

Questions and Answers to accompany

# Rheumatology

**A Clinical Handbook**

**SECOND  
EDITION**

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# Practice questions

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# Single best answer questions (SBAs)

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Answers are to be found on page 22.

- 1. Which one of the following is not included as a core inclusion criterion for the diagnosis of polymyalgia rheumatica, according to ACR/EULAR classification criteria?**
  - A. Age >50 years, bilateral shoulder pain and abnormal ESR/CRP
  - B. Hip pain or limited range of motion
  - C. Morning stiffness duration of >45 min
  - D. Absence of RF or anti-cyclic citrullinated peptide antibodies (anti-CCP)
  - E. Weight loss >5 kg
  
- 2. Which one of the following is a recognized feature of polymyalgia rheumatica?**
  - A. Weakness of distal muscle groups
  - B. Elevated serum creatine phosphokinase activity
  - C. An association with bronchial carcinoma
  - D. Weight loss
  - E. A peak incidence in the fourth decade of life
  
- 3. A 70 year old man complains of pain and stiffness in both of his shoulders. He has lost 1 stone (6.3 kg) in the last 8 weeks and complains of feeling lethargic with loss of appetite. Investigations revealed a very high ESR (100 mm/hr), normochromic normocytic anaemia and a positive rheumatoid factor. Which one of the following is the most likely diagnosis?**
  - A. Polyarteritis nodosa
  - B. Polymyalgia rheumatica
  - C. Polymyositis
  - D. Rheumatoid arthritis
  - E. SLE
  
- 4. A woman presents with headache, lethargy and weight loss. Which one of the following would make the diagnosis of giant cell arteritis unlikely?**
  - A. A raised ESR
  - B. Bilateral headache
  - C. Non-tender temporal arteries
  - D. Papilloedema on fundoscopy
  - E. Patient is 60 years old
  
- 5. A 60 year old woman diagnosed with giant cell arteritis was commenced on high-dose prednisolone therapy. Which one of the following is the most appropriate treatment for the prevention of steroid-induced osteoporosis?**
  - A. Bisphosphonate therapy
  - B. Calcium and vitamin D
  - C. Hormone replacement therapy
  - D. Raloxifene
  - E. Salmon calcitonin

- 6. A 51 year old woman presented with a 2-year history of intermittent episodes of arthralgia, rash and fevers. She complained of increasing fatigue, breathlessness and swollen ankles over the previous 6 months. On examination, she had a purpuric rash on the lower extremities and a right-sided pleural effusion. Urinalysis showed protein 3+, blood 1+.**

**Investigations:**

Erythrocyte sedimentation rate	140 mm/1st hr	(<30)
Serum creatinine	140 µmol/L	(60–110)
Serum complement C4	<5 mg/dL	(15–50)
ANA	positive at 1:600 dilution	
Rheumatoid factor	90 kIU/L	(<30)

**Which one of the following is the most likely diagnosis?**

- A. Henoch–Schönlein purpura
  - B. Microscopic polyangiitis
  - C. Mixed cryoglobulinaemia
  - D. Systemic lupus erythematosus
  - E. Systemic rheumatoid disease
- 7. A 34 year old woman with a 6-year history of Sjögren's syndrome found that she was 14 weeks pregnant. Which one of the following is not a clinical feature of Sjögren's syndrome?**
- A. Dry mouth
  - B. Parotid swelling
  - C. Aphthous mouth ulcers
  - D. Dry eyes
  - E. Raynaud's phenomenon
- 8. A 45 year old woman presented with right flank pain. She had a 4-year history of hypertension and progressive cognitive impairment. On examination, she had livedo reticularis and tenderness in the right flank. Her blood pressure was 185/105 mmHg. Urinalysis showed blood 3+, protein 1+.**

**Investigations:**

Haemoglobin	129 g/L	(115–165)
White cell count	$8.7 \times 10^9/L$	(4.0–11.0)
Platelet count	$83 \times 10^9/L$	(150–400)
Serum creatinine	106 µmol/L	(60–110)

**Which one of the following antibody tests is most likely to be positive?**

- A. Anti-cardiolipin
- B. Anticentromere
- C. Anti-glomerular basement membrane
- D. Antimitochondrial
- E. Antineutrophil cytoplasmic

- 9. A 50 year old man has a swollen right foot which is red, hot and tender when he puts his socks on. He cannot recall injury to the foot or any other provoking factors. His social history indicates that he smokes 15 cigarettes a day and drinks 40 units of alcohol per week. Which one of the following is the most appropriate treatment for this man?**

- A. Colchicine
- B. Allopurinol
- C. Morphine
- D. Naproxen
- E. Amoxicillin

- 10. A 65 year old woman presented with generalized arthralgia for the previous 2 weeks. She had a past medical history of urinary tract infections. She was advised to take a non-steroidal anti-inflammatory drug (NSAID). On examination, her blood pressure was 139/98 mmHg and she had pitting oedema below the knees.**

**Investigations:**

Serum creatinine                      458  $\mu\text{mol/L}$                       (60–110)

24 hr urinary total protein            2.3 g                      (<0.2)

**Which one of the following is the most likely cause of the renal impairment?**

- A. Lupus nephritis
- B. Immunoglobulin A (IgA) nephropathy
- C. Interstitial nephritis
- D. Renal vasculitis
- E. Amyloidosis

- 11. A 45 year old woman attends the rheumatology outpatient clinic complaining of symmetrical pain and swelling of her MCP joints for 7 weeks. She also experiences morning stiffness for greater than an hour but her symptoms ease as the day progresses. Which one of the following is the most likely diagnosis?**

- A. Rheumatoid arthritis
- B. Osteoarthritis
- C. Gout
- D. Polymyalgia rheumatica
- E. Psoriatic arthritis

- 12. A 33 year old woman attends the rheumatology outpatient clinic complaining of symmetrical joint pain in her hands. She also experiences morning stiffness which eases as the day progresses. On examination, her MCP joints are swollen and warm. You suspect rheumatoid arthritis. Which one of the following investigations is most specific in confirming rheumatoid arthritis?**
- A. Rheumatoid factor levels
  - B. X-rays
  - C. CRP
  - D. CT scan
  - E. Anti-citrullinated peptide antibody (anti-CCP) levels
- 13. A 70 year old gardener with a background history of osteoarthritis presents to the emergency department with a painful right knee. He claims that he is unable to flex the knee without experiencing excruciating pain. He later tells you he pricked his knee on a rose thorn the other day. On examination, the knee is warm and you note he has a fever. You suspect septic arthritis. Which one of the following is your most appropriate next step?**
- A. Admit him to the ward and arrange for analgesia and antibiotics
  - B. Aspirate the knee and send it for immediate Gram stain and microscopy
  - C. Perform an X-ray of the knee to confirm diagnosis
  - D. Send him home with a course of antibiotics
  - E. Refer him to an orthopaedic surgeon for immediate washout of the knee
- 14. A 50 year old woman presents with dry eyes, a dry mouth, an erythematous rash and polyarthralgia. Investigations: ANA strongly positive (1:1600), anti-Ro / SSA antibodies strongly positive, rheumatoid factor positive, IgG markedly elevated at 45 g/L (normal <15 g/L). IgM and IgA levels are normal and the kappa / lambda ratio is normal. Which one of the following is the most likely diagnosis?**
- A. Hyperviscosity syndrome
  - B. Myeloma-associated vasculitis
  - C. Primary Sjögren's syndrome
  - D. Rheumatoid arthritis with secondary Sjögren's syndrome
  - E. Systemic lupus erythematosus
- 15. A 41 year old man with a history of nasal congestion, breathlessness, cough and wheeze presents with a left foot drop. Which one of the following is the most likely diagnosis?**
- A. Diabetes mellitus
  - B. Wegener's granulomatosis
  - C. Churg–Strauss syndrome
  - D. Pulmonary eosinophilia
  - E. Polyarteritis nodosa

