

COLLEGE OF OSTEOPATHIC MEDICINE OF THE PACIFIC

MUSCULOSKELETAL - FINAL EXAM

May 24, 1996

#2

Choose the ONE BEST answer and darken the appropriate box on the Scantron form. There are 74 questions on this exam.

~~Graded~~ *undari*

1. Which of the following relationships is INCORRECT?
 - a. Chief Complaint (CC): fever and limping
 - b. Social History (SH): Father is a mechanic
 - c. Review of Systems (ROS)-(GEN): Well, with no developmental delays
 - d. Physical Exam (PE)-CHEST: RRRs without murmur, gallop, or click
 - ~~e. Physical Exam (PE)-(MSK): No history of trauma or fractures~~
2. The differential diagnosis of arthritis in a single joint would include all of the following EXCEPT:
 - a. traumatic arthritis.
 - b. rheumatoid arthritis.
 - c. pseudogout arthritis.
 - ~~d. staphylococcal sepsis arthritis.~~
 - e. gonococcal sepsis arthritis.
3. To present a case for discussion, which one of the following elements is NOT necessary?
 - a. a focus to prioritize data and reduce its size
 - b. an order to allow the presentation to flow smoothly and be condensed
 - c. a content that contains a recorded gathered data base
 - d. exceptions that necessitate altering the presentation of some key information
 - ~~e. all information gathered in a history and physical examination~~
4. Which of the following is INCORRECT regarding the SOAP format in case presentations?
 - a. Subjective data includes descriptions of pain of the thigh and calf muscles.
 - b. Objective data includes descriptions of skin warmth.
 - ~~c. Assessment includes the office charges for the diagnosis of the chief complaint.~~
 - d. Plan includes ordering a diagnostic radiograph.
 - e. Plan includes directions for using a medication.

Graded ✓

Dr. Len ✓

Dr. Parsa ✓

Dr. Gilbert ✓

5. Which of the following is LEAST likely to be the etiology of an inflammation of a leg?
 - a. Chief Complaint (CC): right leg pain
 - b. Social History (SH): Married, hair stylist, 15 pack of cigarettes
 - c. Review of Systems (ROS)-Neurosensory (NS): denies chronic pain
 - d. Physical Exam (PE)-Skin: denies rashes or lesions
 - ~~e. Physical Exam (PE)-(MSK): Right medial and posterior leg warm and red~~
6. Which of the following is LEAST likely to be the etiology of an inflammation of a leg?
 - ~~a. polymyalgia rheumatica~~
 - ~~b. cellulitis~~
 - ~~c. osteomyelitis~~
 - ~~d. thrombophlebitis~~
 - ~~e. Baker's cyst~~

~~Graded~~ *Rice*

7. The primary mode of heat liberation during exercise is:
 - a. convection.
 - b. conduction.
 - c. radiation.
 - ~~d. evaporation.~~
8. Which of the following represents a true medical emergency, often resulting in circulatory collapse, as the result of overheating from impaired thermoregulatory collapse?
 - a. heat cramps
 - ~~b. heat stroke~~
 - c. heat exhaustion
 - d. heat dissipation
9. What is the usual limiting factor in replenishing fluid loss during an endurance event?
 - a. supply of Gatorade
 - ~~b. GI absorption~~
 - c. temperature of fluid
 - d. type of endurance activity
10. The best definition of sports medicine is:
 - a. taking care of elite athletes
 - ~~b. helping the patient/athlete to attain their physical goals without significant injury.~~
 - c. helping bodybuilders maximize their physique.
 - d. maximizing ergogenic aids.

11. Regarding spinal fractures, the primary mechanism of injury is

- a. hyperextension.
- b. axial loading with cervical flexion. SCI
- c. whiplash mechanism.
- d. improper face masks.

12. With regard to anabolic androgenic steroids

- a. there are a few legitimate medical conditions which require these drugs.
- b. they do not work to enhance performance.
- c. they are relatively risk free.
- d. they are especially efficacious with endurance activities.

