of levodopa?

A- Psychosis

B- 'On-off' effect

C- Postural hypotension

D- Cardiac arrhythmias

**E- Galactorrhoea**

Q98. Which one of the following is not a recognised causes of miosis?

A- Old age

B- Pontine haemorrhage

**C- Holmes-Adie pupil**

D- Argyll-Robertson pupil

E- Horner's syndrome

Q99. Which of the following drugs is least likely to cause peripheral neuropathy?

A- Amiodarone

B- Vincristine

**C- Trimethoprim**

D- Isoniazid

E- Nitrofurantoin

Q100. A 23-year-old man with difficult to control epilepsy is reviewed in clinic, four months after a change in his antiepileptic medication. He has remained seizure free but has gained 5 kg in weight since last reviewed. Which one of the following antiepileptic drugs is most associated with weight gain?

A- Ethosuximide

**B- Sodium valproate**

C- Levetiracetam

D- Carbamazepine

E- Lamotrigine

Q101. A 15-year-old boy is reviewed. He has been referred by his GP with ptosis, diplopia and night blindness. On examination he is noted to have a degree of ophthalmoplegia, bilateral partial ptosis and evidence of retinitis pigmentosa during fundoscopy. His mother developed a similar problem when she was 18-yearsold. What is the most likely diagnosis?

**A- Kearns-Sayre syndrome**

B- Alport's syndrome

C- Usher syndrome

D- Refsum disease

E- Lawrence-Moon-Biedl syndrome

Q102. A 34-year-old female with a history of primary generalised epilepsy asks for advice in the neurology clinic as she plans to start a family. She currently takes sodium valproate as monotherapy. What advice should be given regarding the prevention of neural tube defects?

A- Folic acid 400 mcg per day once pregnancy has been confirmed

B- Folic acid 1 mg per day once pregnancy has been confirmed

**C- Folic acid 5 mg per day starting now**

D- Folic acid 10 mg per day starting now

E- Folic acid 400 mcg per day starting now

Q103. Which one of the following is least likely to cause a raised protein level in the cerebrospinal fluid?

A- Tuberculous meningitis

B- Guillain-Barre syndrome

C- Fungal meningitis

D- Spinal block

**E- Systemic lupus erythematous**

Q104. Which one of the following features is most associated with parietal lobe lesions?

**A- Gerstmann's syndrome**

B- Perseveration

C- Cortical blindness

D- Superior homonymous quadrantanopia

E- Wernicke's aphasia

Q105. You are asked to perform a neurological exam of the lower limbs on a patient with multiple sclerosis. Which one of the following findings is least typical?

**A- Decreased tone**

B- Patellar clonus

C- Upgoing plantars

D- Weakness

E- Brisk reflexes

Q106. Which of the following is least associated with Parkinsonism?

A- Chlorpromazine

B- Progressive supranuclear palsy

C- Dementia pugilistica

**D- Lead poisoning**

E- Wilson's disease

Q107. You review a 70-year-old woman four days after she was admitted with a suspected stroke. Unfortunately she has been left with right sided sensory loss affecting her arms more than the legs and a right sided homonymous hemianopia. Functionally she has difficulty dressing her self. Examination of her cranial nerves is unremarkable. What area is the stroke most likely to have affected?

**A- Middle cerebral artery**

B- Lacunar

C- Anterior cerebral artery

D- Posterior cerebral artery

E- Posterior inferior cerebellar artery

Q108. A 28-year-old woman with a history of systemic lupus erythematosus (SLE) presents with jerky, irregular movements which seem to move from one limb to another. Her symptoms are continuous and there are no other neurological features such as impairement of consciousness. Where is the neurological lesion most likely to be?

A- Cerebellum

B- Temporal lobe

C- Hippocampus

D- Thalamus

**E- Caudate nucleus**

Q109. Which one of the following antibodies are associated with painful sensory neuropathy in patients with small cell lung cancer?

A- Anti-Ri

B- Anti-GAD

C- Anti-Ro

**D- Anti-Hu**

E- Anti-Yo

Q110. A 68-year-old woman presents with a two month history of electric shock like pains on the right side of her face. She describes having around 10-20 episodes a day which, each lasting for around 30-60 seconds. A recent dental check was normal. Neurological examination is unremarkable. What is the most suitable first-line management?

A- Amitriptyline

B- Sodium valproate

**C- Carbamazepine**

D- Atenolol

E- Zolmitriptan

Q111. How long should a patient stop driving for following a stroke?

A- No restriction unless physical/visual impairment

**B- 1 month**

C- 3 month

D- 6 months

E- 12 months

Q112. A 60-year-old man is diagnosed with Bell's palsy. What is the current evidenced base approach to the management of this condition?