- 16. A 65 year old gentleman was referred by his GP with a 4-month history of lethargy and weight loss. He has a PMHx of prostate cancer which is now in remission. He complains of oral ulcers, epistaxis and haemoptysis. On examination his blood pressure was 130/80 mmHg. He had 1+ blood on urine dipstick. He also had a non-blanching rash over both legs and buttocks.**

**Investigations:**

WCC	$15.4 \times 10^9/\text{L}$	(4.0–11.0)
CRP	246 mg/L	(<10)
ESR	49 mm/hour	(<30)
c-ANCA	positive for PR-3	

**Which one of the following is the most likely diagnosis?**

- A. Henoch–Schönlein purpura
  - B. Churg–Strauss syndrome
  - C. Wegener’s granulomatosis
  - D. Behçet’s disease
  - E. Microscopic polyangiitis
- 17. A 35 year old gentleman presents to his GP with a recent history of a dry cough, wheeze and a purpuric rash. Churg–Strauss syndrome is the proposed diagnosis. What one immunological investigation would you choose to confirm this diagnosis?**
- A. ANCA
  - B. ANA
  - C. Rheumatoid factor
  - D. Anti-CCP
  - E. ENA
- 18. A 70 year old gentleman presents to his GP with a 2-week history of a left temporal headache. He does not complain of jaw claudication or any visual disturbance. He has, however, been lethargic yet denied any weight loss, night sweats or fever. On examination he was tender over the temporal region and left scalp. His plasma viscosity was 1.90 (raised) and CRP was 70 (raised). Which one of the following is the treatment of choice?**
- A. NSAIDs
  - B. DMARDs
  - C. Oral prednisolone
  - D. IV steroids
  - E. Triptan medicines (migraine relief)
- 19. A 40 year old Turkish businessman presents with a 2-year history of recurrent mouth ulcers. He has also noted occasional genital ulcers and a tender lump on the front of his right shin. He has had three episodes of a painful red eye. On examination he had aphthous ulcers and widespread acne. There was also a tender nodule on the anterior surface of the shin resembling erythema nodosum.**

**His inflammatory markers are normal. Which one of the following is the most likely diagnosis?**

- A. Sarcoidosis
- B. Systemic lupus erythematosus
- C. Inflammatory bowel disease
- D. Herpes simplex
- E. Behçet's disease

**20. A rheumatology inpatient has recently been diagnosed with granulomatosis with polyangiitis (Wegener's granulomatosis). First-line treatment would be which one of the following?**

- A. NSAIDs
- B. Steroids
- C. Oral DMARDs
- D. Cyclophosphamide
- E. Plasma exchange

**21. A 48 year old lady is referred to the rheumatology outpatient clinic with a 4-month history of fatigue, aches and weakness of her thighs. She has a past medical history of hypercholesterolaemia and is on simvastatin. On examination she has normal muscle bulk. Active hip flexion was reduced (MRC grade 3). Neurological examination was otherwise normal.**

**Investigations:**

Hb	98 g/L	(115–165)
WCC	$12.0 \times 10^9/\text{L}$	(4.0–11.0)
Platelets	$400 \times 10^9/\text{L}$	(150–400)
Plasma viscosity	2.0	(1.5–1.72)
Creatine kinase	15000 IU/L	

**The diagnosis is likely to be which one of the following?**

- A. Polymyalgia rheumatica
- B. Statin-induced myopathy
- C. Polymyositis
- D. Dermatomyositis
- E. Hip osteoarthritis

**22. A 42 year old Afro-Caribbean female is referred to the rheumatology outpatient department with an 8-week history of polyarthralgia involving small joints of the hands and feet. She also complains of a 6-month history of a persistent dry cough and recurrent mouth ulcers. On examination she has a butterfly rash. Which one of the following immunological investigations would be your first choice?**

- A. ANA
- B. RF
- C. Anti-CCP antibodies
- D. Extractable nuclear antigens
- E. Immunoglobulins



**23. Which one of the following is the commonest cause of death in SLE?**

- A. Infection
- B. Cardiovascular disease
- C. Lupus nephritis
- D. Cerebral lupus
- E. Thromboembolism

**24. A 60 year old lady is referred to rheumatologists by her GP due to a long-standing history of polyarthralgia, Raynaud's phenomenon and gastro-oesophageal reflux. On examination she has swollen proximal interphalangeal joints and thickened skin up to the wrists bilaterally. On palpation, the distal interphalangeal joints are tender and slightly cold. Investigations show a positive ANA of 1:1600 positive speckled pattern. Which one of the following is the most likely diagnosis?**

- A. SLE
- B. Sjögren's syndrome
- C. Systemic sclerosis
- D. Mixed connective tissue disease
- E. Rheumatoid arthritis

**25. A 35 year old female is referred by a fertility specialist to the rheumatology department. She has had 3 consecutive miscarriages between 13 and 20 weeks. She also has a past medical history of photosensitivity and recurrent mouth ulcers. She has a family history of multiple pulmonary emboli affecting her mother. What one immunological investigation would be your best choice?**

- A. ANA
- B. Anti-cardiolipin antibodies
- C. DsDNA
- D. ENA
- E. Immunoglobulins

**26. A 35 year old man presents to his GP with a 2-week history of painful, swollen knees and a painful left heel. He also reveals that he has been experiencing a burning pain when he urinates and has a red, itchy eye. Which one of the following is the most likely diagnosis?**

- A. Gout
- B. Osteoarthritis
- C. Enteropathic arthritis
- D. Ankylosing spondylitis
- E. Reactive arthritis

