1. A 45-year-old diabetic truck driver notices maceration of the web spaces of his toes on the right foot. The next day he develops a fever of 38^0C, and exquisite tenderness, swelling, bullae and crepitance over the right leg. Gram stain of the aspirate from a bullous lesion reveals Gram-positive bacilli with endospores.

What is the most likely etiologic agent?

- (a) a. *Bacteroides fragilis*
- (b) b. *Listeria monocytogenes*
- (c) c. *Fusobacterium necrophorum*
- (d) d. *Clostridium septicum*

2. A 7 year old boy has complained of intermittent joint pain for the past year. The pain is localized to his right knee; it occurs either with or without movement. The arthralgia is accompanied by fever. On physical examination he has a temperature of 37.8°C. There is no deformity of the knee. His blood tests reveal that he is antinuclear antibody (ANA) positive.

Which one of the following forms of arthritis is he most likely to have?

- (a) a. Syphilis
- (b) b. Rheumatic fever
- (c) c. Juvenile Rheumatoid arthritis
- (d) d. Osteomyelitis

3. A 62 year old male complains of increasing back pain and left hip pain which has been present for approximately 10 years. The pain is worse at the end of the day. On physical examination, he has bony enlargement of the distal interphalangeal joints. X-rays reveals the presence of prominent osteophytes involving the vertebral bodies with sclerosis and narrowing of the joint space at the left acetabulum.

Which one of the following diseases is he most likely to have?

- (a) a. Gout
- (b) b. Osteoarthritis
- (c) c. Osteomyelitis
- (d) d. Paget's disease

4. Which one of the following pairs of micro-organisms are responsible for most cases of myositis?

- (a) a. *Staphylococcus epidermidis* and *Streptococcus pyogenes*
- (b) b. *Staphylococcus epidermidis* and Group A streptococcus
- (c) c. *Staphylococcus aureus* and *Streptococcus pneumoniae*
- (d) d. *Staphylococcus aureus* and Group A streptococcus

5. A 4 year old boy presents with progressive swelling of his right leg. Physical examination reveals an irritable child with a fever of 38.4^{o}C and a swollen right leg that is very tender to palpation. Blood cultures are positive for Staphylococcus Aureus bacteria.

Which one of the following diseases is he most likely to have?

- (a) a. Juvenile rheumatoid arthritis
- (b) b. Pyogenic osteomyelitis
- (c) c. Rickets
- (d) d. Haemophilia

6. A 50 year old female complains of recurrent episodes of joint pain for 7 years duration. This pain has occurred mostly in her hands and feet, and in a remitting and relapsing pattern. On physical examination, she has deformities of her hands with ulnar deviation of the fingers.
Which one of the following serologic tests is most likely to be positive in this patient?

- (a) a. Rheumatoid factor
- (b) b. Rapid plasma reagin
- (c) c. HLA-B27
- (d) d. Anti-double stranded DNA

7. A 14 year old male presented with a two month history of right knee swelling and pain associated with exercise. He has no prior medical history. An X-ray revealed a large tumour infiltrating the distal femur with a Codman's triangle at the periosteal surface and "sunray" spicules in the adjacent mass.

What is the most likely diagnosis?

- (a) a. Multiple myeloma
- (b) b. Enchondroma
- (c) c. Giant cell tumour of bone
- (d) d. Osteosarcoma

8. Which one of the following bacterial pathogens is commonly associated with myositis?

- (a) a. *Toxoplasma gondii*
- (b) b. *Trichinella spiralis*
- (c) c. *Echinococcus granulosus*
- (d) d. *Staphylococcus aureus*

9. A 32 year old male presents with swelling of the left hand associated with intermittent pain. An X-ray of the tubular bones of his left hand demonstrates a well demarcated lesion in fourth metacarpal bone adjacent to the joint, which appears radiolucent with no pathological fracture.

What is the most likely diagnosis?

- (a) a. Chondrosarcoma
- (b) b. Ewing's sarcoma
- (c) c. Enchondroma
- (d) d. Osteomyelitis

10. An 82 year old male presented with a history of urinary tract infections and an enlarged prostate. He has had a recent onset of lower back pain and fatigue. His routine serum Prostate Specific Antigen level is moderately elevated. A spinal X-ray revealed multiple sclerotic lesions in the vertebra.

What is the most likely diagnosis?

- (a) a. Myeloma
- (b) b. Urothelial carcinoma
- (c) c. Prostatitis
- (d) d. Prostatic carcinoma

11. A pathologist received a biopsy from a lumbar vertebra following an autopsy examination. Histological sections showed very sparse and markedly attenuated bony trabeculae with expansion of the marrow cavity by abundant adipose tissue.

What is the most likely diagnosis?