A- Refer for urgent surgical decompression

B- Aciclovir

C- No treatment

D- Aciclovir + prednisolone

**E- Prednisolone**

Q113. Which one of the following is most associated with a good prognosis in Guillain-Barre syndrome?

A- Age > 40 years

B- Female sex

**C- No history of a diarrhoeal illness**

D- High anti-GM1 antibody titre

E- Low peak expiratory flow rate

Q114. A 19-year-old man is diagnosed as having myoclonic seizures. What is the most appropriate first-line antiepileptic?

**A- Sodium valproate**

B- Carbamazepine

C- Topiramate

D- Clonazepam

E- Ethosuximide

Q115. A 27-year-old woman is reviewed due to sudden loss of vision in her left eye. She is known to have severe rheumatoid arthritis and is treated currently with methotrexate, infliximab and prednisolone. She has in the past also used sulfasalazine and hydroxychloroquine. For the past 6 weeks she has developed troublesome headaches. Examination demonstrates bilateral papilloedema. Which one of the following is most likely to be responsible for this presentation?

A- Chloroquine retinopathy

**B- Prednisolone**

C- Infliximab

D- Methotrexate

E- Keratoconjunctivitis sicca

Q116. A man is recovering after having an operation to remove a meningioma in his left temporal lobe. What sort of visual field defect is he at risk of having following the procedure?

A- Right inferior homonymous quadrantanopia

**B- Right superior homonymous quadrantanopia**

C- Left inferior homonymous quadrantanopia

D- Right homonymous hemianopia with macula sparing

E- Left superior homonymous quadrantanopia

Q117. A 63-year-old man is prescribed selegiline for Parkinson's disease. What is the mechanism of action?

A- Dopamine receptor antagonist

B- Dopamine receptor agonist

**C- Monoamine Oxidase-B inhibitor**

D- Antimuscarinic

E- Catechol-O-Methyl Transferase inhibitor

Q118. Which one of the following is most associated with downbeat nystagmus?

**A- Arnold-Chiari malformation**

B- Pseudobulbar palsy

C- Jugular foramen syndrome

D- Acoustic neuroma

E- Cerebellar vermis lesions

Q119. Which one of the following is least associated with ptosis?

A- Horner's syndrome

B- Myotonic dystrophy

C- Lambert-Eaton syndrome

D- Third nerve palsy

**E- Motor neuron disease**

Q120. A 31-year-old female with progressive leg weakness has nerve conduction studies for suspected Guillain-Barre syndrome. Which one of the following findings would be most consistent with this diagnosis?

**A- Reduced conduction velocity**

B- Extended series of repetitive discharges lasting up to 30 seconds

C- Increased conduction velocity

D- Diminished response to repetitive stimulation

E- Reduced wave amplitude

Q121. A 34-year-old woman who presents with confusion, headache and fever is admitted to the Emergency Department. Shortly after admission she has a seizure. A MRI scan is performed which shows patchy haemorrhagic changes in the temporal lobe. Given the likely diagnosis, what is the treatment of choice?

A- Supportive treatment + intravenous cefotaxime

**B- Supportive treatment + intravenous aciclovir**

C- Supportive treatment + intravenous amphotericin B

D- Supportive treatment alone

E- Supportive treatment + intravenous immunoglobulin

Q122. A 52-year-old man is reviewed in the neurology clinic. He has been referred due to the development of difficultly in finding the right words whilst speaking. His comprehension of normal conversation has however remained normal. Where is the likely lesion?

A- Anterior temporal lobe

B- Posterior temporal lobe

C- Parietal lobe

**D- Posterior frontal lobe**

E- Anterior frontal lobe

Q123. A 34-year-old accountant presents with a one week history of pain around his right eye occurring once or twice a day. They are described as being very severe and lasting between 10-30 minutes each. He also describes a feeling of a blocked nose. What is the treatment of choice to treat this current episode?

A- Ibuprofen

B- Acetazolamide + topical pilocarpine

C- Prednisolone

**D- Subcutaneous sumatriptan**

E- Ergotamine

Q124. A 75-year-old man is seen with his family who are concerned about his memory and behaviour over the past six months. A cognitive assessment is performed which seems to confirm the family's concerns. A series of blood tests are performed to exclude reversible causes. A full blood count, urea and electrolytes, liver function tests and bone profile are requested. Which other blood tests is it most appropriate to request?

A- Thyroid function tests, vitamin B12, glucose, syphilis, HIV

**B- Thyroid function tests, vitamin B12, folate, glucose**

C- Thyroid function tests, vitamin B12, folate, glucose, syphilis

D- Thyroid function tests, vitamin B12

E- Thyroid function tests, vitamin B12, syphilis, HIV

Q125. A 54-year-old man presents with a persistent tremor. On examination there is 6-8 Hz tremor of the arms which is worse when his arms are outstretched. His father suffered from a similar complaint. What is the most suitable first-line treatment?