- 27. A 65 year old man presents to the outpatient clinic with increasing pain in his right knee. On examination you notice swelling around the knee and there is crepitus with restricted range of movement. You decide to perform an X-ray. Which one of the following would you expect to see?**
- A. Reduced joint space, subchondral sclerosis and osteophytes
  - B. Increased joint space, subchondral sclerosis and osteophytes
  - C. Decreased joint space, chondrocalcinosis and osteophytes
  - D. Decreased joint space, bony erosions and osteophytes
  - E. Decreased joint space, subchondral sclerosis, syndesmophytes
- 28. A 70 year old lady has been referred to the bone clinic following a low impact trauma fracture of her wrist. She is diagnosed as having osteoporosis. Which one of the following is her T-score?**
- A.  $-1.5$  to  $-2.0$
  - B.  $0$  to  $-1.0$
  - C.  $0$  or above
  - D.  $-2.5$  or below
  - E.  $-1.0$  to  $-1.5$
- 29. A lady is newly diagnosed with osteoporosis. She has never been on treatment. Which one of the following is the first-line treatment?**
- A. Alendronic acid
  - B. Etidronate
  - C. Risedronate
  - D. Strontium ranelate
  - E. Zoledronate
- 30. A 67 year old lady is referred to the bone clinic following a fractured wrist. A DEXA scan is performed which shows a T-score of  $-2.0$ . She has no other osteoporotic risk factors. Which one of the following treatments would you offer?**
- A. Lifestyle advice and vitamin D supplementation
  - B. Alendronic acid
  - C. HRT
  - D. Risedronate
  - E. No treatment

# Extended matching questions (EMQs)

Answers are to be found on page 27.

## Options for questions 1–5

<b>A</b>	Rheumatoid arthritis	<b>I</b>	Ankylosing spondylitis
<b>B</b>	Gout	<b>J</b>	Pseudogout
<b>C</b>	Giant cell arteritis	<b>K</b>	Sjögren's syndrome
<b>D</b>	Reactive arthritis	<b>L</b>	Polymyositis
<b>E</b>	SLE	<b>M</b>	Osteoporosis
<b>F</b>	Fibromyalgia	<b>N</b>	Dermatomyositis
<b>G</b>	Scleroderma	<b>O</b>	Psoriatic arthritis
<b>H</b>	Osteomalacia		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 1</b>	A 56 year old man, whose alcohol consumption is approximately 50 units per week, presents with sudden onset pain and discomfort affecting his right foot. The mid-tarsal joints are tender and inflamed.
<b>Question 2</b>	A 24 year old lady presents with mouth ulcers, Raynaud's phenomenon and a photosensitive rash. Antinuclear antibody is positive.
<b>Question 3</b>	A 50 year old man has pain and stiffness in his shoulders, thighs and hips. CK is grossly elevated.
<b>Question 4</b>	A 27 year old man has a long-standing history of low back pain affecting mainly the sacroiliac areas. He has previously had two attacks of iritis.
<b>Question 5</b>	A 62 year old man presents with left-sided temporal headache and pain in the jaw. A temporal biopsy is performed and comes back as negative.

## Options for questions 6–10

<b>A</b>	Gout	<b>I</b>	Polymyositis
<b>B</b>	Fibromyalgia	<b>J</b>	Reactive arthritis
<b>C</b>	Scleroderma	<b>K</b>	SLE
<b>D</b>	Osteomalacia	<b>L</b>	Osteoporosis
<b>E</b>	Ankylosing spondylitis	<b>M</b>	Giant cell arteritis
<b>F</b>	Pseudogout	<b>N</b>	Dermatomyositis
<b>G</b>	Rheumatoid arthritis	<b>O</b>	Psoriatic arthritis
<b>H</b>	Sjögren's syndrome		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 6</b>	A 32 year old lady has a three-year history of intermittent joint pains, fatigue, poor sleep and altered mood. She has been extensively investigated over the years. All investigations have been normal.
<b>Question 7</b>	Two days after abdominal surgery, a 78 year old man develops sudden-onset pain and swelling affecting his right wrist and right hand.
<b>Question 8</b>	A 45 year old lady had pain and swelling affecting her wrists, ankles and knees. She also had dry eyes and a dry mouth, and her rheumatoid factor and antinuclear antibody were positive.
<b>Question 9</b>	A 60 year old man has pain around his hips and is unable to rise from a chair. He also has an erythematous facial rash, and a chest X-ray shows a nodule in the upper zones of the left lung.
<b>Question 10</b>	A 28 year old man presents with a painful swollen right knee. Two weeks ago, whilst in the Far East, he had a bout of diarrhoea.

## Options for questions 11–15

<b>A</b>	Rheumatoid arthritis	<b>I</b>	CCPD
<b>B</b>	Gout	<b>J</b>	Sjögren's syndrome
<b>C</b>	Giant cell arteritis	<b>K</b>	Osteoporosis
<b>D</b>	Reactive arthritis	<b>L</b>	Dermatomyositis
<b>E</b>	SLE	<b>M</b>	Psoriatic arthritis
<b>F</b>	Limited scleroderma	<b>N</b>	Polymyalgia rheumatica
<b>G</b>	Diffuse scleroderma	<b>O</b>	Osteomalacia
<b>H</b>	Ankylosing spondylitis		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 11</b>	A 68 year old man presents with pain and swelling affecting his left knee. An X-ray shows chondrocalcinosis, and fluid aspiration from the joint shows a raised neutrophil count and rhomboid-shaped positively birefringent crystals.
<b>Question 12</b>	A 35 year old lady presents with pain and swelling affecting her wrists and MCP joints of both hands. She has morning stiffness. Her rheumatoid factor is negative.
<b>Question 13</b>	A 52 year old lady presents with pain affecting her left foot after a 10-mile walk two days ago. She is slim built and a smoker. X-ray of the foot is reported as "No obvious abnormality". A DEXA scan shows a T-score of -2.5.
<b>Question 14</b>	A 30 year old lady has Raynaud's phenomenon, reflux symptoms, and pain and stiffness in the small joints of her hands. On examination the skin over her fingers is shiny and she has facial telangiectasia. Antinuclear antibody is positive and anti-centromere antibody is positive.
<b>Question 15</b>	A 32 year old lady has gritty eyes and joint pains. Her antinuclear antibody is positive but double-stranded DNA binding is normal. Ro and La antibodies are positive.

## Options for questions 16–20

<b>A</b>	Gout	<b>I</b>	Sjögren's syndrome
<b>B</b>	Giant cell arteritis	<b>J</b>	Polymyositis
<b>C</b>	Reactive arthritis	<b>K</b>	Rheumatoid arthritis
<b>D</b>	Fibromyalgia	<b>L</b>	Dermatomyositis
<b>E</b>	Limited scleroderma	<b>M</b>	Psoriatic arthritis
<b>F</b>	Diffuse scleroderma	<b>N</b>	Polymyalgia rheumatica
<b>G</b>	Ankylosing spondylitis	<b>O</b>	SLE
<b>H</b>	Pseudogout		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 16</b>	A 63 year old man presents with pain in his shoulders and features of claudication affecting his right leg. About six months ago he had a three-week episode of right-sided headache.
<b>Question 17</b>	A 38 year old lady presents with polyarthralgia for the last five months and a strongly positive anti-CCP antibody.
<b>Question 18</b>	A 32 year old man has pain and swelling affecting the left knee, right wrist and left shoulder. His symptoms have been present for the last three weeks and he also complained of burning micturition. Plasma viscosity and CRP were raised.
<b>Question 19</b>	A 52 year old nurse presents with a history of pain affecting both shoulders and hands. On examination the joints were not inflamed but she was tender over the back of her neck, between the shoulder blades, over the tips of both shoulders, and around the trochanteric bursa.
<b>Question 20</b>	A 48 year old man presents with pain in his left ankle, right wrist and the lower part of the lumbar spine. Plasma viscosity and CRP were normal. Clinical examination shows slight puffiness around the left ankle and pitting of the nails.