- (a) a. Osteomalacia
- (b) b. Osteoporosis
- (c) c. Osteomyelitis
- (d) d. Paget's disease

12. Which one of the following pathogens is implicated as a cause of non-clostridial myositis?

- (a) a. *Mycobacterium leprae*
- (b) b. EBV
- (c) c. Coxsackie virus
- (d) d. CMV

13. A 57 year old woman presents with a history of back pain and a recent humeral fracture following a fall during mild exercise. X-ray and bone density investigations reveal that she has osteoporosis.

Which one of the following statements is most applicable to this patient?

- (a) a. She has a defect in the regulation of osteoclast remodelling
- (b) b. Her serum oestrogen levels is most likely decreased
- (c) c. She has a high density bone mass
- (d) d. Menopause decelerates bone loss

14. A 34 year old man presents with a history of progressive generalised proximal muscle weakness and pain localized to both lower limbs. Clinical examination reveals the presence of bowed legs with tenderness localized to the tibial region. He also has evidence of deafness bilaterally.

Which of the following will be elevated in his serum?

- (a) a. Rheumatoid factor
- (b) b. Antinuclear antibody
- (c) c. Alkaline phosphatase
- (d) d. Serum calcium

15. A 35-year-old male construction worker suffered a heavy blow to his right side, just below the axilla. He took a few days rest and then returned to work. However, he has become concerned as his right scapula is jutting outward (winged scapula), although he has no complaints of weakness or pain.

Which one of the following nerves was most likely injured?

- (a) a. Lateral pectoral
- (b) b. Long thoracic
- (c) c. Medial pectoral
- (d) d. Nerve to subclavius

16. A 27-year-old female data capturer is referred to the orthopedic clinic by her GP with a diagnosis of carpal tunnel syndrome.
Which one of the following muscle groups becomes weakened because of this condition?

- (a) a. Dorsal interossei
- (b) b. Hypothenar
- (c) c. Palmar interossei
- (d) d. Thenar

17. A 17-year-old male presents at the emergency department suffering from a dog bite on the medial aspect of the right gluteal region. The wound is cleaned and sutured. During a follow-up with his GP to have the sutures removed, the doctor decides to test for weakness or paralysis in the region. He asks the patient to stand on his left leg and notes a positive Trendelenburg sign.

Which one of the following nerves was most likely injured?

- (a) a. Inferior gluteal
- (b) b. Pudendal
- (c) c. Sciatic
- (d) d. Superior gluteal

18. A 25-year-old female hockey player suffered a leg fracture during a game. The fracture has healed but since removal of the cast, the patient is experiencing loss of sensation on the dorsum of her foot and 'foot drop'.

Which one of the following nerves was most likely injured?

- (a) a. Common fibular
- (b) b. Deep fibular
- (c) c. Superficial peroneal
- (d) d. Tibial

19. A 25-year-old man presents at the emergency department with an injured right elbow after he fell off a skateboard. Radiographs reveal a fracture of the medial epicondyle and possible injury to the ulnar nerve.

Which one of the following muscles will most likely be paralysed?

- (a) a. Biceps brachii
- (b) b. Brachioradialis
- (c) c. Flexor carpi ulnaris
- (d) d. Supinator

20. A 35-year-old beach volley ball player suffered an anterior dislocation of the left shoulder. She returns to her doctor with obvious signs of deltoid atrophy and paraesthesia over the shoulder area.

Which one of the following nerves was most likely damaged during the dislocation?

- (a) a. Axillary
- (b) b. Long thoracic
- (c) c. Musculocutaneous
- (d) d. Suprascapular

21. Limb bud development is under the control of several genes. If a Hox gene abnormality were to occur resulting in a failure of apoptosis, what would be the outcome in the upper limb?

- (a) a. Cleft hand
- (b) b. Polydactyly
- (c) c. Syndactyly
- (d) d. Triphalangeal thumb

22. Osteopenia is a condition characterized by a loss of bone density. Which one of the following bone disorders would result in a loss of bone density due to impaired bone mineralization?

- (a) a. Osteoarthritis
- (b) b. Osteomalacia
- (c) c. Osteoporosis
- (d) d. Rheumatoid arthritis

23. A 42-year-old female horse rider presents at the emergency department with a femoral neck fracture after falling from her horse. Avascular necrosis is a serious complication which can arise from this type of injury.
If avascular necrosis were to occur, which one of the following arteries supplying the femoral head would be injured?

- (a) a. Anterior nutrient
- (b) b. Obturator
- (c) c. Posterior inferior nutrient
- (d) d. Retinacular

24. A 75-year-old female suffering from osteoporosis presents for her annual check-up.
Which one of the following is a causative factor in this disease?

- (a) a. Increased bone mineralization
- (b) b. Increased bone production
- (c) c. Increased bone resorption
- (d) d. Increased bone density

25. A 12-year-old athlete presents at her GP with severe pain in both her knees, such that it impacts on her daily activities. Radiographs confirm a diagnosis of Osgood Schlatter's disease.