A- Amitriptyline

**B- Propranolol**

C- D-penicillamine

D- Levodopa

E- Diazepam

Q126. A 49-year-old man presents to the Emergency Department complaining of visual disturbance. Examination reveals a right incongruous homonymous hemianopia. Where is the lesion most likely to be?

**A- Left optic tract**

B- Left optic radiation

C- Right optic tract

D- Right optic radiation

E- Optic chiasm

Q127. Each one of the following is associated with Friedreich's ataxia, except:

**A- Increased risk of deep vein thrombosis**

B- Optic atrophy

C- Cardiomyopathy

D- Nystagmus

E- High-arched palate

Q128. A 61-year-old woman presents with bilateral tinnitus. She reports no change in her hearing or other earrelated symptoms. Ear and cranial nerve examination is unremarkable. Which medication is she most likely to have recently started?

A- Ciprofloxacin

B- Nifedipine

C- Repaglinide

**D- Quinine**

E- Bendroflumethiazide

Q129. What is the most common clinical pattern seen in motor neuron disease?

A- Progressive muscular atrophy

B- Progressive bulbar palsy

C- Spinocerebellar ataxia

D- Relapsing-remitting

**E- Amyotrophic lateral sclerosis**

Q130. Each one of the following is associated with ataxic telangiectasia, except:

A- Telangiectasia

B- Cerebellar ataxia

**C- Autosomal dominant inheritance**

D- Recurrent chest infections

E- Increased risk of malignancy

Q131. During a routine cranial nerve examination the following findings are observed: Rinne's test: Air conduction > bone conduction in both ears Weber's test: Localises to the right side What do these tests imply?

A- Left conductive deafness

B- Normal hearing

C- Right conductive deafness

D- Right sensorineural deafness

**E- Left sensorineural deafness**

Q132. A 40-year-old man undergoes a temporal lobectomy after the discovery of a brain tumour. Which one of the following consequences would be least likely to develop?

A- Prosopagnosia

**B- Astereognosis**

C- Wernicke's aphasia

D- Superior homonymous quadrantanopia

E- Auditory agnosia

Q133. Which one of the following is least associated with the development of chorea?

A- Ataxic telangiectasia

B- SLE

C- Wilson's disease

D- Pregnancy

**E- Infective endocarditis**

Q134. A 43-year-old woman with multiple sclerosis presents for review. She is having increasing problems with painful involuntary contractions of the leg muscles. What is the most appropriate first-line therapy?

A- Referral for relaxation therapy

**B- Baclofen**

C- Diazepam

D- Dantrolene

E- Natalizumab

Q135. A 19-year-old man presents with a two-day history of a diffuse headache and sore throat. He is pyrexial at 37.8ºC and is reluctant to have a fundoscopy due to photophobia. A lumbar puncture is performed: Serum glucose 5.9 mmol/l Lumbar puncture reveals: Appearance Clear Glucose 4.1 mmol/l Protein 0.3 g/l White cells lymphocytes 2 /mm³ polymorphs 0 /mm³ What is the most likely diagnosis?

A- Guillain-Barre syndrome

B- Viral meningitis

C- Bacterial meningitis

D- Cerebral malaria

**E- Normal CSF result**

Q136. An 84-year-old female is admitted for a urinary tract infection. On the second night of admission she is found wandering outside the ward in an agitated state. Despite appropriate antibiotic therapy, nursing care and modification of her environment she remains agitated and aggressive and it is judged a potential danger to herself. What is the most appropriate management?

A- Haloperidol 5 mg orally

B- Lorazepam 2 mg intramuscularly

**C- Haloperidol 0.5 mg orally**

D- Lorazepam 0.5 mg orally

E- Ask for on-call psychiatric opinion for consideration of section under the Mental Health Act

Q137. Which one of the following causes of Horner's syndrome is due to a lesion in the post-ganglionic part of the nerve supply?

**A- Internal carotid aneurysm**

B- Stroke

C- Syringomyelia

D- Pancoast's tumour

E- Thyroidectomy

Q138. A 31-year-old man presents around four weeks after a non-specific viral illness characterised by fever, lethargy and sore throat. For the past week he has noticed increasing weakness in his legs which has now started to extend to his arms. On examination he has reduced power, reflexes and slightly reduced sensation in his lower limbs. A few days after admission he becomes short-of-breath. His forced vital capicity (FVC) starts to fall and he is transferred to ITU. Given the likely diagnosis, what is the treatment of choice

A- Neostigmine

B- Intravenous corticosteroids

C- Haemofilitration

**D- Intravenous immunoglobulin**

E- Riluzole

Q139. The following drugs commonly exacerbate myasthenia gravis, except:

**A- Methotrexate**

B- Gentamicin

C- Beta-blockers

D- Quinidine

E- Penicillamine

Q140. A 62-year-old man is admitted to the Emergency Department with a left hemiplegia. His symptoms started around 5 hours but he initially thought he had slept in an awkward position. He has no past medical history of note but on examination is found to have and irregular pulse of 150 / min. The ECG confirms atrial fibrillation. A CT head is immediately arranged and reported as normal. What is the most appropriate initial management?

