AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF REHABILIATION MEDICINE

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2025

UNIT CODE: PHT 314

UNIT NAME: Musculoskeletal disorder in PT II

DATE: 14th APRIL 2025

TIME: 2:00-4:00pm

INSTRUCTIONS

1. All students will have two (2) hours to complete the examination
2. Attempt all questions as per the instruction
3. It is the student's responsibility to report any page and number missing in this paper.
4. Check that the paper is complete
5. Total number of pages is 6 including the cover.
6. Read through the paper quickly before you start.

Multiple choice question. Answer all the questions. (70 Marks)

1. During the assessment of a joint, a physiotherapist notes a limited and painful passive range of motion (PROM) with a "springy" end-feel. This finding is MOST suggestive of pathology in which of the following structures?

   a) Bursa

   b) Ligament

   c) Cartilage

   d) Muscle

2. Which of the following BEST describes the "pretest probability" in clinical decision-making?

   a) The likelihood a patient has a diagnosis after the clinical examination.
   b) The results of the current physical examination.
   c) The likelihood a patient exhibits a specific disorder before the clinical examination.
   d) The clinician's final diagnosis.

3. Which of the following activities is MOST likely to exacerbate symptoms of Cubital Tunnel Syndrome?

   a) Repetitive wrist extension exercises.
   b) Prolonged elbow extension.
   c) Repetitive elbow flexion tasks.
   d) Maintaining a neutral elbow position.

4. The patient's difficulty performing loaded multiplanar movements (squat, lunge, rotation) indicates limitations in:
   a) Joint range of motion alone.
   b) Muscle strength alone.
   c) Functional stability and integrated movement patterns.
   d) Cutaneous sensation.

5. When palpating the transverse abdominis during the assessment, where should the physiotherapist's fingers be placed?
   a) Lateral to the umbilicus

   b) Medial to the anterior superior iliac spine (ASIS)

   c) Over the rectus abdominis

   d) On the external obliques

6. In addition to gait and standing, what other positional assessment is relevant during the observation in subjective assessment of hip pathology?
   a) Prone lying
   b) Supine lying
   c) Sitting position
   d) Side lying
7. A patient undergoing the Patrick/FABER test reports pain in the anterior hip region. Which of the following is the MOST likely interpretation of this finding?
   a) Sacroiliac joint dysfunction.
   b) Piriformis syndrome.
   c) Hip joint pathology or iliopsoas involvement.
   d) Lumbar radiculopathy.
8. Which of the following best defines the gait cycle?

   a) The time from heel strike of one foot to heel strike of the opposite foot.
   b) The time from toe-off of one foot to heel strike of the same foot.
   c) The time from foot contact of one foot to the subsequent foot contact of the same foot.
   d) The time spent in the swing phase of one leg.

9. Which of the following must be documented during the 6MWT, according to the passage?

   a) Only the total distance walked.
   b) Total distance walked and the number of rests taken.
   c) Total distance walked, the number of rests taken, total rest time, use of assistive devices, and level of assistance.
   d) Only the patient's subjective pain level.

10. Which muscle is primarily associated with increased tension leading to anterior disc displacement in reciprocal clicking of the temporomandibular joint (TMJ)?
    a) Temporalis
    b) Masseter
    c) Lateral pterygoid
    d) Medial pterygoid

11. In children, which of the following sleeping positions can potentially lead to cranial changes and influence TMJ function?
    a) Sleeping on their back with proper head support
    b) Sleeping flat on one side in the direction of light
    c) Sleeping in a prone position with the head turned
    d) Sleeping with a cervical pillow maintaining neutral alignment

12. Which combination of symptoms from the provided list would raise the HIGHEST suspicion of a potential infection?

    a) Nausea/Vomiting and Change in bowel habits.
    b) Fatigue and Sleep pattern disturbance.
    c) Fever and Night sweats/Day sweats.
    d) Syncope/Dizziness and Shortness of breath.

13. In the context of DVT risk assessment for patients undergoing orthopedic surgery, what is a crucial factor to consider alongside immobilization?

a) Patient's dietary preferences
b) Patient's social interactions
c) Presence of active cancer
d) Patient's hobbies.