## Options for questions 21–25

<b>A</b>	Rheumatoid arthritis	<b>I</b>	Pseudogout
<b>B</b>	Gout	<b>J</b>	Sjögren's syndrome
<b>C</b>	Giant cell arteritis	<b>K</b>	Polymyositis
<b>D</b>	Reactive arthritis	<b>L</b>	Dermatomyositis
<b>E</b>	SLE	<b>M</b>	Psoriatic arthritis
<b>F</b>	Fibromyalgia	<b>N</b>	Polymyalgia rheumatica
<b>G</b>	Scleroderma	<b>O</b>	Osteomalacia
<b>H</b>	Ankylosing spondylitis		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 21</b>	A 78 year old man presents with long-standing joint pains. On examination he has swelling around the distal interphalangeal joints of both hands with small chalky nodules around the PIP joints. He also has left olecranon bursitis and a whitish chalky nodule on his left ear.
<b>Question 22</b>	A 26 year old lady presents with polyarthralgia affecting her hands and wrists. She also gives a history of Raynaud's phenomenon and on examination has a right-sided pleural effusion.
<b>Question 23</b>	A 54 year old lady presents with shortness of breath. On investigation her lung functions show a marked reduction in diffusion capacity and an echocardiogram is suggestive of pulmonary artery hypertension. She has a background history of pain and stiffness affecting her hands for many years.
<b>Question 24</b>	A 42 year old lady complains of pain in her shoulder muscles for one year. On investigations her CRP is raised and autoantibody screen is positive for Jo-1.
<b>Question 25</b>	A 38 year old man presents with pain in his right heel. On examination the Achilles tendon is tender and swollen. On further questioning, he says that he has had iritis in the past and that his neck has always been "very stiff with little movement".

## Options for questions 26–30

<b>A</b>	Rheumatoid arthritis	<b>I</b>	Pseudogout
<b>B</b>	Gout	<b>J</b>	Sjögren's syndrome
<b>C</b>	Giant cell arteritis	<b>K</b>	Polymyositis
<b>D</b>	Reactive arthritis	<b>L</b>	Osteoporosis
<b>E</b>	SLE	<b>M</b>	Dermatomyositis
<b>F</b>	Fibromyalgia	<b>N</b>	Psoriatic arthritis
<b>G</b>	Scleroderma	<b>O</b>	Polymyalgia rheumatica
<b>H</b>	Ankylosing spondylitis		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 26</b>	A 72 year old lady presents with a history of multiple joint pains. She has also attended the gynaecology department for dyspareunia. Her CRP and plasma viscosity are raised.
<b>Question 27</b>	A 68 year old man presents with a history of intermittent pain and swelling of the right wrist. An X-ray of the wrist is reported as showing "degenerative changes and calcification of the triangular ligament".
<b>Question 28</b>	A 48 year old lady presents with pain and an effusion in her right knee. She has a long-standing history of joint pains and on examination her right knee is swollen. She also has swelling around her wrists with very little flexion and extension at both wrists, and swelling around both ankles.
<b>Question 29</b>	A 62 year old lady fractured her neck of femur after a fall. All her blood tests are normal.
<b>Question 30</b>	A 53 year old lady presents with some pain and discomfort in her fingers. On examination she has reddish papules over the metacarpophalangeal and proximal interphalangeal joints. She has also had symptoms of muscle pains.



## Options for questions 31–35

<b>A</b>	Rheumatoid arthritis	<b>I</b>	Pseudogout
<b>B</b>	Gout	<b>J</b>	Sjögren's syndrome
<b>C</b>	Giant cell arteritis	<b>K</b>	Polymyositis
<b>D</b>	Reactive arthritis	<b>L</b>	Osteoporosis
<b>E</b>	SLE	<b>M</b>	Dermatomyositis
<b>F</b>	Fibromyalgia	<b>N</b>	Psoriatic arthritis
<b>G</b>	Scleroderma	<b>O</b>	Polymyalgia rheumatica
<b>H</b>	Ankylosing spondylitis		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 31</b>	A 28 year old man has a ten-year history of low back pain. An X-ray shows sclerosis of the sacroiliac joints.
<b>Question 32</b>	A 50 year old obese alcoholic complains of severe pain in his right foot which is exacerbated by wearing socks. On examination, his big toe is warm and extremely tender to touch.
<b>Question 33</b>	A 42 year old man has had intermittent pain affecting various joints. He also has a scaly rash on his elbows and knees. Investigations show a low haemoglobin, white cells normal and platelets are high.
<b>Question 34</b>	A 28 year old lady has a two-year history of intermittent widespread body pain. Investigations reveal low haemoglobin, white cell count and platelets. Plasma viscosity and CRP are raised.
<b>Question 35</b>	A 46 year old lady is referred to Rheumatology because of a high FRAX score.

## Options for questions 36–40

<b>A</b>	Temporal artery biopsy	<b>I</b>	Schirmer's test
<b>B</b>	Serum phosphate	<b>J</b>	Serum calcium
<b>C</b>	ANA	<b>K</b>	DEXA scan
<b>D</b>	ANCA	<b>L</b>	MRI scan
<b>E</b>	CT scan	<b>M</b>	CRP
<b>F</b>	Synovial joint aspiration	<b>N</b>	ALP
<b>G</b>	Rheumatoid factor	<b>O</b>	PET scan
<b>H</b>	Ultrasound		

For each of the clinical scenarios / statements below, please match the single most appropriate investigation. Each option may be used only once.

<b>Question 36</b>	A 35 year old lady presents with a six-month history of pain and swelling affecting the small joints of her hands and feet.
<b>Question 37</b>	A 52 year old Caucasian man complains of painful legs, as well as hearing loss and a constant ringing sound in his ears. His wife claims that his head looks larger in size compared to before.
<b>Question 38</b>	A 55 year old lady has a two week history of sudden-onset stiffness of her shoulders and she finds it very difficult to get out of a chair.
<b>Question 39</b>	A 62 year old lady develops sudden-onset severe pain between her shoulder blades after lifting heavy shopping. An X-ray is suggestive of a wedge fracture at T.4.
<b>Question 40</b>	A 28 year old female presents with a gritty sensation in her eyes as well as a dry mouth and swelling around her cheeks.