**A- Aspirin**

B- Aspirin + dipyridamole

C- Alteplase

D- Warfarin

E- Aspirin + warfarin

Q141. A 27-year-old female presents complaining of generalised weakness. Examination of her face reveals bilateral ptosis, dysarthric speech and a slow-relaxing grip. What is the most likely diagnosis?

**A- Myotonic dystrophy**

B- Myasthenia gravis

C- Multiple sclerosis

D- Ataxic telangiectasia

E- Friedreich's ataxia

Q142. A 63-year-old woman with motor neuron disease is reviewed in clinic. Which one of the following interventions will have the greatest effect on survival?

A- Regular chest physiotherapy

B- Total parental nutrition

C- Riluzole

D- Antioxidant supplementation

**E- Non-invasive ventilation**

Q143. A 70-year-old man is investigated for involuntary, jerking movements of his arms. His symptoms seem to resolve when he is asleep. Damage to which one of the following structures may lead to hemiballism?

A- Substantia nigra

B- Red nucleus

**C- Subthalamic nucleus**

D- Globus pallidus

E- Frontal lobe

Q144. A 63-year-old man is diagnosed as having restless legs syndrome. What is the most relevant blood test to perform?

A- ESR

**B- Ferritin**

C- Blood glucose

D- Urea and electrolytes

E- Liver function tests

Q145. You are reviewing a patient with Parkinson's disease. Which one of the following types of medications has been most linked with impulse control disorders?

A- Levodopa

B- Catechol-O-Methyl Transferase inhibitors

**C- Dopamine receptor agonists**

D- Amantadine

E- Monoamine Oxidase-B inhibitors

Q146. Which one of the following medications is most useful for helping to prevent attacks of Meniere's disease?

A- Promethazine

B- Prochlorperazine

**C- Betahistine**

D- Chlorphenamine

E- Cinnarizine

Q147. A 23-year-old man with a history of migraine presents for review. His headaches are now occurring about once a week. He describes unilateral, throbbing headaches that may last over 24 hours. Neurological examination is unremarkable. Other than a history of asthma he is fit and well. What is the most suitable therapy to reduce the frequency of migraine attacks?

A- Propranolol

B- Zolmitriptan

**C- Topiramate**

D- Amitriptyline

E- Pizotifen

Q148. Which one of the following statements regarding the stopping of anti-epileptic drugs (AED) is most correct?

A- Can be considered if seizure free for > 5 years, with AEDs being stopped over 2-3 months

**B- Can be considered if seizure free for > 2 years, with AEDs being stopped over 2-3 months**

C- Can be considered if seizure free for > 1 year, with AEDs being stopped over 2-3 months

D- Can be considered if seizure free for > 5 years, with AEDs being stopped over 8-12 months

E- Can be considered if seizure free for > 1 year, with AEDs being stopped over 8-12 months

Q149. A 24-year-old female presents to her GP due to increased frequency of migraine attacks. She is now having around four migraines per month. Which type of medication would it be most appropriate to prescribe to reduce the frequency of migraine attacks?

A- Specific 5-HT2 agonist

B- 5-HT1 antagonist

C- Tricyclic antidepressant

**D- Beta-blocker**

E- Specific 5-HT1 agonist

Q150. A 42-year-old woman with a history of myasthenia gravis is admitted to the Emergency Department. She is currently taking pyridostigmine but there has been a significant worsening of her symptoms following antibiotic treatment for a chest infection. On examination she is dyspnoeic and cyanotic with quiet breath sounds in both lungs. Other than respiratory support, what are the two treatments of choice?

A- IV methylprednisolone or plasmapheresis

B- IV methylprednisolone or intravenous immunoglobulins

C- Plasmapheresis or atropine

D- IV methylprednisolone or atropine

**E- Plasmapheresis or intravenous immunoglobulins**

Q151. Which one of the following anti-epileptic drugs is most likely to cause visual field defects?

A- Lamotrigine

B- Phenytoin

C- Ethosuximide

**D- Vigabatrin**

E- Pregabalin

Q152. A 55-year-old man presents complaining of visual disturbance. Examination reveals a right congruous homonymous hemianopia with macula sparing. Where is the lesion most likely to be?

A- Right optic nerve

B- Left optic radiation

C- Left optic tract

**D- Left occipital cortex**

E- Optic chiasm

Q153. A 65-year-old female is admitted with a right hemiparesis. Examination reveals she is in atrial fibrillation. CT confirms an ischaemic stroke and aspirin 300mg is commenced. If the patient is well and develops no new problems at what point should warfarin be started?

