

## MSK SBA Questions

Questions were made by students on behalf of The Peer Teaching Society. We hope there are no mistakes but are not liable for any false or misleading information.

1. A 23-year-old man presents to his GP with lower back pain and stiffness. He says that he is particularly stiff in the morning, but it gradually improves throughout the day with activity. The GP decides to examine him.

Which of the following tests would help the GP make a diagnosis?

- a) Buerger's test
- b) Romberg's test
- c) Shoer's test
- d) Trenseburg's test
- e) Unterberg's test

2. A patient with sickle cell anaemia presents to A&E with dull pain in their leg and fever. They are diagnosed with osteomyelitis.

What bacteria is most likely to be grown on their blood culture?

- a) Escherichia coli
- b) Pseudomonas aeruginosa
- c) Salmonella
- d) Staphylococcus epidermidis
- e) Staphylococcus aureus

3. A 17-year-old patient presents to their GP with dull bone pain, which has started waking them up at night. The X-ray report mentions an 'onion skin' appearance.

Which type of primary bone cancer would this be indicative of?

- a) Osteosarcoma
- b) Ewing's sarcoma
- c) Chondrosarcoma
- d) Rhabdomyosarcoma
- e) None of the above

4. A 40-year-old lady presents to her GP with fatigue, arthralgia, and hair loss. She also has a 'butterfly' shaped rash across her nose and cheekbones which gets worse in the sun. The GP orders a number of blood tests and subsequently diagnoses the patient with systemic lupus erythematosus.

What would the inflammatory markers, C-reactive protein (CRP) and Erythrocyte sedimentation rate (ESR), most likely have shown?

- a) Raised CRP and raised ESR
- b) Raised CRP and normal ESR
- c) Normal CRP and raised ESR
- d) Normal CRP and normal ESR
- e) None of the above

5. A 50-year-old obese man presents to A&E with a sudden onset of pain in his big toe. When the doctor inspects the toe, he sees it is red and swollen. The doctor decides to carry out joint fluid aspiration and microscopy.

What are the most likely findings of this investigation?

- a) Rhomboid shaped crystals that are positively birefringent under plane polarised light
- b) Normal joint fluid that shows no crystals
- c) Long needle shaped crystals that are negatively birefringent under plane polarised light
- d) Long needle shaped crystals that are positively birefringent under plane polarised light
- e) Rhomboid shaped crystals that are negatively birefringent under plane polarised light

6. Which of these is not seen in an X-ray of a joint affected by rheumatoid arthritis?

- a) Loss of joint space
- b) Soft tissue swelling
- c) Erosion
- d) Osteopenia
- e) Osteophytes

7. Which of these is not a risk factor for developing osteoporosis?

- a) Obesity
- b) Early menopause
- c) Hyperthyroidism
- d) Steroid use
- e) Renal failure

8. Which of the following is not seen in osteoarthritis?

- a) Heberden's nodes
- b) Bouchard's nodes
- c) Degenerative disease processes
- d) Morning stiffness lasting less than 30 minutes
- e) Symmetrical joint involvement

9. A 60-year-old Scottish male presents to his GP with left sided hearing loss over the past year. He has also been having severe pelvic pain for the past few weeks. His father died from heart failure at the age of 50.

Which of the following would be evident in his blood results?

- a) Raised ALP
- b) Raised Ca
- c) Raised phosphate
- d) Low ALP
- e) Raised parathyroid hormone related protein (PTHrP)

10. Which of the following vasculitides is most associated with the cANCA (cytoplasmic antineutrophilic cytoplasmic antibody)?

- a) Microscopic polyangitis
- b) Eosinophilic granulomatosis with polyangitis (Churg Strauss syndrome)
- c) Polyarteritis nodosa
- d) Granulomatosis with polyangitis (Wegener's granulomatosis)
- e) Giant cell arteritis

11. A 26-year-old woman presents to clinic with haematuria, severe fatigue and intermittent joint pain in her hands and feet. She is worried as she has recurrent mouth ulcers, and her hair is starting to fall out. On examination she has mild erythema over her cheeks and around her neck. Her mother has rheumatoid arthritis.

Which of the following are most sensitive for her most likely condition?

- a) Anti-ds DNA
- b) Lupus anticoagulant
- c) Anti-Smith
- d) ANA
- e) Rheumatoid factor

12. A 27-year-old presents to the OP gynaecology clinic due to recurrent miscarriages. She has had a past medical history of DVTs and one pulmonary embolism.

Her blood results show:

- APTT: 45 (27-35)
- PT: 13 (11-14)
- Platelets: 90 (150-400)

What is the most likely diagnosis?

- a) Von Willebrand disease
- b) Haemophilia A
- c) Antithrombin III deficiency
- d) Anti-phospholipid syndrome
- e) SLE

13. A 45-year-old woman attends your clinic complaining of "pain all over" her body that has been happening for the past year. She also further details that she commonly suffers for headaches and poor concentration.