## Options for questions 41–45

<b>A</b>	Gout	<b>I</b>	Osteoporosis
<b>B</b>	Giant cell arteritis	<b>J</b>	Dermatomyositis
<b>C</b>	Ankylosing spondylitis	<b>K</b>	Sjögren's syndrome
<b>D</b>	Pseudogout	<b>L</b>	Polymyositis
<b>E</b>	Reactive arthritis	<b>M</b>	Psoriatic arthritis
<b>F</b>	SLE	<b>N</b>	Polymyalgia rheumatica
<b>G</b>	Fibromyalgia	<b>O</b>	Rheumatoid arthritis
<b>H</b>	Scleroderma		

For each of the clinical scenarios / statements below, please match the single most likely condition. Each option may be used only once.

<b>Question 41</b>	A 56 year old lady has attended the Rheumatology Clinic for the last seven years and has been on treatment. She continues to have painful swollen joints. Her DAS score is 5.8 and she has been considered for anti-TNF therapy.
<b>Question 42</b>	A 46 year old lady attends the Rheumatology Clinic. She has no pain or swelling in any joints but is being considered for treatment with alendronate.
<b>Question 43</b>	A 60 year old man was sent to Rheumatology six months ago with bilateral shoulder pain. Since then he has been on a (reducing) dose of prednisolone.
<b>Question 44</b>	A 38 year old man attends the Rheumatology Clinic regularly. He is on painkillers and febuxostat.
<b>Question 45</b>	A 40 year old man attends the Rheumatology Clinic for joint pains. He also has a long-standing skin rash over his back and scalp, and is on methotrexate.

## Options for questions 46–50

<b>A</b>	ANA	<b>I</b>	Anti-SLA
<b>B</b>	c-ANCA	<b>J</b>	Anti-centromere
<b>C</b>	RF	<b>K</b>	Anti-cardiolipin
<b>D</b>	Anti-SCL 70	<b>L</b>	p-ANCA
<b>E</b>	Anti-CCP	<b>M</b>	Anti-Jo1
<b>F</b>	Anti-Mi2	<b>N</b>	Anti-RNA polymerase 1 and 3
<b>G</b>	Anti-dsDNA	<b>O</b>	Anti-TPO
<b>H</b>	Anti-Ro		

For each of the clinical scenarios / statements below, please match the single most appropriate autoantibody. Each option may be used only once.

<b>Question 46</b>	A 42 year old woman complains that her fingers often change colour. She also has dry eyes and a dry mouth. A lip biopsy reveals infiltration of lymphocytes.
<b>Question 47</b>	A 25 year old asthmatic patient presents with a purpura skin lesion, and pain and paraesthesia in one of her legs.
<b>Question 48</b>	A 35 year old lady complains of recurrent nose bleeds, shortness of breath and haemoptysis. Her blood pressure is noted to be high and a urine dipstick reveals microscopic haematuria.
<b>Question 49</b>	A 50 year old lady presents with a 2 month history of pain and swelling affecting the small joints of her hands and feet. She has morning stiffness in her joints which lasts over an hour.
<b>Question 50</b>	A 28 year old woman complains of previously intermittent polyarthralgia, a facial rash and three previous miscarriages. Her antinuclear antibody has been reported as positive.

# Answers to questions

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# Answers to single best answer (SBA) questions

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**1. Answer is E.**

The core inclusion criteria for diagnosing polymyalgia rheumatica according to ACR/EULAR criteria are in options A–D: Age >50 years, bilateral shoulder pain and abnormal ESR/CRP, morning stiffness duration of >45 min, hip pain or limited range of motion; absence of RF or anti-cyclic citrullinated peptide antibodies (anti-CCP), as well as absence of other joint pain. Although weight loss is an important sign of polymyalgia rheumatica, it is not a core inclusion criterion. (See *Section 2.11*)

**2. Answer is D.**

The answer is not A, since polymyalgia does not cause muscle weakness and also tends to have a proximal muscle distribution along both shoulder girdles (90%). The answer is not B since there is no breakdown of muscles in PMR (unlike in polymyositis) and therefore there is no release of creatine phosphokinase from muscle cells and hence no elevation of creatine phosphokinase in the serum. The answer is not C, as there is no association between PMR and malignancy. As mentioned, weight loss is an important sign of PMR. The answer is not E, since PMR mainly occurs in those over the age of 50. (See *Section 2.11*)

**3. Answer is B.**

Pain and stiffness in both shoulders is the central clinical feature of PMR. Significant loss of weight and appetite is an important sign of PMR, as is lethargy. The significantly high ESR and anaemia of chronic disease confirms an inflammatory process which is central to the pathogenesis of PMR. The patient's age (>50) is also a very important risk factor for PMR. Patients with PMR may have a positive RF which is an association and not indicative of rheumatoid arthritis (false positive result). The clinical features in this man do not strongly resemble any of the other options and hence these are not correct. PAN often presents with abdominal pain, hypertension and features of vasculitis. PM presents with proximal muscle weakness (rather than stiffness). RA presents with small joint pain and swelling, typically in the wrists and hands or ankles and feet. SLE presents with features such as polyarthralgia, rash, and Raynaud's phenomenon. (See *Section 2.11*)

**4. Answer is D.**

The answer is not A, since ESR is commonly raised in GCA ( $\geq 50$  mm/hour) and is one of the key diagnostic criteria according to the American College of Rheumatology (ACR), although it is important to note that disease in the presence of normal inflammatory markers has been reported. Although unilateral headache is more common, bilateral headache can occur and B is therefore not the answer. The answer is not C because whilst the temporal arteries may be tender on palpation, this is not always the case. The answer is D since papilloedema is not a sign of GCA and instead points towards raised intracranial pressure as the cause of the headache. Lastly, the answer is not E since GCA almost always occurs in those over the age of 50. (See *Section 2.10*)

**5. Answer is A.**

Evidence from randomized controlled trials suggests that bisphosphonates are far superior as prophylactic agents against glucocorticoid-induced osteoporosis, compared to options B–E. Hence this is the **most** appropriate treatment option. (See *Section 5.2*)

**6. Answer is D.**

According to the American College of Rheumatology revised criteria, this woman has four key features of SLE and therefore the answer is D. The ACR criteria for SLE can easily be remembered using the mnemonic '**MS BRAIN**' (See *Section 2.12*).