14. A 62-year-old male presents with persistent paresthesia and reduced sensation along the medial aspect of his right knee. He reports no recent trauma but has a history of mild lumbar disc herniation. Upon examination, you note decreased light touch sensation at the medial knee and no other significant neurological findings. Which of the following is the MOST likely cause of his sensory deficit?

a) Compression of the L5 nerve root.
b) Peripheral neuropathy affecting the common peroneal nerve.
c) Impingement of the L3 nerve root.
d) Damage to the S1 dermatome.

15. A 45-year-old patient presents with unilateral foot drop and reports difficulty extending their great toe. During your neurological examination, you find weakness in great toe extension but intact knee extension and hip flexion. Which of the following myotomes is MOST likely to be affected by this pattern of weakness?
a) L3
b) L4
c) L5
d) S1

16. A 70-year-old patient presents with a visible and palpable swelling at the posterior tip of the olecranon. You suspect olecranon bursitis. After a thorough assessment, you determine there are no signs of infection or significant trauma. Which of the following is the MOST appropriate initial physiotherapy intervention, and what is the underlying rationale?

a) High-intensity ultrasound; to promote tissue healing and reduce inflammation.
b) Gentle range of motion exercises and protective padding; to reduce irritation and maintain joint mobility.
c) Joint mobilization techniques; to restore joint alignment and reduce pain.
d) Strengthening exercises using resistance bands; to improve muscle support and reduce stress on the bursa.

17. A patient presenting with unilateral neck pain, tingling radiating into a dermatome, and increased pain with flexion is MOST likely to have:

a) Gradual onset of symptoms.
b) potential facet joint pathology
c) Potential cervical disc involvement.
d) Pain relief with neck flexion.

18. A 38-year-old manual laborer presents with chronic pain and sensory disturbances along the C8 dermatome, accompanied by thenar atrophy and clawing of the 4th and 5th digits. He reports a history of repetitive heavy lifting and prolonged gripping. During your examination, you find a positive Froment's sign and Wartenberg's sign. Imaging reveals no evidence of cervical radiculopathy or peripheral nerve compression at the wrist or elbow. Which of the following is the MOST likely location of neural tissue compromise?

a) The lower trunk of the brachial plexus
b) The posterior cord of the brachial plexus
c) The upper trunk of the brachial plexus
d) The axillary nerve within the axilla

19. A 68-year-old female patient presents to your clinic with a 6-month history of right hip pain. She describes a deep, aching pain in the groin and lateral hip region. She reports that the pain is significantly worsened by prolonged standing, walking on uneven surfaces, and pivoting movements. She experiences relief when sitting with her legs slightly abducted and externally rotated. She notes that after a period of aggravation, it takes approximately 2-3 days for the pain to return to her baseline level. She denies any constant or unrelenting pain, but describes a persistent background ache. During your physical examination, you observe limited and painful internal rotation and abduction of the right hip. Radiographs reveal mild osteoarthritic changes in the hip joint. Which of the following is the MOST appropriate initial management strategy, considering the patient's symptom behavior and clinical findings?

a) High-grade mobilization of the hip joint into internal rotation and abduction, followed by aggressive stretching of the hip flexors.
b) Instruction in a home exercise program focused on pain-free range of motion, gentle isometric strengthening in a mid-range position, and education on activity modification, emphasizing avoidance of prolonged standing and pivoting motions.
c) Application of continuous ultrasound therapy to the hip joint, combined with transcutaneous electrical nerve stimulation (TENS) for pain relief.
d) Referral for immediate corticosteroid injection into the hip joint, followed by a high-intensity strengthening program.

20. Which of the following biomechanical adaptations is the MOST likely primary compensatory mechanism used by the patient to minimize pain and maintain functional ambulation in a patient with grade 3 osteoarthritis of the hip joint?

a) Increased knee flexion during right stance phase to absorb impact.
b) Increased ankle plantarflexion on the left side to lengthen the step.
c) Lateral trunk lean towards the affected right side to reduce the abductor moment arm.
d) Increased lumbar lordosis to shift the center of mass posteriorly.