Dr. Docherty

13. All of the following statements are true regarding orthopedic emergencies EXCEPT:

- a. Orthopedic complaints/injuries are rarely life-threatening, but must be diagnosed and treated accurately to avoid long-term complications.
- b. There should be no hesitation in obtaining an orthopedic consultation if there is any question at all regarding the correct management of an orthopedic injury.
- c. Orthopedic injuries can rarely be anticipated by knowing the age of the patient and the mechanism of injury.
- d. You should be familiar with the correct X-ray views that are necessary to evaluate specific orthopedic injuries.
- e. Always X-ray all dislocations before/after reduction unless a delay would cause further harm to the patient.

14. All of the following statements are true regarding orthopedic emergencies EXCEPT:

- a. Evaluation to rule out neurovascular deficits should be performed in all orthopedic injuries.
- b. Casting of orthopedic injuries should be left for the physician who will be providing ongoing care to perform.
- c. Before being discharged from the emergency department, patients should be given very clear and precise follow-up instructions in writing.
- d. The patient should be able to ambulate safely before being discharged home.
- e. In a severely traumatized patient with multiple injuries, the patient's orthopedic injuries should always be treated first before all others.

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15. All of the following statements are true regarding orthopedic emergencies EXCEPT:

- a. Splinting should begin in pre-hospital care.
- b. A suspected fracture should be splinted before the patient is moved.
- c. Splints should be applied in such a way as to immobilize the joints above and below the fracture to avoid motion of the involved bone.
- d. Splints should always be applied in a constricting fashion.
- e. Splints prevent further injury to bone and soft tissue and help to decrease the patient's discomfort.

16. Which of the following is FALSE regarding fracture of the scapula?

- a. occurs most frequently in late middle-aged patients.
- b. occurs secondary to very high energy impact.
- c. tenderness over the scapula with limited range of motion of the shoulder area.
- d. it is not important to rule out other associated injuries with a scapula fracture.
- e. sling immobilization is part of the initial treatment for scapula fracture.

17. The most common type of anterior shoulder dislocation is

- a. intrathoracic.
- b. subcoracoid.
- c. subglenoid.
- d. subclavicular.
- e. retrosternal.

18. The most common type of major dislocation occurs at which of the following joints?

- a. hip
- b. shoulder
- c. knee
- d. elbow
- e. ankle

19. All of the following are true regarding posterior shoulder dislocations EXCEPT

- a. rarely occur.
- b. routine AP X-ray appears normal; need transcapular view.
- c. rarely misdiagnosed.
- d. neurovascular complications virtually never seen.
- e. should be reduced by orthopedist because of associated fractures.

20. All of the following are true regarding fractures EXCEPT

- a. Monteggia fracture is fracture of the ulna with dislocation of the radial head.
- b. Galeazzi fracture is fracture of the ulna with dislocation of the distal radius.
- c. Colles fracture is fracture of the distal radius with dorsal angulation.
- d. Smith's fracture is fracture of the distal radius with volar angulation.
- e. Greenstick fracture is incomplete angulated fracture of long bones occurring in pediatric patients.

Freq. Missed →

4

21. The most common type of hip dislocation is which one of the following?

- a. anterior
- b. central
- ~~c. posterior~~
- d. lateral
- e. none of the above

22. Which one of the following is the initial step in the care of the trauma patient?

- a. definitive care
- b. resuscitation
- c. secondary survey
- ~~d. primary survey~~
- e. preparation

23. Which one of the following is NOT considered a part of the primary survey?

- a. airway maintenance with cervical spine control
- b. breathing and ventilation.
- c. circulation with hemorrhage control
- d. disability = neurological status
- ~~e. casting of fractures~~

24. Which of the following is an important fact to obtain regarding the trauma patient's history?

- ~~a. allergies~~
- ~~b. medications currently being taken~~
- ~~c. past illnesses~~
- ~~d. last meal~~
- ~~e. all of the above~~

AMPLE

25. All of the following are part of the 1987 ACR criteria for the diagnosis of rheumatoid arthritis EXCEPT

- a. subcutaneous nodules.
- b. morning stiffness less than one hour.
- c. positive rheumatoid factor.
- ~~d. symmetric arthritis.~~
- ~~e. greater than three joints involved.~~

26. Felty's syndrome includes all of the following EXCEPT

- ~~a. seropositive rheumatoid arthritis.~~ ✓
- ~~b. leukopenia.~~ ✓
- ~~c. enlargement of spleen.~~ ✓
- d. bacterial infections are common.
- e. skin lesions that look like felt.