**A- After 14 days**

B- Immediately

C- After 7 days

D- Following a repeat CT at 28 days to exclude secondary haemorrhage

E- Following a repeat CT at 14 days to exclude secondary haemorrhage

Q154. Which one of the following statements regarding restless legs syndrome is incorrect?

A- Movements may be seen during sleep

B- May be secondary to uraemia

C- Affects approximately 5% of the general population

D- Family history is found in up to 50% of patients

**E- It is three times as common in females**

Q155. Which one of the following conditions is least recognised as a cause of a seventh nerve palsy?

A- Acoustic neuroma

B- Herpes zoster

C- HIV

**D- Systemic lupus erythematosus**

E- Diabetes mellitus

Q156. A 45-year-old female is diagnosed with a glioma in the parietal lobe after being investigated for new onset seizures. Which one of the following features is she most likely to develop?

A- Visual agnosia

B- Auditory agnosia

**C- Acalculia**

D- Inability to generate a list

E- Expressive (Broca's) aphasia

Q157. A 71-year-old man is admitted to the Emergency Department. His family report that since yesterday he has been very 'clumsy' and unsteady on his feet. This morning he started to complain of numbness down his left side. On examination you notice that he has a right-sided Horner's syndrome and horizontal nystagmus. Examination of the peripheral nervous system confirms the sensory loss on the left side. Where is the lesion most likely to be?

A- Lateral sinus thrombosis

B- Posterior cerebral artery

**C- Posterior inferior cerebellar artery**

D- Middle cerebral artery

E- Anterior inferior cerebellar artery

Q158. A 63-year-old man who is known to have small cell lung carcinoma presents with gradually worsening muscle weakness. This initially affected his legs but is now spreading to the arms. He also complains of a dry mouth and erectile dysfunction. Neurological examination show bilateral leg and arm weakness associated with hyporeflexia. Antibodies to which one of the following are most likely to be responsible for these findings?

A- RNA-binding protein Nova-1

B- NMDA-receptors

C- Muscarinic acetylcholine receptors

D- Nicotinic acetylcholine receptors

**E- Voltage gated calcium channels**

Q159. A 76-year-old man is admitted with a right hemiparesis. On examination his blood pressure is 120/78 mmHg, pulse 84 bpm and oxygen saturations 96% on room air. A CT scan excludes intracerebral haemorrhage and he is given aspirin 300mg. What is the most appropriate management with regards to oxygen therapy in the first 12 hours following admission?

A- 35% via Venturi mask

B- 24% via Venturi mask

**C- No oxygen therapy**

D- 28% via Venturi mask

E- 2 litres/minute via nasal cannulae

Q160. A 23-year-old female has a lumbar puncture to exclude a subarachnoid haemorrhage following a negative CT scan. Which one of the following factors would be most likely to influence the incidence of post-lumbar puncture headache?

A- Position of the patient

B- Increased fluid intake post procedure

C- Opening pressure of CSF

D- Bed rest following the procedure

**E- Replacing the stylet**

Q161. A 64-year-old man who is under investigation for parkinsonian symptoms is brought to the GP by his wife. She is concerned her husband is becoming increasingly agitated. The GP prescribes haloperidol. One week later the GP is called out to see the patient as his parkinsonian symptoms have deteriorated markedly. What is the most likely underlying diagnosis?

**A- Lewy body dementia**

B- Normal pressure hydrocephalus

C- Progressive supranuclear palsy

D- Multiple system atrophy

E- Dementia pugilistica

Q162. A 62-year-old man is seen in the rapid access transient ischaemic attack clinic following three episodes over the past two weeks of transient left sided weakness. What is the most appropriate advice to give with regards to driving?

A- Cannot drive for 12 months

B- Cannot drive until investigations complete

C- Inform DVLA but can continue driving

D- Cannot drive for 3 months

E- Cannot drive for 1 month

Q163. A 73-year-old woman presents with episodic confusion and headaches for the past week. She has a history of alcohol excess and a background of atrial fibrillation and type 2 diabetes mellitus. Her daughter reports that she has been having frequent spells of confusion over the past few days. Last year she was assessed for frequent falls. Her current medications include bisoprolol, metformin and warfarin. Neurological examination is unremarkable and her blood sugar is 6.7 mmol/l. What is the most likely diagnosis?

A- Korsakoff's syndrome

B- Wernicke's encephalopathy

C- Extradural haematoma

D- Subarachnoid haemorrhage

**E- Subdural haematoma**

Q164. A 34-year-old man who is known to suffer from complex partial seizures is reviewed in the neurology clinic. He has not been able to tolerate either carbamazepine or sodium valproate. What is the most appropriate next line drug?