21. Your patient comes in and presents with low back pain with radiating right leg pain down to their toes. Upon your neuro screen you note that this patient's L5 and S1 dermatomes are diminished on the right side and L5 and S1 myotomes are decreased strength on the right side. According to the clinical practice guidelines for the lumbar spine, would you recommend this patient gets imaging of their lumbar spine?
    a) Yes, they have severe, progressive neurological deficits
    b) No, better to treat a few sessions and see if it gets better
    c) Yes any person with low back pain and radiating pain should get imaging
    d) No this person does not need any imaging
22. What would an X-ray show if a patient has a CAM impingement in their hip?
    a) The rim of the socket is too big and overhanging
    b) The ball is aspherical or too big for the socket
    c) The X-ray looks normal as it is a muscular reason for the impingement only
    d) The X-ray looks like it has inflammation in the hip and that is what is causing the impingement
23. If you want to assess internal rotation and adduction of the femur, what order of assessment would be most appropriate (easiest to hardest)?
    a) Squat, SL stance, Step up, Step down
    b) SL stance, Squat, Step down, step up
    c) Squat, Step up, step down, SL stance
    d) Step up, Step down, SL stance, Squat
24. A patient arrives for physical therapy with pain in right hip, with numbness and tingling down the anterior thigh. You determine through testing that this patient has lateral femoral cutaneous syndrome. Based on this diagnosis and nerve distribution what nerve test would you want to perform during your assessment?
    a) Well Leg Raise
    b) Straight Leg raise
    c) Prone knee Bend Nerve Test
    d) You do not need to perform a nerve test because the diagnosis shows it is not coming from the lumbar spine
25. What is a common movement fault for Labral Tear?
    a) Anterior glide of hip joint
    b) Posterior glide of hip joint
    c) Bent Knee fall out
    d) Excessive lumbar spine flexion
26. A patient arrives for physical therapy with pain on right lateral hip. She has pain with palpation to the greater trochanter, as well as laying on that side. Her symptoms are consistent with which of the following diagnoses?
    a) Grade 2 Hip Flexor strain
    b) Grade 1 Hip Adductor strain
    c) Trochanteric bursitis
    d) Labral tear

27. A patient comes into physical therapy with a 2-year history of pain on right posterior hip. Has been on and off for the past 2 years. If sitting and driving for long periods starts to feel tingling in the right leg down to hamstring. Which cluster of tests below is appropriate to diagnose this person with piriformis syndrome?
    a) FAIR test, Piriformis palpation, piriformis length test at 90 degrees
    b) Scour test, Click test, FADIR
    c) 40 years old, (+) prone instability test, Aberrant movement, SLR > 90 degrees
    d) Anterior Drawer, Lachman and Pivot Shift test
28. What is a common movement fault for piriformis syndrome?
    a) Anterior glide
    b) Internal rotation and Adduction of the femur
    c) Quadriceps dominance with squat
    d) Pronation of feet
29. A patient comes into your clinic and presents with anterior right knee pain, primarily when squatting or descending stairs. During a step down functional assessment demonstrates internal rotation and adduction of femur that is causing right knee dynamic valgus. With this functional movement, what muscles would you want to MMT to confirm weakness?
    a) TFL and Quadriceps Strength
    b) Gluteus Maximus and Gluteus Medius Strength
    c) Paraspinal and Abdominal Strength
    d) Calf Strength
30. What is included in the “Unhappy Triad”?
    a) PCL tear, Meniscus tear, LCL tear
    b) MCL tear, Meniscus tear, LCL tear
    c) PCL tear, ACL tear, LCL tear, MCL tear
    d) ACL tear, Meniscus tear, MCL tear
31. Your patient comes in with right low back pain. Upon your evaluation you notice decreased mobility and pain on the right side with lumbar AROM extension and lateral flexion to the right side. At this point what diagnosis and ICF category would you put this person in?
    a) Diagnosis: Disc Herniation, ICF: Low back pain with Mobility deficit
    b) Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
    c) Diagnosis: Stenosis, ICF: Low back pain with radiating leg pain
    d) Diagnosis: Facet Joint Restriction, ICF: Low back pain with Mobility deficit
32. Which of the following are ACL special tests?
    a) FAIR test, Piriformis palpation, piriformis length test at 90 deg
    b) Scour test, Click test, FADIR
    c) 40 years old, (+) prone instability test, Aberrant movement, SLR > 90 deg
    d) Anterior Drawer, Lachman and Pivot Shift test