Which of the following is this patient also likely to present with?

- a) Sleep Disturbance
- b) Carpal Tunnel Syndrome
- c) Dysphagia
- d) Raynaud's
- e) Fever

14. Which of the following is not a presentation of cauda equina syndrome?

- a) Progressive
- b) Bilateral Sciatica
- c) Perianal or perineal sensory loss
- d) Strong Anal Tone on PR
- e) New urinary or faecal retentions and/or incontinence

15. Which of the following is not a cause of Osteomalacia?

- a) Vitamin D Deficiency
- b) Renal Failure
- c) Inherited
- d) Liver Disease
- e) Alcoholism

16. Which of the following is the first line treatment for neuropathic pain?

- a) Amitriptyline
- b) Ondansetron
- c) Aspirin
- d) Lamotrigine
- e) Diazepam

MSK SBA Answers

Question	Answers
1. C	<p>This is a typical presentation of ankylosing spondylitis: a young man presenting with lower back pain and morning stiffness. Therefore, you are looking for a test that will examine the mobility of his spine.</p> <p>Schober's test is used to assess mobility of the spine. Ask the patient to stand straight and find the L5 vertebrae. Mark a point 10cm above and 5cm below the L5 vertebrae, then ask the patient to bend forward as far as they can. Measure the distance between the points - if the distance with them bending forwards is less than 20cm, this indicates a restriction in lumbar movement and will help support a diagnosis of ankylosing spondylitis.</p> <p>A - Buerger's test - part of a peripheral vascular examination. Assesses the adequacy of the arterial supply to the legs.</p> <p>B - Romberg's test - part of a neurological examination. Assesses for loss of proprioception / vestibular function.</p> <p>D - Trendelenburg's test - part of a hip examination. A positive Trendelenburg sign indicates weakness in the hip abductor muscles.</p> <p>E - Unterberg's test - part of a cranial nerves examination. Assesses the function of the vestibulocochlear nerve.</p>
2. C	<p>Staph. Aureus is the most common cause of osteomyelitis EXCEPT in patients with sickle cell anaemia where salmonella species predominate.</p> <p>E.coli / pseudomonas - causes of septic arthritis and osteomyelitis in IV drug users and immunocompromised patients.</p> <p>Staph. Epidermidis - cause of septic arthritis in patients with prosthetic joints.</p>
3. B	<p>Typical features you would see on an X-ray of a patient with Ewing's sarcoma are:</p> <ul style="list-style-type: none"> <li>● Lytic bone lesions</li> <li>● Onion skin appearance of the periosteum</li> </ul> <p>Osteosarcoma X-ray signs - 'sunray spiculation' appearance and Codman's triangle.            Chondrosarcoma X-ray signs - 'popcorn' calcifications, endosteal scalloping and lytic lesions.            Rhabdomyosarcoma - the most common soft tissue sarcoma in children.</p>
4. C	<p>ESR and CRP are inflammatory markers useful for diagnosing SLE. In active lupus, the ESR is usually elevated, but CRP remains normal (or only slightly raised).</p> <p>ESR and CRP would both be raised in an acute infection.</p>
5. C	<p>the patient in this case is most likely to be presenting with gout. Pseudogout would be expected if a bigger joint such as the knee was affected. The classic patient to present with gout is a middle-aged obese male that drinks lots of alcohol and eats a lot of red meat. Since the patient has gout C is the correct answer. If the patient had pseudogout you would expect to see A under a microscope.</p>
6. E	<p>To remember X-ray changes in rheumatoid arthritis you need to remember <b>LESS</b> which means <b>L</b>oss of joint space, <b>E</b>rosion, <b>S</b>oft tissue swelling and <b>S</b>oft bones (aka osteopenia). Therefore osteophytes (E) is the feature you would not see in rheumatoid arthritis.</p>
7. A	<p>to remember the risk factors of developing osteoporosis think of <b>SHATTERED</b>.  <b>S</b>teroid use</p>