A- Phenytoin

**B- Lamotrigine**

C- Ethosuximide

D- Topiramate

E- Clonazepam

Q165. A 31-year-old woman presents with a 4 month history of headache. She has brought a headache diary which demonstrates that her symptoms are present on around 20-25 days of each month. The headache is typically unilateral and she is currently taking paracetamol 1g qds and ibuprofen 400mg tds everyday to try and relieve her symptoms. A diagnosis of medication overuse headache is suspected. What is the most appropriate management?

A- Add metoclopramide + start propranolol

B- Gradually withdraw analgesics + start propranolol

**C- Abruptly stop analgesics**

D- Gradually withdraw analgesics

E- Continue analgesics + start propranolol

Q166. A 25-year-old woman presents with recurrent attacks of 'dizziness'. These attacks typically last around 30-60 minutes and occur every few days or so. During an attack 'the room seems to be spinning' and the patient often feels sick. These episodes are often accompanied by a 'roaring' sensation in the left ear. Otoscopy is normal but Weber's test localises to the right ear. What is the most likely diagnosis?

A- Acoustic neuroma

B- Vestibular neuritis

C- Benign paroxysmal positional vertigo

D- Multiple sclerosis

**E- Meniere's disease**

Q167. Which one of the following is least likely to produce a lymphocytosis in the cerebrospinal fluid?

A- Systemic lupus erythematous

**B- Guillain-Barre syndrome**

C- Viral encephalitis

D- Partially treated bacterial meningitis

E- Behcet's syndrome

Q168. Which of the following features is least likely to be found in a patient with tuberous sclerosis?

A- Shagreen patches

B- Café-au-lait spots

C- Retinal hamartomas

**D- Axillary freckling**

E- Renal angiomyolipomata

Q169. Neuropathic pain characteristically responds poorly to opioids. However, if standard treatment options have failed which opioid is it most appropriate to consider starting?

**A- Tramadol**

B- Morphine

C- Codeine

D- Oxycodone

E- Buprenorphine

Q170. A 65-year-old man who is known to have metastatic colorectal cancer presents for review. Since last been seen he reports being generally stiff and on examination is noted to have diffuse hypertonia. Which antibodies are most likely to be responsible for this presentation?

**A- Anti-GAD**

B- Anti-Ri

C- Anti-Hu

D- Anti-La

E- Anti-Yo

Q171. Which one of the following factors indicates a poor prognosis in patients with multiple sclerosis?

A- Relapsing-remitting disease

B- Presence of sensory symptoms

C- Young age of onset

**D- Male sex**

E- Long interval between first two relapses

Q172. A 24-year-old woman with Charcot-Marie-Tooth disease (type 1) asks how likely it is that any future children will have the disease. What is the most accurate answer?

A- Three times as likely as background population

B- 25%

C- Between 5- 10%

D- Same as background population

**E- 50%**

Q173. A 44-year-old woman presents with a three month history of worsening involuntary movements of the head. These are worse when she is stressed and improved by alcohol. They are not present when she is sleep. There are no other neurological symptoms of note and neurological examination is unremarkable other than spotaneous movements of the head which are worse when she looks to either side. Her father had a similar complaint but never sought medical attention. What is the most likely diagnosis?

A- Parkinson's disease

B- Cerebellar tremor

C- Huntington's disease

D- Multiple sclerosis

**E- Essential tremor**

Q174. A 64-year-old female is reviewed in the rapid access transient ischaemic attack clinic. For the past three weeks she has been having episodes of transient loss of vision in the right eye. Carotid ultrasound reveals a 48% stenosis of her right carotid artery and an ECG shows sinus rhythm. What is the most appropriate management of this patient?

A- Warfarin

**B- Clopidogrel**

C- Carotid endarterectomy

D- Aspirin

E- Aspirin and dipyridamole

Q175. A 40-year-old woman who is known to be HIV positive is admitted to the Emergency Department following a seizure. Her partner reports that she has been having headaches, night sweats and a poor appetite for the past four weeks. Blood tests and a CT head are arranged: CD4 89 u/l CT head Single ring-enhancing lesion in the right parietal lobe What is the most likely diagnosis?

**A- Primary CNS lymphoma**

B- Tuberculosis

C- Progressive multifocal leukoencephalopathy

D- Cryptococcus

E- Toxoplasmosis

Q176. Which one of the following statements regarding the use of 5-HT1 agonists in the treatment of migraine is incorrect? migraine

A- May be given subcutaneously

B- Are first-line therapy (in combination with NSAIDs/paracetamol) for the management of acute

**C- Should be taken as soon as possible after the onset of an aura**

D- Should be avoided in patients with ischaemic heart disease

E- Adverse effects include tingling and chest tightness

Q177. Which one of the following statements regarding epilepsy in pregnant women is correct?