**7. Answer is C.**

Dry mouth, parotid swelling and dry eyes are all typical features of Sjögren's syndrome and therefore the answer is not A, B or D. Aphthous mouth ulcers are not a clinical feature of Sjögren's syndrome and therefore the answer is C. Raynaud's phenomenon occurs in approximately 20% of individuals with Sjögren's syndrome. (See *Section 2.14*)

**8. Answer is A.**

The answer is A since the clinical features and investigations point towards a diagnosis of antiphospholipid syndrome (APS). The features of antiphospholipid syndrome are ('**CLOT**'): **C**oagulation defects – arterial or venous thrombosis, **L**ivedo reticularis, **O**bstetric problems – miscarriage, and **T**hrombocytopenia. This woman has livedo reticularis and the right flank pain could be a sign of ectopic pregnancy or alternatively renal vessel thrombosis. The low platelet count signifies thrombocytopenia. Overall, taking into account these findings, it is very likely that this lady has APS. Therefore, anti-cardiolipin is most likely to be positive in this woman. (See *Section 2.12, Box 2.12.2*)

**9. Answer is D.**

From the history, a strong suspicion of acute gout should be raised from the clinical features (swollen, red, hot, tender foot) as well as the risk factors (alcohol, middle-aged and male) in the absence of injury or any other provoking factor. Although colchicine can be used to treat acute gout, it is not first-line and therefore A is not the best option. Allopurinol is used to prevent gout but is not used to treat an acute episode, since it can precipitate further attacks, and therefore B is incorrect. Morphine may help with the pain, but it will not help with the inflammatory process and therefore C is not correct. A strong NSAID such as naproxen is first-line for the treatment of gout and so D is the correct answer. Antibiotics such as amoxicillin have no role in the treatment of gout, since it is an inflammatory process and not an infective one; hence E is incorrect. (See *Section 2.7*)

**10. Answer is C.**

From the clinical picture, it is clear that this patient has renal impairment causing nephrotic syndrome (pitting oedema, 24 hr urinary total protein 2.3 g). The answer is not A since there are no specific signs of SLE present (remember '**MS BRAIN**'). The answer is not B since IgA nephropathy is usually associated with upper respiratory tract symptoms. Renal vasculitis is associated with blood and protein in the urine and the level of urinary protein is usually not as high as in this case. Amyloidosis may give rise to nephrotic syndrome but this usually occurs in long-standing conditions and not just over a few weeks. NSAIDs can cause acute intrinsic renal failure (interstitial nephritis) and therefore answer C is the best option. (See *Section 5.1*)

**11. Answer is A.**

This woman has the following clinical features which are characteristic of rheumatoid arthritis (see 2010 ACR and EULAR criteria): involvement of **small joints of the hands** (especially MCP joints), **symmetrical joint involvement**, **morning stiffness >1 hour**, and **present for >6 weeks**. Her age and gender are also risk factors for RA. Therefore, the answer is clearly A. (See *Section 2.1*)

**12. Answer is E.**

Rheumatoid factor levels are sensitive to rheumatoid arthritis but are not specific, and hence A is incorrect. Although X-rays are useful, and should be performed on affected joints, X-rays are only likely to show soft tissue swelling early in the disease course, and hence B is incorrect. CRP is raised in many infective and inflammatory conditions and is therefore not specific to rheumatoid arthritis. CT scans have no use in the diagnosis of RA and therefore D is not an option, but may be used to investigate interstitial lung disease, if indicated as an extra-articular manifestation. Anti-CCP levels are the most specific to rheumatoid arthritis and so E is the correct answer. (See *Section 2.1*)

**13. Answer is A.**

The diagnosis of septic arthritis should immediately be confirmed with joint aspiration for microscopy and Gram staining; however, empirical antibiotics should be started whilst waiting for synovial fluid joint analysis. If septic arthritis is confirmed, treatment should not be delayed as this can lead to irreversible joint destruction! Antibiotics and washout are also required once antibiotics are commenced. (See *Section 2.3*)

**14. Answer is C.**

Dry eyes and dry mouth are key presenting features of Sjögren's syndrome (SS) and therefore the diagnosis immediately points towards SS. Systemic features such as a rash and polyarthralgia may also be present in SS. Positive ANA and anti-Ro antibodies confirm that this is indeed a case of Sjögren's syndrome. Although Sjögren's syndrome can occur secondary to RA, there is no symmetrical small joint arthropathy to suggest that RA is the underlying cause. (See *Section 2.14*)

**15. Answer is C.**

The answer is not A, since diabetes mellitus does not present with any of the signs this man has apart from a foot drop secondary to diabetic neuropathy. Wegener's granulomatosis (WG) can present with nasal congestion, breathlessness and cough since it affects the upper respiratory tract and lung fields, but wheeze is not a common feature of WG. The answer is C since Churg–Strauss syndrome (CSS) classically presents with mononeuritis multiplex (which would explain the foot drop) as well as asthma (which would explain the breathlessness, cough and wheeze). Foot drop is not a sign of pulmonary eosinophilia and respiratory symptomatology does not occur in polyarteritis nodosa. Therefore options D and E can effectively be ruled out. (See *Section 2.9*)

**16. Answer is C.**

Wegener's granulomatosis (WG) affects the upper respiratory tract and can cause epistaxis and haemoptysis as a result. WG also affects the kidneys to cause nephritic



syndrome, hence the positive haematuria present on urine dipstick. Furthermore, it can present with palpable purpura. Although HSP and MPA share common clinical features to WG, the positive c-ANCA distinguishes them since it is very specific to WG. (See *Section 2.9*)

**17. Answer is A.**

ANCA is positive with Churg–Strauss syndrome (CSS). Most of these patients are perinuclear-ANCA (p-ANCA) positive. (See *Section 2.9*)

**18. Answer is C.**

This man fits 4/6 criteria proposed by ACR/EULAR for a clinical diagnosis of giant cell arteritis (GCA): age at disease onset  $\geq 50$  years, new headache (localized pain in the head), temporal artery abnormality (tenderness to palpation or decreased pulsation) and elevated inflammatory markers (in this case CRP). Therefore, the most appropriate treatment is immediate oral prednisolone to prevent vision loss. (See *Section 2.10*)

**19. Answer is E.**

Behçet's disease is a systemic vasculitis of unknown cause which is more common in Turkish individuals. The aphthous ulcers, genital ulcers, ocular involvement (which is probably due to uveitis) and erythema nodosum are highly characteristic of Behçet's disease. All of these clinical features together do not resemble any of the other options listed. Also, the normal inflammatory marker further confirms this notion since the other options are likely to present with raised inflammatory markers. (See *Section 2.9*)

**20. Answer is B.**

High-dose steroids are required to induce remission in WG. Although cyclophosphamide is often used, it is not the first-line treatment and instead it is given in conjunction with steroids. (See *Section 2.9*)

**21. Answer is C.**

The low haemoglobin and raised plasma viscosity suggest an ongoing inflammatory process. The muscle weakness and markedly raised CK point to an inflammatory process that has an effect on the muscles, and therefore make options C and D highly likely. The absence of skin involvement points to the diagnosis of polymyositis rather than dermatomyositis (in which there is always skin involvement). CK is never raised to such a high level in any of the other conditions listed. (See *Section 2.13*)