Which one of the following signs is typical of this disease?

- (a) a. Avulsion of quadriceps tendon
- (b) b. Fracture of the tibial epiphysis
- (c) c. Fragmentation of the tibial tubercle
- (d) d. Rupture of the patellar ligament

26. A-60-year old woman complains of pain, swelling and stiffness of her distal interpharangeal joints bilaterally for 2 years. She finds it difficult to move her fingers and says that she has lost strength in her hands.

Which one of the following conditions is most likely to show these symptoms?

- (a) a. Osteoarthritis
- (b) b. Osteoporosis
- (c) c. Rheumatoid arthritis
- (d) d. Tenosynovitis

27. A 3-year-old male presents at the local clinic suffering from malnourishment. Lab results reveal decreased Vitamin D and calcium serum levels, leading to a diagnosis of rickets. The boy also exhibits a 'duck waddle' gait.

Which one of the following conditions would result in this gait?

- (a) a. Coxa valgus
- (b) b. Coxa varus
- (c) c. Genu valgus
- (d) d. Genu varus

28. A 42-year-old female is brought to the emergency department after being involved in a serious car accident. Her knee impacted with the dashboard and she now presents with her leg medially rotated and slightly shortened.

Which one of the following injuries is the most likely?

- (a) a. Anterior dislocation of the femur
- (b) b. Femoral neck fracture
- (c) c. Femoral shaft fracture
- (d) d. Posterior dislocation of the femur

29. A piercing injury to the knee can allow infection to spread into the joint cavity. Which one of the following bursae allows for the spread of infection?

- (a) a. Anserine
- (b) b. Infrapatellar
- (c) c. Prepatellar
- (d) d. Suprapatellar

30. Paramedics are called to the scene of a serious motorcycle accident. When they arrive on the scene, they find a 22-year-old male, unconscious and unresponsive, with a deep laceration on the upper medial thigh. Despite their best efforts, the patient succumbs to his injuries.
Which artery is most likely to have been injured?

- (a) a. Femoral
- (b) b. Lateral circumflex
- (c) c. Obturator
- (d) d. Retinacular

31. A 23 year old ballet dancer suffers an injury to his gastrocnemius muscle. He now has difficulty moving his ankle to point his toes downwards.

How would you describe this ankle movement?

- (a) a. Dorsiflexion
- (b) b. Plantarflexion
- (c) c. Inversion
- (d) d. Eversion

32. A 43 year old lady injured her Achilles tendon during a triathlon a few months ago. You suspect that the tendon may have been ruptured as she complains of an inability to stand on her toes.

Which test would you perform to test for Achilles tendon rupture?

- (a) a. Lachman Test
- (b) b. McMurray's Test
- (c) c. Simmonds Test
- (d) d. Thoma's Test

33. An 18 year old male presents to you after suffering a knee injury while playing rugby. You suspect a ligamentous injury. You perform a Drawer test and detect undue anterior/forward movement of the tibia.

In which ligament would you suspect an injury?

- (a) a. Anterior cruciate ligament
- (b) b. Posterior cruciate ligament
- (c) c. Medial collateral ligament
- (d) d. Lateral collateral ligament

34. A 45 year old female complains of a painful left knee that sometimes 'locks' during extension. You perform Apley's grinding test and detect pain and clicking.

In which structure in the knee would you suspect damage?

- (a) a. Cruciate ligaments
- (b) b. Meniscus
- (c) c. Patella
- (d) d. Synovium

35. A 33 year old man presents to you for assessment after an injury to his right foot and ankle. You assess passive movements of the foot.

Which one of the following movements occurs at the subtalar (talocalcaneal) joint?

- (a) a. Dorsiflexion
- (b) b. Abduction
- (c) c. Inversion
- (d) d. Rotation

36. You examine a 35 year old female that injured her right knee while mountain climbing. On inspection you identify a positive Sag Sign.

In which structure would you suspect an injury?

- (a) a. Patella tendon
- (b) b. Quadriceps muscle
- (c) c. Medial Meniscus
- (d) d. Posterior cruciate ligament

37. A 65 year old man presents to you complaining of a six month history of worsening right hip pain and stiffness. On examination you detect bony swellings around the joint margins, reduced active and passive movement with crepitus, mild tenderness over the joint and muscle wasting.

What pathology do you suspect?

- (a) a. Gout
- (b) b. Osteoarthritis
- (c) c. Septic Arthritis
- (d) d. Subluxation

38. A 26 year old male presents with shoulder instability and pain after a shoulder injury. You suspect a rotator cuff tear. Which one of the following muscles forms part of the rotator cuff?