33. Which of the following is a concerning subjective complaint for a meniscus tear that may likely lead to surgery?
    a) Locking of the knee
    b) Pain on the knee
    c) Generalized swelling
    d) Tightness in quads

34. Which is the most specific special test for a meniscus tear?
    a) Thessaly's Test
    b) McMurray's Test
    c) Lachman's Test
    d) Joint Line Pain with palpation
35. What is the common mechanism of injury for an LCL tear/sprain?
    a) Repetitive internal rotation and adduction of femur
    b) Quadriceps dominance
    c) Direct trauma to the medial knee/Varus trauma
    d) Repetitive excessive pronation of foot
36. What 3 muscles are involved with pes anserine bursitis?
    a) Sartorius, Semitendinosus (HS) and Gracilis
    b) Psoas, Semimembranosus (HS) and Gracilis
    c) TFL, Psoas and Rectus Femoris
    d) Calf, anterior tib, patellar tendon
37. What is the appropriate ICF category for Knee Osteoarthritis?
    a) Knee pain with mobility impairments
    b) Knee Pain with Movement Coordination Impairments
    c) Patellofemoral Pain
    d) Knee Pain with Muscle Power Deficits
38. A patient comes into your clinic after being in a car accident 1 week ago. He states that upon impact his knee hit the dashboard. Since the accident his knee has been swollen and notes increased instability in his knee. When examining his functional movement, you notice excessive dynamic valgus at his knee due to internal rotation and adduction of femur. What would be an appropriate special test to use for this patient?
    a) Valgus Test
    b) McMurray's Test
    c) Anterior Drawer Test
    d) Posterior Drawer test

39. A patient comes into your clinic after being in a car accident 1 week ago. He states that upon impact his knee hit the dashboard. Since the accident his knee has been swollen and notes increased instability in his knee. When examining his functional movement, you notice excessive dynamic valgus at his knee due to internal rotation and adduction of femur. What would be an appropriate special test to use for this patient?
    a) Valgus Test
    b) McMurray's Test
    c) Anterior Drawer Test
    d) Posterior Drawer test
40. Patient reports numbness and tingling from behind her knee down into her calf. Pain is worsened by sitting with legs crossed, but is better sitting with legs flat on the floor. Upon your functional exam you notice decreased dorsiflexion during gait. You perform a repetitive extension exam, and the patient reports no change in pain/numbness. What is the likely diagnosis for this patient?
        a) Common Peroneal Neuropathy
        b) Lateral Femoral Cutaneous Nerve
        c) Disc herniation of lumbar spine
        d) Calf strain
41. What are the Ottawa Ankle Rules?
        a) Lateral and Medial Malleolar Pain, Inability to weight bear 4 steps, Pain in the midfoot, Tenderness at 5th and tenderness at navicular
        b) Indirect fibular stress, Direct medial malleolar stress, midfoot and hindfoot compression
        c) Lateral and Medial Malleolar Pain only
        d) Midfoot and Hindfoot compression only

42. Your patient has decreased right ankle dorsiflexion noticed in functional assessment of squat and gait. You measure her ankle dorsiflexion in prone with full knee extension and dorsiflexion measures to 2 degrees dorsiflexion. You then measure her ankle dorsiflexion in prone with knee flexed to 90 degrees, and dorsiflexion measures to 10 degrees dorsiflexion. What does this tell you?
        a) The talocrural joint is stiff
        b) The knee extension ROM is limited
        c) Gastrocnemius and Soleus stiffness
        d) Both the talocrural joint and the gastrocnemius and soleus are stiff
43. What type of strengthening is necessary for proper rehabilitation of achilles tendonitis?
        a) Any type of strengthening, it just needs to get stronger
        b) No stretching and necessary, stretching is more appropriate
        c) Concentric strengthening
        d) Eccentric strengthening