**22. Answer is A.**

The clinical picture (polyarthralgia, mouth ulcers, and butterfly rash in someone of Afro-Caribbean background) is highly suggestive of SLE. ANA is the most sensitive test for SLE and it is therefore the most appropriate option from the list. (See *Section 2.12*)

**23. Answer is A.**

Infections are a common complication and are the commonest cause of death in all stages of SLE. Patients are not only prone to the ordinary bacterial and viral infections, but are also susceptible to fungal and parasitic infections, due to an impaired immune system. Corticosteroid and immunosuppressant drug treatments used for SLE also increase the risk for infections. (See *Section 2.12*)

**24. Answer is C.**

All of the features mentioned fit in with a diagnosis of limited systemic sclerosis or CREST syndrome. SLE does not present with GORD or with thickened skin, and so option A is very unlikely. Sjögren's syndrome most commonly presents with dry eyes, dry mouth and parotid swelling. These features are not present and so B can be effectively ruled out. Mixed connective tissue disease does not present with GORD and RA does not classically present with any of the clinical features this lady has, apart from the swollen PIP joints. (See *Section 2.15*)

**25. Answer is B.**

Features of photosensitivity and mouth ulcers point to SLE or SLE-linked syndromes. Recurrent miscarriages and familial PEs suggest thrombotic events. The combination of these two features would act as an alert for the antiphospholipid syndrome, which is characterized by the presence of anti-cardiolipin antibodies. (See *Section 2.12*, *Box 2.12.2*)

**26. Answer is E.**

The knee pain, burning pain when urinating and red itchy eye suggest that this man is suffering from arthritis, urethritis and conjunctivitis simultaneously. This triad suggests Reiter's syndrome, which falls under reactive arthritis. The painful left heel is probably due to plantar fasciitis which is also a feature of reactive arthritis. Given the man's age and specific clinical presentation, the symptoms are very unlikely to be due to the other options listed. (See *Section 2.6*)

**27. Answer is A.**

The clinical picture is highly suggestive of osteoarthritis. The classical X-ray signs of osteoarthritis are 'LOSS' – Loss of joint space, Osteophytes, Subchondral cysts and Subchondral sclerosis. Therefore, A is the most appropriate option. (See *Section 2.2*)

**28. Answer is D.**

Osteoporosis exists when the T-score is reduced by more than 2.5 standard deviations below that observed in young healthy adults. (See *Section 2.17*)

**29. Answer is A.**

The first-line treatment for osteoporosis is a bisphosphonate. Of the four listed (A, B, C and E) alendronic acid is recommended as the first drug of choice by NICE, based on clinical efficacy and cost-effectiveness. (See *Section 2.17*)

**30. Answer is A.**

This patient has osteopenia since she has a T-score which falls between –1 and –2.5. Therefore, appropriate lifestyle changes such as exercise and vitamin D supplementation will be sufficient until she is reviewed further. (See *Section 2.17*)

# Answers to extended matching questions (EMQs)

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**1. Answer is B.**

Although gout may affect the first MTP joint, it can also commonly affect the mid-tarsal joints and the ankle. The history of alcohol intake would also fit with a diagnosis of gout. (See *Section 2.7*)

**2. Answer is E.**

All the features listed are typical of SLE. (See *Section 2.12*)

**3. Answer is L.**

The highly raised CK indicates muscle disease, which together with involvement of proximal muscles would suggest polymyositis. (See *Section 2.13*)

**4. Answer is I.**

Sacroiliac pain is suggestive of sacroiliitis. This, combined with iritis, is often found in patients with ankylosing spondylitis. (See *Section 2.5*)

**5. Answer is C.**

Left-sided temporal headache is highly suggestive of giant cell arteritis (temporal arteritis). The jaw pain is due to jaw claudication, which is a feature of this condition. A negative temporal biopsy should be repeated in individuals with suspected temporal arteritis, since lesions may be missed due to the presence of skip lesions. (See *Section 2.10*)

**6. Answer is B.**

The clinical features are consistent with fibromyalgia. This is reinforced by the fact that her investigations have all been normal. (See *Section 2.17*)

**7. Answer is F.**

Surgery often precipitates pseudogout, which can affect the wrists. Subsequent inflammation can cause soft tissue swelling in the adjacent areas. (See *Section 2.8*)

**8. Answer is H.**

Dry eyes and dry mouth are typical of Sjögren's syndrome. Arthralgia is another associated clinical feature and patients with Sjögren's syndrome are often positive both for rheumatoid factor and antinuclear antibody. (See *Section 2.14*)

**9. Answer is N.**

Inability to rise from a chair indicates proximal muscle myopathy, which together with an erythematous facial rash would suggest dermatomyositis. This condition may be associated with underlying malignancy, especially in the lung. (See *Section 2.13*)

**10. Answer is J.**

A painful swollen knee suggests an inflammatory process. A preceding history of diarrhoea two weeks ago makes it likely that this is reactive to an enteropathic infection and therefore this man is most likely to have reactive arthritis. (See *Section 2.6*)

**11. Answer is I.**

Chondrocalcinosis and positively birefringent crystals on polarized light microscopy are indicative of calcium pyrophosphate and therefore CPPD. (See *Section 2.8*)

**12. Answer is A.**

The distribution of joint involvement is typical of rheumatoid arthritis. Approximately 30% of patients with rheumatoid arthritis may be rheumatoid factor negative. (See *Section 4.2, Table 4.2.1*)

**13. Answer is K.**

A T-score of  $-2.5$  meets the criteria for the diagnosis of osteoporosis. It is likely that the pain in the foot was caused by a stress fracture due to unaccustomed activity. (See *Section 2.17*)

**14. Answer is G.**

Shiny, taut skin over the hands, Raynaud's phenomenon and reflux symptoms fit in with scleroderma. Anti-centromere antibody and telangiectasia suggest a variant of scleroderma – CREST syndrome (limited scleroderma). Patients with this syndrome may present with some or all of the following features: calcinosis, Raynaud's phenomenon, oesophageal dysmotility, sclerodactyly, and telangiectasia. (See *Section 2.17*)

**15. Answer is J.**

Ro and La antibodies are frequently positive in patients with Sjögren's syndrome. Gritty eyes are due to dryness of the conjunctiva. There may be other symptoms due to dryness of other mucous membranes (for example dryness of the mouth). (See *Section 2.14*)

**16. Answer is B.**

GCA can affect the temporal arteries but may also affect other arteries due to arteritis. Other arteries that may be involved include the aortic arch, subclavian and femoral arteries. (See *Section 2.10*)

**17. Answer is K.**

Positive CCP antibody is highly specific for rheumatoid arthritis in this clinical context. (See *Section 2.1*)

**18. Answer is C.**

Raised inflammatory markers suggest an inflammatory process and urinary symptoms, along with asymmetrical oligo-articular joint involvement, would fit with reactive arthritis. (See *Section 2.6*)

**19. Answer is D.**

Clinically there are no features of an inflammatory arthropathy. The tender points are consistent with fibromyalgia. (See *Section 2.17*)