	<p>Hyperthyroidism and hyperparathyroidism  Alcohol and tobacco  Thin – low BMI  Testosterone decrease leads to increased bone turnover  Early menopause  Renal or liver failure  Erosive/inflammatory bone disease  Dietary calcium decrease/Diabetes mellitus type 1</p>
8. E	<p>due to the degenerative nature of osteoarthritis the joint involvement is often asymmetrical. Symmetrical joint involvement is however commonly seen in rheumatoid arthritis.</p>
9. A	<p>Paget's disease is a disease of increased uncontrolled bone turnover. Primarily due to excessive osteoclast resorption (lytic phase), (mixed phase) and disorganised osteoblastic bone formation (sclerotic phase). Risk factors include older age, male, northern latitude, family history - although only 5% are symptomatic. Often affects skull, spine/pelvis, femur and tibia.</p> <p>The stereotypical presentation in exam papers is an older male with bone pain and a raised ALP. It can also cause deafness, skull thickening (can cause leontiasis ossea), fractures, osteosarcoma, Bloods show raised ALP, normal calcium and phosphate. Monitored with urinary hydroxyproline. Treatment includes bisphosphonates.</p>
10. D	<p>cANCA is most associated with Granulomatosis with polyangiitis (Wegener's granulomatosis). cANCA targets proteinase 3 within neutrophils. Microscopic polyangiitis and Eosinophilic granulomatosis with polyangiitis are more associated with pANCA which targets MPO within neutrophils and is also found in other conditions e.g. Ulcerative colitis and primary sclerosing cholangitis. These are all examples of ANCA positive small vessel vasculitis.</p> <p>Granulomatosis with polyangiitis often causes renal, respiratory, and nasopharyngeal symptoms along with systemic symptoms and rarely a vasculitic rash. There is an associated deformity known as a 'saddle-nose deformity' due to inflammation and erosion of the nasal septum.</p> 
11. D	<p>ARASHPOINTsMD</p> <ul style="list-style-type: none"> <li>• ANA positive</li> <li>• Renal nephritis</li> <li>• Arthritis</li> <li>• Serositis e.g. Pleuritis, pericarditis, myocarditis etc</li> <li>• Haematological e.g. Anaemia, leukopenia, thrombocytopenia</li> <li>• Photosensitivity</li> <li>• Oral/mucosal ulcers</li> <li>• Immunology e.g. ANA, RhF, Anti-dsDNA, Anti-Smith etc</li> <li>• Neurological symptoms e.g. Psychosis, depression, anxiety, seizures</li> <li>• Malar rash</li> <li>• Discoid rash</li> </ul> <p>Although anti-ds DNA is most specific for SLE, ANA is most specific as ~ 90% of patients with Lupus are positive for ANA. Due to this, it is often used as a test of exclusion when ruling out the condition.</p>

12. D	<p>Anti-phospholipid syndrome is an autoimmune condition which may be primary or secondary to other autoimmune diseases e.g. SLE.</p> <p>A nice mnemonic to remember highlighting the main aspects of aPL syndrome is CLOT: coagulopathy (raised APTT), Livedo reticularis, obstetric emergencies (e.g. Recurrent miscarriages), Thrombocytopenia. The 3 main associated antibodies are: lupus anticoagulant, anti-cardiolipin, anti beta2-GP1.</p> <p>Primary thromboprophylaxis is with low dose aspirin. Secondary thromboprophylaxis is lifelong warfarin.</p>
13. A	<p>a) Sleep disturbance is commonly present in patients with fibromyalgia due a disruption of brain waves.</p> <p>b) CTS, is not a symptom of fibromyalgia. It is commonly associated with Rheumatoid arthritis.</p> <p>c) Dysphagia is not a symptom of fibromyalgia. It, however, occurs in patients with systemic sclerosis.</p> <p>d) Raynaud’s is not a symptom of fibromyalgia. It, however, occurs in patients with systemic sclerosis.</p> <p>e) Fever is unlikely due to the fact she has had symptoms for over a year and has presented with any other red flag symptoms such as weight loss.</p>
14. D	<p>a) Cauda equina syndrome if left untreated can progress rapidly.</p> <p>b) CES is commonly caused by a central disc prolapse occurring typically at L4/5 or L5/S1 leading to bilateral sciatica.</p> <p>c) Impingement of the nerves can lead to sensory loss in the perianal or perineal region.</p> <p>d) Anal tone is decreased on PR in CES, due to impingement of nerves.</p> <p>e) Loss of sphincter control due to the impairment of nerves leads to urinary and faecal retention and/or incontinence.</p>
15. E	<p>a) Decreased vitamin D results in decreased mineralisation of the osteoid matrix of cortical and trabecular bone.</p> <p>b) Renal failure indirectly leads to decreased vitamin D production and subsequent Osteomalacia.</p> <p>c) X linked defect in the PHEX genes leads to hypophosphatemia and subsequent decreased mineralisation of bone.</p> <p>d) Liver disease leads to decreased vitamin D activation.</p> <p>e) Alcoholism is a cause of osteoporosis not Osteomalacia.</p>
16. A	<p>a) NICE 2013 recommends amitriptyline as the first line drug treatment for neuropathic pain.</p> <p>b) This drug is a serotonin 5-HT<sub>3</sub> receptor antagonist, used for prevention of nausea and vomiting.</p> <p>c) This is an NSAID which isn’t indicated in neuropathic pain.</p> <p>d) This is an anti-convulsant that is primarily used to treat epilepsy.</p> <p>e) This is a benzodiazepine which is used to treat anxiety, muscle spasms and seizures.</p>

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