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27. Rheumatoid arthritis may include all of the following EXCEPT

- a. anemia. T
- ~~b. subcutaneous nodules.~~ T
- ~~c. endocarditis.~~
- d. pulmonary nodules.
- ~~e. vasculitis.~~ T

28. Spine involvement in RA may include

- ~~a. cervical spine in up to 50% of cases.~~
- b. thoracic spine.
- c. lumbar spine.
- d. sacro-iliac joints.
- e. spondylitis.

29. Spondyloarthropathies include all of the following EXCEPT

- a. ankylosing spondylitis.
- b. psoriatic arthritis.
- c. enteropathic arthritis.
- ~~d. gout.~~
- e. Reiter's syndrome.

30. All of the following are features of Reiter's syndrome EXCEPT

- a. urethritis.
- b. arthritis.
- ~~c. subcutaneous nodules.~~
- d. conjunctivitis.
- e. follows diarrheal disease.

31. Psoriatic arthritis includes all of the following EXCEPT

- a. nail pitting.
- b. onycholysis
- ~~c. onchyomyocosis.~~
- d. cutaneous psoriasis.
- e. sausage digits.

32. The most common extra-intestinal manifestation of Crohn's disease (inflammatory bowel disease) is

- ~~a. inflammatory arthritis.~~
- b. skin rash.
- c. cardiac disease.
- d. GI bleeding.
- e. renal failure.

2. 2nd most common
skin rash
GI bleeding
renal failure

	A	B	C	D	E
C	-	+	-	-	-
U	-	+	-	-	-
S	-	+	-	-	-
M	-	+	-	-	-

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- 2. 2nd most common
- 2. 2nd most common

33. Etiologic agents known to cause Reiter's syndrome include all of the following EXCEPT

- a. Shigella. ✓
- b. Salmonella. ✓
- ~~c. Yersinia.~~ ✓
- d. Chlamydia. ✓
- e. Staphylococci. ✓

GI
GU

34. Osteoarthritis includes all of the following EXCEPT

- a. weight-bearing joints.
- b. Heberden's nodes.
- c. positive rheumatoid factor.
- ~~d. Bouchard's nodes.~~
- e. non-inflammatory swelling of the joint.

Dr. Madorsky

35. When needing a consultant physician to help you with a physical rehabilitation problem, you should look for a

- a. psychiatrist.
- b. plumber.
- c. physiologist.
- ~~d. physiatrist.~~
- e. dermatologist.

36. Specialists in physical medicine can be expected to coordinate care in which of the following?

- a. physical disabilities and their residuals
- b. psychological stress
- c. sexual adjustment and adaptation
- d. vocational readjustment/quality of life
- e. all of the above

37. All people in wheelchairs should stay away from mountain climbing activities.

- a. True
- b. False.

38. Vocational activities are properly a concern in the rehabilitation of persons who have sustained spinal cord injuries.

- a. True
- b. False.

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39. Which of the following is classical rheumatoid factor?

- a. IgM anti-IgA
- b. IgG anti-IgM
- c. IgG anti-IgA
- ~~d. IgM anti-IgG~~ ✓
- e. IgA anti-IgM

F₁ I₂

40. All the following statements about rheumatoid arthritis (RA) are true EXCEPT:

- ~~a. It is more common in men than in women.~~
- b. There are immune complexes in the synovial fluid of patients with RA.
- c. There are activated macrophages in the rheumatoid lesions.
- d. There is a cellular sensitivity to collagen in most cases of RA.
- e. Certain HLA Class II alleles are more common in those with RA than in the general population.