**20. Answer is M.**

Pitting of the nails is seen in psoriasis. Asymmetrical oligo-articular involvement is consistent with psoriatic arthritis. Inflammatory markers may not always be elevated in this condition. (See *Section 2.4*)

**21. Answer is B.**

Chronic gout is polyarticular and the subcutaneous nodules around the fingers and ears represent tophi. Olecranon bursitis can occur in gout. (See *Section 2.7*)

**22. Answer is E.**

The three clinical features described fit with connective tissue disease. Pleural effusion is commoner in SLE than in scleroderma. (See *Section 2.12*)

**23. Answer is G.**

Pulmonary artery hypertension occurs in scleroderma. Lung functions can show a reduction in diffusion capacity and the long-standing history of 'stiffness in her hands' would suggest scleroderma. (See *Section 2.15*)

**24. Answer is K.**

The raised CRP indicates an inflammatory process. Jo-1 antibody is found in polymyositis. This would fit with her clinical picture. (See *Section 2.13*)

**25. Answer is H.**

Achilles tendinitis and enthesitis occur with ankylosing spondylitis. Iritis is another feature. Very limited movements of the spine in a young person would also suggest ankylosing spondylitis. (See *Section 2.5*)

**26. Answer is J.**

The raised inflammatory markers suggest an underlying inflammatory process. Dyspareunia could occur because of drying of the mucosal membranes, which is a feature of Sjögren's syndrome. (See *Section 2.14*)

**27. Answer is I.**

Pseudogout often coexists with osteoarthritis ("degenerative changes"). Calcification of the triangular ligament in the wrist is a typical feature of this condition (as is chondrocalcinosis in the knee). (See *Section 2.8*)

**28. Answer is A.**

Involvement of wrists and ankles bilaterally is highly suggestive of rheumatoid arthritis. It is likely that she has had this for some time now and her recent presentation is because of her flare. (See *Section 2.1*)

**29. Answer is L.**

Low velocity forces or low trauma fractures are highly suggestive of osteoporosis. Blood tests in osteoporosis are usually normal. (See *Section 2.17*)

**30. Answer is M.**

Reddish macular papular lesions or violaceous lesions over the fingers are suggestive of Gottron's sign. Muscle pains would indicate myositis. Together, both features suggest dermatomyositis. (See *Section 2.13*)

**31. Answer is H.**

The long history, male patient and sclerosis of the sacroiliac joints are highly suggestive of ankylosing spondylitis. (See *Section 2.5*)

**32. Answer is B.**

This is a typical presentation of gout with some of the typical risk factors. (See *Section 2.7*)

**33. Answer is N.**

The low haemoglobin is suggestive of anaemia of chronic disease. A rise in platelets is often seen in an inflammatory process, and the time and distribution of the rash would fit with psoriasis. Therefore, this man has psoriatic arthritis. (See *Section 2.4*)

**34. Answer is E.**

Pancytopenia and raised inflammatory markers in this clinical context would suggest SLE. (See *Section 2.12*)

**35. Answer is L.**

A FRAX score is more specific than a T-score. A T-score of  $-2.5$  is diagnostic of osteoporosis. A FRAX score includes a number of parameters, including T-score, to provide a risk of fracture in individual cases. (See *Section 2.17*)

**36. Answer is G.**

This lady most likely has rheumatoid arthritis. This is because rheumatoid arthritis typically affects the small joints and is symmetrical and peripheral. Therefore testing for positive rheumatoid factor is the most appropriate investigation from the list. (See *Section 2.1*)

**37. Answer is N.**

Bone pain, hearing loss and tinnitus as well as enlargement of the skull should raise suspicion of Paget's disease of the bone. A bone-specific ALP blood test should thus be performed. (See *Section 2.18*)

**38. Answer is M.**

Sudden onset stiffness in the shoulders and pelvic girdle is typical of PMR. Therefore, the demonstration of an acute phase response would support this via the measurement of CRP. (See *Section 2.11*)

**39. Answer is K.**

The combination of sudden onset back pain after lifting suggests osteoporosis in a female of this age. The X-ray confirms the characteristic wedge fracture of osteoporosis but the condition cannot be diagnosed without a DEXA scan. (See *Section 2.17*)

**40. Answer is I.**

Dry eyes, dry mouth and parotid swelling are the cardinal features of Sjögren's syndrome. The suspicion of dry eyes should be confirmed by a Schirmer's test. (See *Section 2.14*)

**41. Answer is O.**

A high DAS (Disease Activity Score) is indicative of active disease. Patients with rheumatoid arthritis who have failed to be controlled on two disease-modifying agents and who continue to have a high DAS score may be considered for treatment with anti-TNF therapy. (See *Section 2.1*)

**42. Answer is I.**

Alendronate is a bisphosphonate and is first-line treatment for osteoporosis.  
(See *Section 2.17*)

**43. Answer is N.**

Shoulder girdle and pelvic girdle discomfort, along with stiffness, occurs in PMR. The treatment of choice in this condition is steroid therapy. (See *Section 2.11*)

**44. Answer is A.**

Febuxostat is a drug that is used to reduce the uric acid level and is used if patients cannot tolerate allopurinol, or if allopurinol is not sufficient to control gout.  
(See *Section 2.7*)

**45. Answer is M.**

Psoriatic arthritis. The distribution of the rash fits with psoriasis. Methotrexate is the treatment of choice in psoriatic arthritis. (See *Section 2.4*)

**46. Answer is H.**

This is a typical presentation of Sjögren's syndrome. The lip biopsy confirms this. The most specific antibody to Sjögren's syndrome is Anti-Ro. (See *Section 2.14*)

**47. Answer is L.**

Asthma, purpura skin lesions and mononeuritis multiplex (suggested by the asymmetrical pain and paraesthesia) are key features of Churg–Strauss disease and therefore p-ANCA is the autoantibody of choice. (See *Section 2.9*)

**48. Answer is B.**

This lady's symptoms of epistaxis, shortness of breath and haemoptysis are suggestive of upper airway disease and pulmonary airway disease. The findings of high blood pressure and microscopic haematuria are also highly suggestive of kidney involvement. Therefore, the classical triad of upper airway disease, pulmonary airway disease as well as kidney involvement (nephritic syndrome) point to a suspicion of Wegener's granulomatosis and therefore the most specific antibody to WG is c-ANCA. Wegener's granulomatosis is also called granulomatous polyangiitis (GPA). (See *Section 2.9*)

**49. Answer is E.**

The history is typical of RA. Positive CCP antibody is highly specific for rheumatoid arthritis and therefore is the most appropriate answer. (See *Section 2.1*)

**50. Answer is K.**

Anti-cardiolipin antibody. The rash, joint involvement and positive ANA all suggest SLE. Recurrent miscarriages occur in SLE with the antiphospholipid syndrome, in which anti-cardiolipin antibodies are positive. (See *Section 2.12*)