- (a) a. Latissimus dorsi
- (b) b. Serratus anterior
- (c) c. Subscapularis
- (d) d. Teres major

39. A 35 year old male presents with limitation of movement in the shoulder after a previous dislocation. You suspect a rotator cuff injury.

What physical examination will you do to detect infraspinatus weakness?

- (a) a. Shoulder elevation against resistance
- (b) b. Shoulder external rotation against resistance
- (c) c. Shoulder adduction against resistance
- (d) d. Shoulder extension against resistance

40. A 24 year old sportswoman presents complaining of pain in the elbow after repetitive movement. You suspect tennis elbow. Tenderness over which anatomical structure would make your diagnosis more likely?

- (a) a. Lateral epicondyle
- (b) b. Capitulum
- (c) c. Radial head
- (d) d. Olecranon

41. South African legislation mandates that an organisation must provide a comprehensive occupational clinic for staff.

Which one of the following is NOT included in the functions of an occupational clinic?

- (a) a. Primary health care services for employees
- (b) b. Baseline medical assessments of employees prior to job placement
- (c) c. Regular biological monitoring employees for exposures to toxic substances, such as lead and radiation
- (d) d. Regular monitoring of employees to ensure that exposure to the agents in the workplace do not cause disease.

42. Which one of the following factors increases a health care worker's risk of exposure to tuberculosis in the work environment?

- (a) a. Hospitals and clinics that have good ventilation systems
- (b) b. The use of N-92 masks by the majority of healthcare workers
- (c) c. An active flow of healthy patients that have to be attended to, in the busy outpatient setting
- (d) d. Healthcare workers with diminished immunity due to long work hours, poor nutrition, fatigue and burn-out

43. Which of the following statements best describes an occupational disease?

- (a) a. It occurs to an employee when a workplace hazard causes a specific disease e.g. Silica exposure causes silicosis
- (b) b. It is excluded when an employee is working in a high risk setting for the disease e.g. TB in health care workers
- (c) c. In South Africa arthritis and joint related disease forms the largest burden of occupational-related disease to the economy
- (d) d. It is the singular responsibility of the employee to manage occupational illnesses

44. Which one of the following statements regarding needle-stick injuries, and the related protocols for medical students is most appropriate?

- (a) a. Medical students are required to report it as an injury on duty at the hospital/clinic they are working at because they are employees
- (b) b. Medical students are treated as usual employees of the hospital as they are 'doctors in training'
- (c) c. Medical students are fully covered by the compensation legislation
- (d) d. Medical students are not covered by the compensation legislation

45. A 55 year old woman presents with swelling of the small joints of the hands. She also experiences early morning stiffness in the joints that lasts about 2 hours.

Which one of the following statements is true?

- (a) a. The diagnosis of rheumatoid arthritis can only be made if the rheumatoid factor is positive
- (b) b. Rheumatoid factor occurs only in patients with rheumatoid arthritis
- (c) c. Rheumatoid factor is produced by T cells
- (d) d. Rheumatoid factor is an autoantibody against altered IgG

46. A 65 year old man presents with polyarthritis and is suspected to have rheumatoid arthritis. Which one of the following is a recognised risk factor for the disease?

- (a) a. Cigarette smoking
- (b) b. Silica dust exposure
- (c) c. HLA DR8 carriage
- (d) d. Thiazide use

47. In a patient with active rheumatoid arthritis, which one of the following is true?

- (a) a. Anaemia is mainly due to iron deficiency
- (b) b. Hepcidin prevents the release of iron from body stores
- (c) c. TNF-alpha upregulates the release of C-reactive protein from the liver
- (d) d. IL-10 is the key mediator of active inflammation

48. Which one of the following shows the correct sequence of events in the process of a general anaesthetic?

- (a) a. Premedication, Emergence, Maintenance, Induction
- (b) b. Induction, Maintenance, Premedication, Emergence
- (c) c. Premedication, Induction, Maintenance, Emergence
- (d) d. Maintenance, Premedication, Induction, Emergence

49. For the agent isoflurane, which one of the following is the most appropriate statement?

- (a) a. The MAC is 1.15%.
- (b) b. It is safe to use in a patient with malignant hyperthermia.
- (c) c. It can be administered by intravenous infusion.
- (d) d. It provides some analgesia when used for general anaesthesia.

50. A young adult requires emergency surgery due to blunt trauma to the abdomen. The mean arterial blood pressure is below the lower limit of normal (below 60mmHg).

Which one of the following is the most appropriate agent to use to induce anaesthesia in this patient?

- (a) a. Etomidate
- (b) b. Sevoflurane
- (c) c. Isoflurane
- (d) d. Ketamine

51. Which of the following is NOT one of the steps in an elective sequence induction?

- (a) a. Preoxygenation.
- (b) b. Cricoid pressure.
- (c) c. Test that manual ventilation is possible with the face mask.
- (d) d. Slowly inject the IV induction agent until the patient is anaesthetised.

