1 A 24 year old women, on tetracyclines for acne, presents with a three month history of headaches and fleeting episodes of blurred vision. On examination, she is obese and has severe papilloedema, but no other neurological signs. A CT scan is normal.

Which of the following is the most appropriate initial investigation?

A. MRI brain scan.
B. Cerebral angiography.
C. Hypercoaguability screen.
D. Overnight dexamethazone suppression test.
E. Lumbar puncture.

2 In rheumatoid arthritis the granulation tissue termed pannus is erosive principally because of:

A. Production of localised vasculitis
B. Production of fibrinoid necrosis
C. Procoagulant activity and capillary thrombosis
D. Production of collagenase and other enzymes
E. Presence of osteoclasts within the pannus
3 Levodopa is combined with carbidopa for the treatment of Parkinson’s disease. Carbidopa is added to:

A. slow absorption of levodopa.
B. reduce nausea caused by levodopa.
C. reduce the required dose of levodopa.
D. block chemoreceptor-trigger zone receptors.
E. reduce the breakdown of levodopa by catechol-O-methyl transferase.

4 Which of the following antibiotics is the commonest cause of Clostridium difficile colitis?

A. Clindamycin.
B. Metronidazole.
C. Gentamicin.
D. Amoxycillin.
E. Doxycycline.
5 A 75 year old mildly demented man has carcinoma of the colon. He has difficulties in the management of his financial affairs and has moved from his home to a hostel. He has symptoms from his carcinoma but, despite initial consent for treatment, he now refuses all treatment, and permission for the diagnosis to be communicated to his family.

Which of the following is the most appropriate?
A. The family should be asked to give consent.
B. His refusal to consent cannot be challenged.
C. A request for a guardianship order should be made.
D. The initial consent remains valid.
E. His capacity to consent must be reassessed.

6 A 65 year old male has a 3 year history of intermittent pain in both knees and now presents with a 2 week history of pain and swelling in the right knee. Examination reveals a small effusion of the knee. The synovial fluid findings are as follows:

- White cell count 700/mm³ [<100]
- Mononuclear cells 90%
- Neutrophils 10%
- No crystals were seen.

X-ray of the knee is shown.

The most likely cause of the right knee pain is:
A. Osteoarthritis.
B. Ankylosing spondylitis.
C. Pseudogout.
D. Psoriatic arthritis.
E. Rheumatoid arthritis.
7  With which one of the following clinical syndromes is *Pseudomonas aeruginosa* most strongly associated?

A. Osteomyelitis of the tarsal bones complicating foot infection in diabetics.
B. Osteomyelitis of the temporal bone complicating otitis externa in diabetics.
C. Haematogenous vertebral osteomyelitis in adults with urinary infection.
D. Osteomyelitis of the phalanges following a cat bite.
E. Osteomyelitis of the mandible complicating dental sepsis.

8  Which of the following is the commonest cause of bilateral lower motor neurone Seventh nerve palsy?

A. Sarcoidosis.
B. HIV polyneuropathy.
C. Acute inflammatory demyelinating neuropathy.
D. Herpes zoster.
E. Brainstem infarction.

9  A 72 year old man presents with acute onset of left sided weakness. On examination he is drowsy, has a dense left hemiparesis and blood pressure 200/100. CT scan of the head without contrast reveals a large haemorrhage in the right parietal lobe. The patient deteriorates and requires decompression.

The most likely pathology of the excised tissue is:

A. Arteriovenous malformation.
B. Berry aneurysm.
C. Glioma.
D. Beta A4 protein in vessel walls.
E. Mycotic aneurysm.
10 When interpreting the results of bone mineral density scans, which of the following parameters correlates best with the risk of future fractures?

A. Absolute bone density.
B. T-score.
C. Z-score.
D. Soft tissue density.
E. Change in bone density.

11 A 45 year old man presents with pneumonia. He is found to have IgG multiple myeloma.

His routine biochemistry finds:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium</td>
<td>143 mmol/L</td>
<td>[134-146]</td>
</tr>
<tr>
<td>potassium</td>
<td>4.5 mmol/L</td>
<td>[3.4-5.3]</td>
</tr>
<tr>
<td>chloride</td>
<td>101 mmol/L</td>
<td>[95-105]</td>
</tr>
<tr>
<td>HCO₃⁻</td>
<td>28 mmol/L</td>
<td>[24-31]</td>
</tr>
<tr>
<td>glucose</td>
<td>5.5 mmol/L</td>
<td>[3.5-6.5]</td>
</tr>
<tr>
<td>urea</td>
<td>18 mmol/L</td>
<td>[3-8]</td>
</tr>
<tr>
<td>creatinine</td>
<td>250 mmol/L</td>
<td>[60-120]</td>
</tr>
<tr>
<td>albumin</td>
<td>35 g/L</td>
<td>[35-50]</td>
</tr>
<tr>
<td>protein</td>
<td>70 g/L</td>
<td>[60-80]</td>
</tr>
<tr>
<td>calcium</td>
<td>2.3 mmol/L</td>
<td>[2.1-2.6]</td>
</tr>
<tr>
<td>PO₄³⁻</td>
<td>1.0 mmol/L</td>
<td>[0.8-1.50]</td>
</tr>
<tr>
<td>alkaline phosphatase</td>
<td>100 U/L</td>
<td>[35-135]</td>
</tr>
</tbody>
</table>