A- All pregnant women on antiepileptic medication should take 400mcg a day of folic acid

B- Antiepileptic drug levels should be monitored throughout pregnancy

C- The dose of lamotrigine usually needs to be decreased during pregnancy

**D- Pregnant women taking phenytoin should be given vitamin K in the last month of pregnancy**

E- Sodium valproate is most strongly associated with cleft palate

Q178. A 37-year-old woman with a history of type 2 diabetes mellitus and obesity presents after a late period. The urinary hCG test is positive. Her current medication is as follows: Orlistat 120mg tds Simvastatin 40mg on Aspirin 75mg od Metformin 1g bd Paracetamol 1g qds Aqueous cream prn Which one of her medications must be stopped straight away?

A- Paracetamol

B- Aspirin

**C- Simvastatin**

D- Orlistat

E- Metformin

Q179. A 22-year-old female presents with a history of fits, describing focal seizures associated with impairment of consciousness. What is the most suitable first-line treatment?

A- Phenytoin

B- Sodium valproate

C- Gabapentin

D- Levetiracetam

**E- Carbamazepine**

Q180. Which one of the following is least recognised as causing idiopathic intracranial hypertension?

A- Oral contraceptive pill

B- Tetracycline

**C- Ciclosporin**

D- Prednisolone

E- Vitamin A

Q181. A 19-year-old presents as she would like to start a combined oral contraceptive pill. During the history she states that in the past she has had migraine with aura. She asks why the combined oral contraceptive pill is contraindicated. What is the most appropriate response?

A- Theoretical risk of ischaemic stroke

**B- Significantly increased risk of ischaemic stroke**

C- Increased frequency of migraines

D- Migraine is an independent risk factor for venous thromboembolism

E- Increased severity of migraines

Q182. Which one of the following statements regarding absence seizures is incorrect?

A- Typical age of onset of 3-10 years old

B- Sodium valproate and ethosuximide are first-line treatments

**C- Seizures may be provoked by a child holding their breath**

D- There is a good prognosis

E- Characteristic EEG changes are seen

Q183. Which one of the following is least associated with Miller-Fisher syndrome?

A- Anti-GQ1b antibodies

B- Areflexia

C- Ataxia

**D- Postural hypotension**

E- Ophthalmoplegia

Q184. A 67-year-old man who has a history of type 2 diabetes mellitus and benign prostatic hypertrophy presents with burning pain in his feet. This has been present for the past few months and is getting gradually worse. He has tried taking duloxetine but unfortunately has received no benefit. Clinical examination is unremarkable other than diminished sensation to fine touch on both soles. What is the most suitable initial management?

A- Carbamazepine

B- Amitriptyline

**C- Pregabalin**

D- Fluoxetine

E- Gabapentin

Q185. A 49-year-old man is prescribed procyclidine for Parkinson's disease. What is the mechanism of action?

A- Antimuscarinic

B- Dopamine receptor agonist

C- Decarboxylase inhibitor

D- Dopamine receptor antagonist

E- Monoamine Oxidase-B inhibitor

Q186. Which one of the following features is least typically of motor neuron disease?

A- Fasciculation

B- Dysarthria

C- Increased muscle tone

**D- Ataxia**

E- Absent reflexes

Q187. A 35-year-old man presents with progressive weakness of his hands. On examination you notice wasting of the small muscles of the hand. A diagnosis of syringomyelia is suspected. Which one of the following features would most support this diagnosis?

A- Hyper-reflexia in the upper limbs

B- Loss of vibration sensation in the hands

**C- Loss of temperature sensation in the hands**

D- Loss of light touch sensation in the hands

E- Fasciculation of the small muscles of the hand

Q188. Each one of the following is associated with the development of chorea, except:

**A- Sarcoidosis**

B- Wilson's disease

C- Anti-phospholipid syndrome

D- Pregnancy

E- Rheumatic fever

Q189. A 34-year-old man presents with headache and blurred vision for a few weeks. Investigations reveal: Prolactin 21,500 mu/l CT brain Large pituitary mass encroaching on the optic chiasm with evidence of midline shift What is the most appropriate treatment?

**A- Dopamine agonist**

B- Trans-cranial hypophysectomy

C- Trans-sphenoidal hypophysectomy

D- Pituitary irradiation

E- Somatostatin

Q190. Which one of the following antibiotics is most likely to exacerbate myasthenia gravis?

A- Metronidazole

B- Ceftriaxone

C- Trimethoprim

D- Doxycycline

**E- Gentamicin**

Q191. A 51-year-old man with a history of schizophrenia is reviewed. He has developed parkinsonism secondary to his antipsychotic medication. Which one of the following drugs is most useful in the management of tremor?

A- Apomorphine

B- Cabergoline

C- Selegiline

D- Amantadine

**E- Benzhexol**

Q192. Which one of the following is least associated with myotonic dystrophy?

