

Specialty Certificate in Rheumatology Sample Questions

Question 1

What is the chief biological function of hyaluronan (hyaluronic acid) in synovial joints?

- A facilitates the diffusion of glucose through water
- B inhibits complement activation
- C maintains a fluid film under persistent load
- D reduces the resistance to shear forces below that of water alone
- E retains water through its sulphated glycosaminoglycan residues

Question 2

How do synovial intimal macrophages differ from other macrophage subgroups?

- A arise locally rather than from bone marrow
- B express complement receptor II
- C express high levels of Fc gamma receptor IIIa
- D express major histocompatibility complex (MHC) class II
- E express parathyroid hormone receptors

Question 3

A 40-year-old man had severe pain in one leg affecting both the buttock region and the lateral border and sole of the foot, in association with paraesthesiae of the sole on walking.

What is the correct nomenclature for the nerve root from which these symptoms have arisen?

- A L4
- B L4/L5
- C L5
- D L5/S1
- E S1

Question 4

A 43-year-old woman, with recent-onset rheumatoid factor-positive inflammatory arthritis, was having 10-weekly intramuscular injections of sodium aurothiomalate. At week 10 she reported being "90% better".

On examination, her hand joints were much less puffy than before treatment and knee effusions had resolved. She had developed a shiny, slightly scaly erythematous plaque over the abdomen and two smaller patches on her limbs. Her serum C-reactive protein had fallen from 56 to 4 mg/L (<10).

What is the most appropriate next step in management?

- A continue sodium aurothiomalate and seek a dermatological opinion
- B continue sodium aurothiomalate and treat with topical hydrocortisone
- C reduce sodium aurothiomalate to 25 mg per week
- D stop sodium aurothiomalate
- E stop sodium aurothiomalate until the rash has settled and then reintroduce

Question 5

A 46-year-old man presented with a 2-week history of a worsening ulcerating rash over his lower limbs, which had coalesced in places. He also had right knee and left wrist synovitis. He had returned from a holiday in Portugal 4 weeks previously. He had ulcerative colitis that had been diagnosed the previous year, and was taking 5 mg prednisolone daily.

What is the most likely diagnosis?

- A discoid lupus
- B erythema nodosum
- C granuloma annulare
- D Lyme disease
- E pyoderma gangrenosum

Question 6

A 32-year-old woman, with severe psoriatic arthritis well-controlled with sulfasalazine and paracetamol, presented to clinic. She had just married and wished to conceive without risking a flare of her arthritis.

What is the most appropriate treatment strategy?

- A add oral prednisolone
- B continue sulfasalazine
- C stop sulfasalazine
- D stop sulfasalazine and change to oral prednisolone
- E stop sulfasalazine and start methotrexate and folic acid

Question 7

A 50-year-old woman was referred by an orthopaedic surgeon with a 2-month history of severe pain in her right knee, calf and foot. This had developed 1 week after an arthroscopic meniscectomy.

On examination, she was tearful and her right leg was swollen, dusky, cool and tender below the knee. She found light touch extremely painful and refused to have her knee fully examined.

Investigations:

serum C-reactive protein	3 mg/L (<10)
Doppler ultrasound scan	normal

What is the most likely diagnosis?

- A complex regional pain syndrome
- B deep venous thrombosis
- C popliteal artery dissection
- D septic arthritis
- E synovial leak

Question 8

A 24-year-old woman presented with acute pain and swelling of her right knee. She had been complaining of lower abdominal pain for the previous 3 days. On examination, her temperature was 37.9°C. The right knee was warm and tender with a tense effusion. Several pustules were seen on her right knee.

Investigations:

white cell count	16.4 × 10 ⁹ /L (4.0–11.0)
serum C-reactive protein	120 mg/L (<10)
synovial fluid analysis:	
appearance of fluid	turbid
white cell count	80 000/mL (<200)
neutrophil count	>90%
Gram stain	negative
crystals	absent
culture	negative

What is the most likely diagnosis?