52. In a child who requires an elective surgical procedure but does not have IV access, which one of the following would be the most appropriate method of induction of anaesthesia?

- (a) a. Intramuscular injection of ketamine.
- (b) b. Gas induction with sevoflurane.
- (c) c. Set up intravenous access and use propofol.
- (d) d. Gas induction with isoflurane.

53. If succinylcholine is used in a patient who is deficient in plasma cholinesterase which one of the following statements is the most appropriate?

- (a) a. There would be a prolonged duration of action.
- (b) b. There would be a shortened onset of action time.
- (c) c. There would be no muscle fasciculations.
- (d) d. There would be no effect on the action of succinylcholine.

54. During a blood pressure taking exercise a student noted carpal spasm as the upper arm was compressed by a blood pressure cuff. This was confirmed by her senior.

Which one of the following signs best describes this phenomenon?

- (a) a. Trousseau's sign
- (b) b. Jendrassik's sign
- (c) c. Chvostek's sign
- (d) d. Gower's sign

55. During a blood pressure taking exercise a student noted carpal spasm as the upper arm was compressed by a blood pressure cuff. Blood sample result for the patient above had normal serum calcium, magnesium and phosphate from the central laboratory.

Which one of the following is the most appropriate next step?

- (a) a. Measure ionized magnesium.
- (b) b. Measure ionized calcium.
- (c) c. Measure ionized phosphate
- (d) d. Measure ionized manganese

56. A 55 year old man with end-stage renal failure developed bone pain. The serum parathyroid hormone (PTH) of 65pmol/L (1.6 - 6.9) was reported to be 10 times greater than the one done several years before dialysis. Serum calcium levels were normal.

Which one of the following is the most likely cause of the raised PTH?

- (a) a. Primary hyperparathyroidism
- (b) b. Secondary hyperparathyroidism
- (c) c. Tertiary hyperparathyroidism
- (d) d. Temporal hyperparathyroidism

57. A 55 year old man with end-stage renal failure developed bone pain. The serum parathyroid hormone (PTH) of 65pmol/L (1.6 - 6.9) was reported to be 10 times greater than the one done several years before dialysis. Serum calcium levels were normal.

What would you expect the levels of FGF23 to be in this patient?

- (a) a. Normal
- (b) b. Decreased
- (c) c. Increased
- (d) d. Absent

58. During an examination, a patient was noted to have calciphylaxis (non-healing ulcers, calcification of small/medium blood vessels in the skin leading to thrombosis and skin necrosis).

Which one of the following conditions is associated with this complication?

- (a) a. Chronic liver failure
- (b) b. Chronic malabsorption
- (c) c. Chronic renal failure
- (d) d. Chronic granuloma

59. A 64 year old woman complaining of gradual bowing deformity and decreased range of motion of the left leg was diagnosed with Paget's disease.

Which one of the following would you expect in the laboratory report?

- (a) a. Decreased serum alkaline phosphatase
- (b) b. Decreased serum phosphate
- (c) c. Increased serum alkaline phosphatase
- (d) d. Increased serum phosphate

60. During an explanation on the future management plan to a 30 year old female patient after thyroidectomy. One of the tests mentioned is parathyroid hormone (PTH).

Under which one of the following types of hormones is classified?

- (a) a. Steroid hormone
- (b) b. Amino acid hormone
- (c) c. Peptide hormone
- (d) d. Phospho-Tropine hormone

61. A patient's plasma results showed vitamin D2 deficiency. In order to restore the patient's vitamin D2 plasma balance, which one of the following vitamin D supplements is the therapy of choice?

- (a) a. Ergocalciferol
- (b) b. Cholecalciferol
- (c) c. Calcitriol
- (d) d. Calcium

62. A 60 year-old woman presents to her GP as a clinical case of painful *Herpes zoster* infection. In addition to her shingles therapy, the patient was also prescribed tramadol to help control her acute pain. A few days after starting the therapy, she was seen again by her GP complaining of constipation.

Which one of the following agents should have initially been prescribed to prevent this adverse effect?

- (a) a. Cyclizine
- (b) b. Lactulose
- (c) c. Loperamide
- (d) d. Magnesium hydroxide

63. A 27 year-old pregnant woman in her third trimester was seen by an emergency room surgeon as a case of non-traumatic left shoulder dislocation.

In order to restore her dislocated shoulder and control her agonizing pain, which one of the following agents is the preferred analgesia of choice?

- (a) a. Diclofenac
- (b) b. Pethidine
- (c) c. Morphine
- (d) d. Celecoxib

64. A 47 year-old man presented to the emergency room with right upper quadrant abdominal pain and was shortly diagnosed as case of acute cholecystitis due to gall bladder stone.
Which one of the following agents is preferred to manage his acute spastic pain?