41. What immunologic mechanism of tissue injury is most important in causing kidney damage in SLE?

- a. Type 1
- b. Type 2
- ~~c. Type 3~~
- d. Type 4

DRG
HLA's complex

42. All the following statements about systemic lupus erythematosus (SLE) are true EXCEPT:

- a. Many types of autoantibodies are found in SLE. ✓
- b. Those with null alleles for C4A and/or C4B are predisposed to SLE. ✓
- ~~c. The best screening test for SLE is one that detects antibody to ribosomal ribonucleoprotein (RNP).~~
- d. Antibody to double stranded DNA is a diagnostic marker for SLE. ✓
- e. More women than men get SLE. ✓

43. The most common cause of infectious arthritis in adults between the ages of 16 and 50 is:

- a. Staphylococcus aureus
- ~~b. Neisseria gonorrhoeae~~
- c. Haemophilus influenzae b
- d. Pseudomonas aeruginosa
- e. Mycobacterium tuberculosis

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44. All the following statements about Lyme Disease are true EXCEPT:

- a. It is caused by a rickettsia.
- b. The vector is a tick.
- ~~c. It is the most common vector-borne disease in the U. S.~~
- d. The reservoirs of Lyme Disease include deer.

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45. All the following statements about gas gangrene are true EXCEPT:

- a. The etiology is usually Clostridium perfringens.
- b. The organism is common in the soil.
- c. The organism is anaerobic.
- d. There is a massive inflammation in gas gangrene.
- e. Systemic toxicity is caused by the products of infected muscle.

46. All the following statements about trichinosis are true EXCEPT:

- a. The organism is a nematode.
- b. The organism may infect virtually any carnivorous animal.
- c. Adult forms of the organism live for awhile in the gut of the host.
- d. Humans are infected by ingestion of eggs of the parasite.

Dr. Parva

47. Which of the following statements about myasthenia gravis is TRUE?

- a. Muscle fibers are diagnostically infiltrated by neutrophils. X
- b. There is marked atrophy of only type I muscle fibers. X
- c. There are antibodies against acetylcholine receptors. X Lambert Eaton Syndrome
- d. It is characteristically associated with squamous lung cancer. X dermatomyositis
- e. Administration of anticholinesterase will worsen the symptoms. X

48. Which of the following is NOT a feature of Duchenne muscular dystrophy?

- a. dystrophin deficiency X
- b. sex-linked recessive inheritance X
- c. positive Gower's sign X
- d. muscular pseudohypertrophy X
- e. normal serum level of creatine kinase X

49. Muscle weakness, scoliosis, high arched palate, high longitudinal pedal arch, hereditary transmission and distinct E.M. morphologic features are characteristic of

- a. myasthenia gravis. X
- b. myotonic dystrophy. X
- c. metabolic myopathies. X
- d. congenital myopathies. X
- e. rhabdomyoma. X

50. Which of the following is a malignant skeletal muscle neoplasm which occurs in individuals over the age of 45?

- a. rhabdomyoma X
- b. embryonal rhabdomyosarcoma X
- c. botryoid rhabdomyosarcoma X
- d. alveolar rhabdomyosarcoma X
- e. pleomorphic rhabdomyosarcoma X

51. When treating an acute attack of gouty arthritis,

- a. oral colchicine is considered the drug of choice because it is highly effective, rapid acting, and well tolerated, with practically no side effects or toxicity. X
- b. It is important to immediately give a uricosuric agent (e.g. probenecid (Benemid)) to rapidly lower plasma uric acid levels. X
- c. indomethacin (Indocin) is now preferred over colchicine because indomethacin has a rapid onset of anti-inflammatory action and is usually well tolerated when used for a short time. X
- d. combination therapy with colchicine and allopurinol (Zyloprim) is now preferred because allopurinol has both uricosuric and anti-inflammatory activity. X
- e. aspirin is now considered a drug of choice because it is both anti-inflammatory and uricosuric. X

52. Probenecid (Benemid), sulfipyrazone (Ahturane) and allopurinol (Zyloprim) are all used for treating hyperuricemia associated with gout. Allopurinol (Zyloprim) differs from probenecid and sulfipyrazone in that allopurinol