The most likely cause of this renal impairment is:

A. myeloma cast nephropathy.
B. Acute tubular necrosis.
C. Amyloid.
D. Plasma cell infiltration.
E. Proliferative glomerulonephritis.
12 A 17 year old girl notices swelling of her ankles and breathlessness. Examination shows pitting oedema, blood pressure is 150/95 mmHg and urine contains ++protein, +++ blood. Microscopy of the urine shows cellular casts and crenated and fragmented red cells.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum Creatinine</td>
<td>105 mmol/L</td>
<td>[50-120]</td>
</tr>
<tr>
<td>Complement C3</td>
<td>0.4g/L</td>
<td>[0.75–1.50]</td>
</tr>
<tr>
<td>Complement C4</td>
<td>0.23g/L</td>
<td>[0.16-0.56]</td>
</tr>
</tbody>
</table>

The most likely diagnosis is:

A. Minimal change disease.
B. Focal and segmental glomerulosclerosis.
C. Systemic lupus erythematosus.
D. Membranous glomerulonephritis.
E. Post infectious glomerulonephritis.

13 An asymptomatic 40 year old male who jogs regularly has two episodes of transient light headedness at rest. There is no history of smoking or diabetes and no family history of premature vascular disease. BP is 150/70. Other examination is unremarkable. His ECG is illustrated.

The next most appropriate step is:

A. reassurance.
B. Holter monitoring.
C. trial of treatment with anticholinergics.
D. myocardial biopsy.
E. permanent pacing.
A 36 year old man who was admitted to the Intensive Care Unit 3 weeks ago with multiple injuries sustained in a motor vehicle accident is intubated and breathing spontaneously. He has a Swan Ganz catheter which was inserted 10 days ago and is receiving total parenteral nutrition via a multilumen central venous catheter. For the last week he has had bilateral alveolar shadowing on chest X-ray but his oxygenation has been stable whilst receiving intravenous ceftriaxone. He suddenly develops a high fever (40.3°C PO) and becomes haemodynamically unstable; clinical examination fails to reveal a likely source of infection and chest X-ray is unchanged. Intial investigation results include the following:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin</td>
<td>109 g/L</td>
</tr>
<tr>
<td>White cell count</td>
<td>$15.7 \times 10^9$/L</td>
</tr>
<tr>
<td>- Neutrophils</td>
<td>$11.6 \times 10^9$/L</td>
</tr>
<tr>
<td>- Lymphocytes</td>
<td>$3.0 \times 10^9$/L</td>
</tr>
<tr>
<td>- Monocytes</td>
<td>$0.7 \times 10^9$/L</td>
</tr>
<tr>
<td>Platelets</td>
<td>$150 \times 10^9$/L</td>
</tr>
<tr>
<td>Film comment</td>
<td>Band forms + +; toxic granulation + +;</td>
</tr>
</tbody>
</table>

After obtaining cultures from blood and urine, which of the following is the most appropriate next diagnostic step?

A. Whole body gallium scan.
B. Culture of endotracheal aspirate.
C. Removal of indwelling lines for culture.
D. Bronchoscopy with transbronchial biopsy.
E. Echocardiogram.
15 Which of the following conditions is the major contraindication for an older person to be involved in an exercise programme?

A. Alzheimer’s dementia.
B. Unstable angina pectoris.
C. Atrial fibrillation.
D. Stroke.
E. Chronic obstructive pulmonary disease.
16 A 19-year-old male complains of intermittent breathlessness and wheezing. Which of the following lung function abnormalities is most specific for a diagnosis of asthma?

A. A ratio of the forced expiratory volume in one second to forced vital capacity (FEV1/FVC) of less than 0.7.
B. An increase in the forced expiratory volume in one second (FEV1) of 15% following inhalation of 400 mcg salbutamol.
C. A ratio of residual volume to total lung capacity (RV/TLC) greater than 120% of predicted.
D. A concentration of inhaled methacholine causing a 25% fall in the forced expiratory volume in one second (FEV1) of 1 mg/ml.
E. An increase in the carbon monoxide diffusing capacity to 125% of predicted.