- (a) a. Morphine
- (b) b. Codeine
- (c) c. Pethidine
- (d) d. Diphenoxylate

65. A 2 year-old boy was seen by a day clinic trauma nurse to remove surgical stitches. In order to prevent discomfort and pain, the nurse applies a topical anaesthetic agent "under occlusion" for an hour prior to the procedure.

Which one of the following agents is most likely to be combined with lignocaine for topical application?

- (a) a. Diclofenac
- (b) b. Nitrous oxide
- (c) c. Prilocaine
- (d) d. Adrenaline

66. A 22 year-old medical student is discharged from the surgical ward one day post appendectomy, and prescribed oral tramadol for postoperative pain control. As a medical student, he knows that tramadol is an opioid analgesic, but queries the difference in mechanism of action between fentanyl, an agent used during his operation, and tramadol.

Which one of the following mechanisms of action is specifically attributed to tramadol but not to fentanyl?

- (a) a. Mu-opioid receptor agonist
- (b) b. Inhibits reuptake of serotonin
- (c) c. Inhibits acetylcholine release
- (d) d. Muscarinic receptor antagonist

67. A 41 year-old woman is to undergo elective surgery. Her past medical history reveals prior severe reactions to the combination of halothane + succinylcholine.

Which one of the following agents is the therapy of choice to reverse malignant hyperthermia?

- (a) a. Dantrolene
- (b) b. Naloxone
- (c) c. Diazepam
- (d) d. Adrenaline

68. A 32 year-old man is admitted to the ICU with second-degree burns and a neuromuscular blocking agent is administered to prevent involuntary muscle twitching. His blood results reveal a picture of impaired renal function with low creatinine clearance.

Compared to the other agents, which one of the following neuromuscular blockers is associated with a lower risk of nephrotoxicity?

- (a) a. Succinylcholine
- (b) b. Cis-atracurium
- (c) c. Rocuronium
- (d) d. Pancuronium

69. A muscle relaxant agent, vecuroniuma, is administered to a 32 year-old man undergoing elective surgery for his fractured neck of femur. Which one of the following agents is used to reverse the muscle relaxant effects of vecuronium?

- (a) a. Dantrolene
- (b) b. Adrenaline
- (c) c. Atropine
- (d) d. Neostigmine

70. A 27 year-old woman was admitted to the trauma unit following a car accident. In order to facilitate endotracheal intubation, the doctor on duty decided to administer succinylcholine as a muscle relaxant agent.

Which one of the following statements best describes succinylcholine's mechanism of action?

- (a) a. Nicotinic receptor agonist
- (b) b. Nicotinic receptor antagonist
- (c) c. Muscarinic receptor agonist
- (d) d. Muscarinic receptor antagonist

71. A 51 year-old woman has chronic rheumatoid arthritis. Over the past few years, her symptoms were responding poorly to methotrexate and sulfasalazine, and due to the advance in her condition and deteriorated quality of life, her rheumatologist decided to start her on etanercept.

Which one of the following is the most accurate description of etanercept mechanism of action?

- (a) a. Blocks the effect of the TNF-α
- (b) b. Inhibits dihydrofolate reductase
- (c) c. Decreases circulating CD20 levels
- (d) d. Potentiates the TNF-α receptor

72. A 55 year-old male patient is scheduled to start new rituximab treatment after being unresponsive to his current disease-modifying anti-rheumatoid drugs (DMARDs). Prior to receiving his first rituximab dose, an I.V dose of methylprednisolone was administered to the patient.

Which one of the following statements is the most accurate rationale behind this protocol?

- (a) a. Methylprednisolone increases the efficacy of the rituximab
- (b) b. Methylprednisolone lowers the risk of the rituximab infusion reaction
- (c) c. Methylprednisolone suppresses the reactivation of hepatitis B
- (d) d. Methylprednisolone increases the half-life of rituximab

73. A 60 year old man presented with back pain. X rays showed lytic lesions in the spine. Urine was positive for Bence-Jones protein by the heating test. Urine protein electrophoresis showed a large peak which reacted with antibody to kappa light chain.

Which one of the following biomolecular marker can reflect the activity in the above patient?

- (a) a. Osteocalcin
- (b) b. Bone-specific alkaline phosphatase
- (c) c. Deoxypyridinoline
- (d) d. Bone-specific acid phosphatase

74. A 34 year old male presented to casualty with an open left tibia fracture after being involved in a motor vehicle accident (MVA). He sustained an isolated injury of the left tibia and has a pulse of 86/min and BP of 110/70.

What management is appropriate in casualty?

- (a) a. Intravenous antibiotics
- (b) b. Book theatre for external fixation of tibia
- (c) c. Book theatre for debridement of left tibia
- (d) d. Intravenous antibiotics, Irrigation of Wound with normal saline & Immobilization of fracture with splint

75. A 40 year old patient presents to a clinic with a history of pain and locking of his right knee. MRI shows tear of medial meniscus.
With regard to anatomy of the knee which one of the following statements is true?