- a. lowers the total body pool of uric acid. X
- b. can promote the resorption of tophaceous deposits of urate crystals. X
- c. ultimately decreases plasma uric acid levels. X
- d. decreases urinary excretion of uric acid. X
- e. can precipitate an acute attack of gout when treatment is initiated, or worsen an ongoing attack if given during an acute attack. X

53. All of the following statements about NSAIDs and rheumatoid arthritis (RA) are correct EXCEPT:

- a. When large scale trials are conducted, none of the newer NSAIDs consistently show greater efficacy for RA than aspirin. X
- b. If a given NSAID is not fully effective or well tolerated, it is wise to try a different NSAID for a period of 2 to 4 weeks. X
- c. Unlike gold compounds, aspirin in high enough dose results in immediate anti-inflammatory/analgesic effects and stops the progression of the underlying disease. X
- d. Piroxicam (Feldene) has the advantage of having a long half-life, allowing once-a-day dosing and providing better compliance. X
- e. Nabumetone (Relafen) is a prodrug which is metabolized to a naphthylacetic acid derivative with a long half-life. X

54. The major proposed advantage of the "slow-acting antirheumatic drugs (SAARDs)" is that they

- a. may modify or slow the progression of the underlying disease. X
- b. have much less toxicity, as a group, than do aspirin and other NSAIDs. X
- c. are all more effective and less toxic than the rapid-onset NSAIDs. X
- d. can be used along with NSAIDs to enhance their anti-inflammatory actions without increasing toxicity. X
- e. usually bring about a permanent remission of RA and then all drug therapy can be discontinued with no recurrence of symptoms. X

55. Which of the following slow-acting antirheumatic drugs has a relatively rapid onset of action (2 to 6 weeks), is well tolerated when used as "low dose" therapy, and may slow the progression of the underlying disease?

- a. auranofin (Ridaura)
- b. aurothioglucose (Solganal)
- c. hydroxychloroquine (Plaquenil)
- ~~d. methotrexate (Rheumatrex)~~
- e. penicillamine (Cuprimine)

56. The systemic use for RA of which of the following drugs is limited because of numerous, potentially serious adverse reactions, and because the drug is usually NOT classified as a "disease-modifying antirheumatic drug" (DMARD)?

- a. aurothioglucose (Solganal)
- b. hydroxychloroquine (Plaquenil)
- c. methotrexate (Rheumatrex)
- ~~d. prednisone (Deltasone)~~
- e. sulfasalazine (Azulfidine)

57. In systemic lupus erythematosus, there may be autoantibodies to

- a. DNA.
- b. histones.
- c. nonhistone proteins bound to RNA.
- d. nucleolar antigens.
- ~~e. all of the above.~~

58. In rheumatoid arthritis, a pannus is

- a. osteoclastic activity.
- b. osteoclastic activation.
- c. osteoblastic activity.
- d. osteoblastic activation.
- ~~e. fibroblast, synovial cell proliferation.~~

59. In scleroderma, the T cells, mast cells and macrophages injure

- a. tubular cells.
- b. neural cells.
- ~~c. endothelial cells.~~
- d. epithelial cells.
- e. mesangial cells.

*CPH
mesangial*

60. Amyloidosis may be secondary to

- a. acute osteomyelitis.
- b. ulcerative colitis.
- c. cancer of the lung.
- d. cancer of the pancreas.
- e. cancer of the cerebellum.

*AL
AA
classic
w/amy*

61. Gait is adapted to minimize energetic cost within the constraints of limb design and muscle energetics. Which of the following statements is CORRECT?