- A enteropathic arthritis
- B gonococcal arthritis
- C reactive arthritis
- D rheumatoid arthritis
- E tuberculous arthritis

Question 9

A 20-year-old man of Turkish origin presented with a recurrent monoarthropathy. He also complained of attacks of intermittent fever, abdominal pain and pleuritic chest pain, and had noted an erythematous rash during these attacks.

What is the most likely diagnosis?

- A adult-onset Still's disease
- B Behçet's disease
- C familial Mediterranean fever
- D Henoch–Schönlein purpura
- E systemic lupus erythematosus

Question 10

A 48-year-old man presented with a 2-month history of arthralgia and a recurrent itchy rash over his trunk and limbs. On examination, he had urticarial lesions all over his trunk. He had started antihistamine therapy, but with no benefit. No other abnormalities were found on examination.

A skin biopsy showed a leucocytoclastic vasculitis and a diagnosis of urticarial vasculitis was made.

What is the most appropriate next treatment?

- A azathioprine
- B dapsone
- C hydroxychloroquine
- D naproxen
- E prednisolone

Question 11

A 61-year-old woman with long-standing rheumatoid arthritis presented with persistent leg ulcers. She was taking methotrexate. Infliximab had been stopped 2 months previously following the appearance of the leg ulcers.

On examination, there were bilateral shallow ulcers on the medial malleoli.

Investigations:

haemoglobin	98 g/L (115–165)
MCV	89 fL (80–96)
MCHC	35 g/dL (32–35)
white cell count	$4.8 \times 10^9/L$ (4.0–11.0)
neutrophil count	$1.0 \times 10^9/L$ (1.5–7.0)
platelet count	$180 \times 10^9/L$ (150–400)
erythrocyte sedimentation rate	60 mm/1st h (<30)
serum immunoglobulin G	23.0 g/L (6.0–13.0)
serum immunoglobulin A	1.2 g/L (0.8–3.0)
serum immunoglobulin M	2.3 g/L (0.4–2.5)
rheumatoid factor	48 kIU/L (<30)

What is the most likely diagnosis?

- A cryoglobulinaemia
- B delayed drug reaction to infliximab
- C Felty's syndrome
- D leucocytoclastic vasculitis
- E rheumatoid vasculitis

Question 12

A 65-year-old man presented with a 2-month history of pain affecting his lower back, radiating to his right calf and lateral aspect of his right foot. On examination, he had weakness of plantar flexion and eversion of his right foot. His right ankle jerk was also diminished.

What nerve root is most likely to be affected?

- A L2
- B L3
- C L4
- D L5
- E S1

Question 13

A 42-year-old man presented with a 6-month history of pain in his right upper arm that prevented him from working. On examination, there was flattening of the right deltoid contour with restriction of active and passive shoulder movements, and of neck movements.

What is the most likely cause of his pain?

- A adhesive capsulitis
- B cervical spondylosis
- C glenohumeral joint osteoarthritis
- D subacromial bursitis
- E supraspinatus tendonitis

Question 14

A 72-year-old man presented with a 6-month history of recurrent joint pain and swelling. His symptoms had begun with three attacks of arthritis affecting his right wrist, his left ankle and his right knee. The current attack was more widespread, affecting his hands, wrists, knees and ankles. He had also developed tender swelling over the extensor aspect of both elbows. His medical history included chronic renal impairment, type 2 diabetes mellitus, hypertension and heart failure. His current medication comprised bumetanide, spironolactone, lisinopril and simvastatin.

On examination, he was obese and had widespread synovitis and bilateral olecranon bursitis.

What investigation is likely to be most informative?

- A antinuclear antibodies
- B erythrocyte sedimentation rate
- C rheumatoid factor
- D serum urate
- E synovial fluid analysis

Answer keys:

1. C
2. C
3. E
4. D
5. E
6. B
7. A
8. B
9. C
10. E
11. C
12. E
13. A
14. E