- (a) a. Anterior Cruciate Ligament (ACL) is tight in 90^{o} flexion
- (b) b. Posterior Cruciate Ligament (PCL) is tight is full extension
- (c) c. Medial meniscus is C-shaped and fixed to the medial collateral ligament
- (d) d. Lateral meniscus is a static structure

76. What is the most common fracture resulting in avascular necrosis in the femur?

- (a) a. Transcervical Fracture
- (b) b. Subcapital fracture
- (c) c. Trochanteric fracture
- (d) d. Basal fracture

77. Which one of the following joints most commonly dislocates?

- (a) a. Hip joint
- (b) b. Shoulder joint
- (c) c. Knee joint
- (d) d. Elbow joint

78. Rheumatoid arthritis is associated most importantly with which one of the following?

- (a) a. IgA Rheumatoid factor
- (b) b. IgG Rheumatoid factor
- (c) c. IgM Rheumatoid factor
- (d) d. Anti CCP

79. What is the most common cause for Anterior Knee pain?

- (a) a. Prepatellar Bursitis
- (b) b. Congenital Discoid Meniscus
- (c) c. Plica Syndrome
- (d) d. Chondromalacia patellae

80. A 25 year old male patient comes into casualty and has an open femur fracture. What is the first treatment option you would institute?

- (a) a. Administer analgesia
- (b) b. Give antibiotics
- (c) c. Apply ATLS principles
- (d) d. Ensure a sterile pressure dressing is applied immediately

81. You apply a full cast for a patient with a distal radius fracture. A few hours later the sisters in the ward call you, to assess the patient who is complaining of a lot of pain despite recent analgesia. The hand is dusky and the fingers are swollen.

What is the first thing you would do?

- (a) a. Elevate the hand to reduce swelling
- (b) b. Split the cast
- (c) c. Administer further stronger analgesia
- (d) d. X-ray the forearm to check for fracture displacement

82. A 3 year old child with an undisplaced greenstick fracture of the radius and a history of other healed long bone fractures is seen in the clinic. The child also has multiple circular skin lesions that appear to be burns. The carer is the grandmother who tells you the child normally stays with the mother who is a 17 year old single parent and unemployed.
What would your initial treatment be?

- (a) a. Admit the child for fracture treatment and workup for non-accidental injury
- (b) b. Apply full cast to the forearm and topical antibiotics to the burns with strict instructions to follow up with you in one week.
- (c) c. Immobilise the fracture and refer the family for social worker counselling
- (d) d. Immobilise the fracture and admit for dermatology consult

83. A 70 year old female patient presents with osteoporosis and hypertension. She lives independently, and has reported having two falls in the past year, resulting in no injuries other than bruises.

Choose the most appropriate exercise prescription advice for this patient:

- (a) a. Accumulate 150 minutes of moderate exercise per week, inclusive of walking exercises, functional and balance exercises.
- (b) b. Accumulate 150 minutes of moderate exercise per week, inclusive of cycling exercises, and functional and balance exercises.
- (c) c. Accumulate 70 minutes of moderate exercise per week, inclusive of aerobic, resistance and functional exercises.
- (d) d. Exercise prescription is not appropriate for this patient.

84. A 70 year old, female patient presents with osteoporosis and hypertension. She lives independently, and has reported having two falls in the past year, resulting in no injuries other than bruises.

What are the benefits of exercise specific for this patient?

- (a) a. Reduces the risk of heart disease,
- (b) b. Reduces blood pressure and improves bone density
- (c) c. Reduces the risk of Alzheimer's disease
- (d) d. Reduces the risk of colon cancer

85. A 10-year-old boy complains of sudden onset of pain in the leg and fever. Laboratory investigations reveal increased ESR, CRP and WCC. The blood culture indicated bacterial growth.

What is the most likely organism?

- (a) a. Pseudomonas
- (b) b. Candida
- (c) c. Enterobacter
- (d) d. Staphylococcus

86. In an effort to follow the global exercise guidelines of at least 150 minutes per week, Mr Mbazo, a 67 year old Professor, has been training regularly for the past 3 years. His self-esteem has improved over this period and his body weight has progressively decreased. However, in the past 2 months he has noticed a slow deterioration in his balance during walking activity at the gym.

His biokineticist performs balance testing and observes signs of moderate risk of falling. A dual energy X-ray absorptiometry scan confirms deterioration of bone mineral density in the right hip region, suggesting regional osteoporosis.

Which one of the following is the most appropriate exercise rehabilitation management for Mr. Mbazo?