- a. Movements at the pelvis and knee limit the vertical and horizontal movement of the center of gravity.
- b. The transfer of momentum from the thigh to the leg and foot during the swing phase helps to minimize the energetic cost of swing phase.
- c. Some of the forward momentum (kinetic energy) of initial contact (= heel strike) is "stored" as gravitational potential energy by allowing the center of gravity of the body to rise during the loading response and early mid-stance phases.
- d. During late mid-stance and terminal stance phases, this gravitational potential energy is "recycled" into forward momentum as the center of gravity "falls" downward and forward.
- ~~e. All of the above are correct.~~

62. Which of the following is NOT a function of gait?

- a. shock or impact absorption
- b. balance or stabilization of the trunk on the lower limb
- c. maximizing displacement of the center of gravity of the body
- d. vertical support of the body against gravity
- ~~e. forward propulsion~~

Dr. Lh

63. Characteristics of achondroplasia include all of the following EXCEPT

- a. autosomal recessive pattern of inheritance
- b. impaired proliferation of cartilage cells.
- c. long bones are short.
- d. bones of skull and jaw unusual in size.
- ~~e. thinning of epiphyses plate.~~

64. Serum alkaline phosphatase elevation is often a feature of all of the following conditions EXCEPT

- ~~a. rickets.~~
- b. osteosarcoma.
- c. Paget's disease of the bone.
- d. osteoporosis.
- e. osteitis fibrosa cystica.

65. A 12-year-old girl was seen in the clinic because of a recent fracture of the left femur. Pertinent findings during physical examination included precocious puberty and serpinginous skin pigmentation. The most likely diagnosis of this patient is

- a. osteopetrosis.
- b. fibrous dysplasia.
- c. enchondromatosis. X
- d. osteosarcoma. X
- e. acondroplasia. X

66. Which of the following is NOT associated with osteoporosis?

- a. loss of ovarian endocrine function ✓
- b. failure of bone mineralization ✓
- c. prolonged corticosteroid therapy ✓
- d. normal serum alkaline phosphatase ✓
- e. reduced physical activity ✓

Dr. Faerber

67. True winging of the scapula occurs secondary to a lesion involving the

- a. axillary nerve.
- b. radial nerve.
- c. long thoracic nerve.
- d. dorsal scapular nerve.

68. Which of the following is a cause of posterior dislocation of the shoulder?

- a. seizures
- b. electrical shock
- c. direct trauma
- d. all of the above

69. The coracoclavicular ligament(s) is/are comprised of

- a. transverse ligament
- b. conoid ligament
- c. trapezoid ligament
- d. b and c

70. Detachment of the anterior glenoid labrum associated with an anterior dislocation of the shoulder is called a

- a. Hill Sachs lesion. - compression of
- b. Bankart lesion.
- c. osteochondral lesion. - bony detachment
- d. synovial lesion.

joint?

- a. excessive femoral anteversion
- b. hypoplastic lateral femoral condyle
- c. patella alta
- d. all of the above

72. The most definitive and reproducible test to determine ACL insufficiency is

- a. posterior drawer test.
- b. pilot shift test.
- c. Lachman test.
- d. valgus stress test at 30° of knee flexion.

73. The Thompson's squeeze test involves testing for

- a. deep venous thrombosis in the calf.
- b. shin splints in the leg.
- c. ankle instability.
- d. ruptured Achilles' tendon.

74. The terrible triad regarding the knee injuries as of 1996 most commonly involves all of the following EXCEPT

- a. ACL tear.
- b. MCL tear.
- c. patella tendon rupture.
- d. lateral meniscal tear.

1/E, 2/B, 3/E, 4/C, 5/D, 6/A, 7/D, 8/B, 9/B, 10/B
11/B, 12/A, 13/C, 14/E, 15/D, 16/D, 17/B, 18/B, 19/C, 20/B
21/C, 22/D, 23/E, 24/E, 25/B, 26/E, 27/A*, 28/A, 29/D, 30/C
31/C, 32/A, 33/C*, 34/D*, 35/D, 36/E, 37/B, 38/A, 39/D, 40/A
41/C, 42/C, 43/B, 44/A, 45/D, 46/D, 47/C, 48/E, 49/D, 50/E
51/C, 52/D, 53/C, 54/A, 55/D, 56/D, 57/E, 58/E, 59/C, 60/C*
61/E, 62/C, 63/A, 64/D*, 65/B, 66/B, 67/C, 68/D, 69/D, 70/B
71/D, 72/C, 73/D, 74/C

SCANTRON SCORE = 69.0
OTHER POINTS = 0.0
TOTAL SCORE = 69.0/ 74