A- Dysphagia

**B- Aortic regurgitation**

C- Diabetes mellitus

D- Testicular atrophy

E- Learning difficulties

Q193. A 50-year-old man develops chronic, severe pain after sustaining a brachial plexus injury as a result of motorbike accident. He has had no benefit from paracetamol or ibuprofen. Following recent NICE guidelines, what is the most appropriate medication to consider?

A- Amitriptyline or gabapentin

B- Gabapentin or duloxetine

C- Amitriptyline or carbamazepine

**D- Amitriptyline or pregabalin**

E- Duloxetine or pregabalin

Q194. A 24-year-old woman presents for advice. Over the past few months she has been having increasing problems with migraine around the time of menstruation. Her current migraine started around 24 hours ago and has not responded to a combination of paracetamol and aspirin. What is the most appropriate next step to relieve her headache?

A- Codeine

B- Ergotamine

**C- Sumatriptan**

D- Venlafaxine

E- Norethisterone

Q195. A 71-year-old man is reviewed following an ischaemic stroke. He is known to be intolerant of clopidogrel. What is the most appropriate therapy to help reduce his chance of having a further stroke?

A- Aspirin + dipyridamole- Stop dipyridamole after 2 years

B – Dipyridamole- Stop dipyridamole after 2 years

C- Aspirin lifelong

D- Warfarin

**E- Aspirin + dipyridamole lifelong**

Q196. Antiepileptic medication is known to increase the risk of congenital defects. Which one of the following medications is thought to be associated with the lowest risk?

A- Levetiracetam

B- Sodium valproate

C- Phenytoin

**D- Carbamazepine**

E- Gabapentin

Q197. You review a 65-year-old man who is currently taking antipsychotic medication. His carers have noticed that his movements have been very slow over the past few weeks. Which one of the following would suggest a diagnosis of Parkinson's disease rather than drug-induced parkinsonism?

**A- Rigidity**

B- Masked face

C- Bilateral symptoms

D- Flexed posture

E- Restlessness of arms and legs

Q198. Each one of the following drugs may be used to prevent migraine attacks, except:

A- Pizotifen

B- Amitriptyline

C- Propranolol

D- Methysergide

**E- Sumatriptan**

Q199. Each of the following are causes of peripheral neuropathy. Which one is associated with predominately sensory loss?

A- Diphtheria

B- Hereditary sensorimotor neuropathies

C- Porphyria

D- Lead poisoning

**E- Uraemia**

Q200. Which one of the following causes of peripheral neuropathy is most associated with an axonal, rather than demyelinating, pathology?

A- Paraprotein neuropathy

B- Guillain-Barre syndrome

C- Hereditary sensorimotor neuropathies (HSMN) type I

D- Amiodarone

**E- Vasculitis**

Q201. A 67-year-old woman comes for review with her husband. Her husband complains that she is constantly getting up from bed at night and pacing around the bedroom. She complains of 'antsy' legs and a 'horrible, creeping sensation'. Her symptoms generally come on in the evening and are only relieved by moving round. Given the likely diagnosis, what is the most appropriate treatment?

**A- Ropinirole**

B- Carbamazepine

C- Amitriptyline

D- Citalopram

E- Quinine

Q202. A 45-year-old female with a past medical history of asthma is diagnosed as having essential tremor. What is the most suitable management?

A- Amitriptyline

B- Propranolol

C- Sodium valproate

D- Carbamazepine

**E- Primidone**

Q203. Which one of the following antibodies is associated with ocular opsoclonus-myoclonus in patients with breast cancer?

A- Anti-Hu

B- Anti-La

C- Anti-GAD

D- Anti-Yo

**E- Anti-Ri**

Q204. A 24-year-old woman who is 14 weeks pregnant presents with a severe migraine. She has a long history of migraine and stopped propranolol prophylaxis when she found out she was pregnant. Unfortunately the headache has not responded to paracetamol 1g. What is the most appropriate next step?

A- Ergotamine

B- Nasal zolmitriptan

**C- Ibuprofen 400mg**

D- Almotriptan 12.5mg

E- Codeine 30mg

Q205. Which one of the following statements regarding Meniere's disease is correct?

A- More common in patients from the Indian Subcontinent

B- Symptoms resolve in the majority of patients after 6-12 months

C- It is very rare that patients develop permanent hearing loss

D- More common in children

**E- Approximately equal incidence in males and females**

Q206. A 39-year-old man is diagnosed as having cluster headaches. He has received subcutaneous sumatriptan on two occasions but would like to start medication to help prevent further attacks. Of the following options, which one is the most suitable treatment?

A- Atenolol

B- Amitriptyline

C- Sodium valproate

**D- Verapamil**

E- Gabapentin