17 Of the following statements, pick the one that best relates to axial skeletal involvement in rheumatoid arthritis.

A. sacro-iliac joints are involved early in the course of the disease
B. involvement of the lumbar spine in characteristic
C. cervical spondylosis is a significant radiological finding
D. axial involvement is usually limited to the upper cervical spine
E. low back pain is one of the commonest symptoms in rheumatoid arthritis

18 Apart from nausea, what is the most common side effect of the class of medications that include citalopram, ecitalopram, sertraline, paroxetine and fluvoxamine?

A. Akathisia.
B. Sexual dysfunction.
C. Diarrhoea.
D. Mania.
E. Seizures.
19 Which of the following best determines whether an ascitic fluid sample is a transudate or an exudate?

A. Ascitic pH.
B. Ascitic lactic dehydrogenase activity.
C. Serum to ascitic fluid albumin gradient.
D. Ascitic neutrophil count.
E. Ascitic protein concentration.

20 The prevalence of alcohol related morbidity in a community is best predicted by the:

A. mean alcohol consumption of the members of the community.
B. overall prevalence of alcoholism.
C. number of malnourished alcoholics in the community.
D. prevalence of abusive drinking among young males.
E. amount of alcohol consumed by the highest decile of alcohol consumers.

21 Which of the following drugs newly prescribed to a patient with stable and therapeutic lithium levels is most likely to produce an increase in his serum lithium?

A. Fluoxetine.
B. Theophylline.
C. Captopril.
D. Hydrochlorothiazide.
E. Aspirin.
22 The following results are obtained from a 40 year old man prior to elective hernia surgery who gives a history of excessive bleeding after dental extraction.

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding time</td>
<td>6 mins`</td>
<td>[2-9]</td>
</tr>
<tr>
<td>Prothrombin time</td>
<td>12 secs`</td>
<td>[12-14]</td>
</tr>
<tr>
<td>International normalised prothrombin ratio (INR)</td>
<td>1.0</td>
<td>[0.1-1.2]</td>
</tr>
<tr>
<td>Activated partial thromboplastin time (APTT)</td>
<td>48 secs</td>
<td>[25-38]</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>2.4g/L</td>
<td>[1.8-4.0]</td>
</tr>
</tbody>
</table>

Mixing the patient’s plasma with an equal volume of normal plasma normalises the APTT.

Which of the following is the most likely diagnosis?

A. factor VII deficiency
B. Recent aspirin ingestion
C. antiphospholipid antibody syndrome
D. Von Willebrand’s disease
E. haemophilia B

23 Which of the following is the most critical issue when using DNA analysis for presymptomatic (predictive) testing in Huntington’s disease?

A. Blood has to be collected in a specific way.
B. A neurological assessment is mandatory.
C. The test is only conducted if the individual is at risk.
D. There must be a living affected relative.
E. Appropriate counselling must be given.
24 The muscle pair which most importantly assists in elevating the arm above the head is the:

A. trapezius and pectoralis minor  
B. levator scapulae and serratus anterior  
C. rhomboid major and serratus anterior  
D. rhomboid major and levator scapulae  
E. trapezius and serratus anterior

25 Which of the following physiological responses is NOT integrated within the medulla oblongata?

A. swallowing  
B. sneezing  
C. temperature regulation  
D. gagging  
E. vomiting

26 A lesion of the left cerebral hemisphere involving the motor cortex is most likely to result in paralysis of the muscles of the face in its

A. right half  
B. left half  
C. right upper quadrant  
D. right lower quadrant  
E. right and left lower quadrants
27 The motorneurones responsible for the knee-jerk are located mainly in spinal cord segments

A. L1, L2
B. L2, L3
C. L3, L4
D. L4, L5
E. L5, S1

28 The best single indicator of the adequacy of restoration of fluid volume after injury is

A. Blood volume
B. Haematocrit
C. Blood gases
D. Urine output
E. Rise in blood pressure

29 The annular ligament prevents dislocation of the

A. distal end of the clavicle from the acromion process
B. head of the humerus from the glenoid cavity
C. head of the ulna from the triquetrum
D. head of the radius from the radial notch of the ulna
E. head of the third metacarpal from the base of the proximal phalanx
30 The most important factor increasing blood flow through an active muscle is

A. adrenaline release during exercise
B. activation of sympathetic dilator fibres
C. reduced constrictor tone in the arterioles of the muscle
D. local action of metabolites on vessels in the muscles
E. the “muscle pump” action
<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>E</td>
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<td>2.</td>
<td>D</td>
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<td>6.</td>
<td>A</td>
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<td>9.</td>
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<td>10.</td>
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<td>11.</td>
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<td>12.</td>
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<tr>
<td>30.</td>
<td>D</td>
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</tbody>
</table>