- (a) a. Aerobic training
- (b) b. Stationary cycling, hydrotherapy, arm ergometry
- (c) c. Dynamic abdominal exercises
- (d) d. Balance retraining

87. A 70 year old female is complaining of back pain with loss of height over the years. She had a previous neck of femur fracture after falling from a standing height. She is otherwise well with no constitutional symptoms or weight loss.

What is the most likely diagnosis?

- (a) a. Tuberculosis of the spine
- (b) b. Osteoporosis with spinal involvement
- (c) c. Ankylosing Spondylitis
- (d) d. Metastatic disease to the spine

88. A 40 year old female with rheumatoid arthritis (on chronic corticosteroids) fell and sustained a fracture of the distal forearm. Her x-rays showed significant osteopeania.

Which test would you order next, to investigate her further?

- (a) a. CT scan
- (b) b. MRI
- (c) c. DEXA bone scan
- (d) d. Technitium Bone scan

89. A 48-year-old woman complains of pain and swelling affecting both her hands and feet with associated early morning stiffness that lasts 45 minutes over the last 2 months. She has a 20 pack year history of smoking. Investigations reveal a positive anti-Cyclic Citrullinated Peptide antibody test and an erythrocyte sedimentation rate of 92mm/hour.

Which one of the following is the most likely diagnosis?

- (a) a. Gout
- (b) b. Osteoarthritis
- (c) c. Psoriatic arthritis
- (d) d. Rheumatoid arthritis

90. Which of the following factors stimulates osteoblastic function that results in the deposition of bone?

- (a) a. Interleukin- 1 (IL-1)
- (b) b. Oestrogen
- (c) c. Parathyroid hormone
- (d) d. Vitamin D

91. In osteomalacia, a lack of vitamin D results in which one of the following?

- (a) a. Decreased osteoid mineralization
- (b) b. Decreased osteoid secretion
- (c) c. Increased osteoid resorption
- (d) d. Secretion of disorganized osteoid

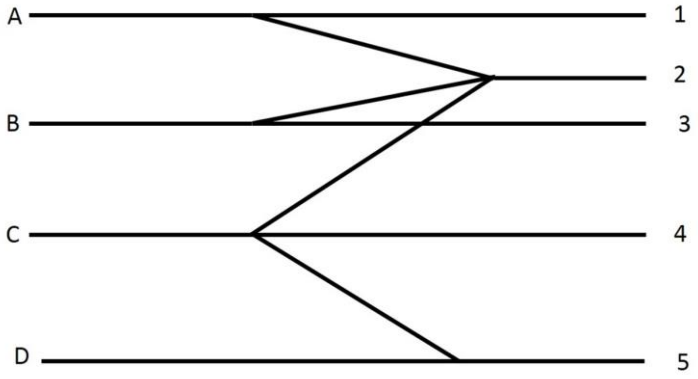
92. If osteoclastic function is decreased, which of the following is seen on bone histology?

- (a) a. Decreased bone mineralization
- (b) b. Decreased bone organization
- (c) c. Decreased volume of bone
- (d) d. All of the above

93. Following a motor vehicle accident, a patient presents with an open fracture of the tibia with extensive soft tissue damage, including stripping of the periosteum from the bone.
Which one of the following areas of the bone is most at risk of avascular necrosis?

- (a) a. The epiphysis
- (b) b. The inner two thirds of the cortex
- (c) c. The outer third of the cortex
- (d) d. The metaphysis

94. In the diagram below, A-D represent the anterior rami of spinal nerves and 1-5 represent peripheral nerves. A patient presents with loss of sensation in areas supplied by peripheral nerves 2, 4 and 5. The pattern of sensory loss is consistent with the distribution of a single dermatome.



Which anterior ramus is most likely to be damaged?

- (a) a. A
- (b) b. B
- (c) c. C
- (d) d. D

95. A patient presents with an inability to evert the foot. On examination, sensation is lost on the dorsum of the foot but is intact in the first web space. Dorsiflexion of the ankle is normal.

Which one of the following nerves is most likely to be injured?

- (a) a. Common fibular nerve
- (b) b. Deep fibular nerve
- (c) c. Superficial fibular nerve
- (d) d. Tibial nerve

96. A patient presents with a gunshot wound to the distal thigh. On examination, he has a loss of plantarflexion and loss of sensation on the sole of the foot. Sensation on the dorsum of the foot is normal as is dorsiflexion of the ankle.

Which one of the following is most likely to be injured?

- (a) a. Common fibular nerve
- (b) b. Femoral nerve
- (c) c. Sciatic nerve
- (d) d. Tibial nerve

97. A patient presents with a knife wound to the anterior aspect of the wrist. You suspect the palmaris longus tendon is cut.
Which of the following structures is also likely to be injured?

- (a) a. Lateral cutaneous nerve of the forearm
- (b) b. Median nerve
- (c) c. Radial nerve
- (d) d. Ulnar nerve

If assessment score is 0% to 100% Feedback