44. What is the primary movement fault of Posterior Tibialis tendonitis?
    a) Insufficient Plantarflexion
    b) Excessive Pronation
    c) Internal rotation and Adduction of the femur due to hip weakness
    d) Insufficient 1st MTP extension
45. Where is pain located with Posterior Tibialis tendonitis?
    a) Posterior to the medial malleolus
    b) Posterior to the lateral malleolus
    c) Talocrural joint or anterior ankle
    d) In the calf primarily (posterior lower leg)
46. A patient arrives for physical therapy with left anterior ankle pain while walking. What assessments would you use to confirm a diagnosis of Anterior Tibialis Tendonitis?
    a) Palpation, MMT, and stretch the Anterior Tibialis all with pain
    b) PROM will be limited in all directions with a hard end feel
    c) MMT of Gluteus Maximus
    d) It is probably not Anterior Tibialis Tendonitis because it usually does not hurt at the anterior ankle
47. What is the appropriate ICF category for an Inversion Ankle Sprain?
    a) Ankle Pain with Muscle Power Deficits
    b) Ankle and Foot Pain with Mobility Deficits
    c) Heel Pain
    d) Ankle stability and movement coordination impairment
48. A patient arrives to physical therapy with pain at her right posterior ankle over Achilles Tendon. During your functional movement exam this patient demonstrates insufficient dorsiflexion during gait and with squatting on her right side. Upon palpation you notice a bump over her Achilles tendon, and pain with palpation. The patient also has pain at the Achilles tendon with stretching and contracting the gastrocnemius/soleus complex. Please select the appropriate diagnosis and ICF category for this patient below.
    a) Diagnosis: Posterior Tibialis Tendonitis, ICF: Ankle Pain with Muscle Power Deficits
    b) Diagnosis: Achilles Tendonitis, ICF: Ankle Pain with Muscle Power Deficits
    c) Diagnosis: Ankle Osteoarthritis, ICF: Ankle and Foot Pain with Mobility Deficits
    d) Diagnosis: Achilles Tendonitis, ICF: Heel Pain
49. What ligaments are affected with an Inversion Ankle Sprain?
    a) Distal Tib Fib Syndesmosis
    b) Anterior Cruciate and Posterior Cruciate Ligaments
    c) ATFL and Calcaneofibular Ligaments
    d) Deltoid ligaments

50. Please select the appropriate special test for Plantar Fasciitis:
    a) Anterior Drawer Test
    b) Squeeze Test
    c) Windless Test
    d) There is no special test for plantar fasciitis
51. What scenario would you use Overpressures for the lumbar spine?
    a) When you do AROM and they feel pain in their low back
    b) When you do AROM and they feel pain in their low back and radiating pain to a Lumbar extension
    c) When you do AROM and they feel no reproduction of their pain
    d) When you do AROM and the start to feel weakness
52. What nerve is involved with Morton's Neuroma?
    a) Intermetatarsal Plantar Nerve
    b) Peroneal Nerve
    c) Baxter's Nerve
    d) Medial Calcaneal Nerve
53. patient arrives for physical therapy with chronic heel pain. This patient notes that when she is walking a lot (about 30-40 minutes) she starts to get numbness/tingling in the foot and heel and has to stop. Patient does not have reproduction of pain with palpation at the medial calcaneal tubercle, but does have reproduction of pain with palpation to Abductor Hallucis. What is this patient's diagnosis and ICF category?
    a) Diagnosis: Morton's Neuroma, ICF: Ankle and Foot Radiating Pain
    b) Diagnosis: Plantar Fasciitis, ICF: Heel Pain
    c) Diagnosis: Tarsal Tunnel Syndrome, ICF: Heel Pain
    d) Diagnosis: Plantar Neuropathy, ICF: Ankle and Foot Radiating Pain
54. What is an asterisk sign?
    a) A painful movement or activity you can retest after your treatment to see if your treatment has improved their symptoms
    b) Something that does not hurt so you can go back to it to improve symptoms when they get flared up
    c) A painful activity, but you do not want to retest it ever because it is painful
    d) Always involves squatting with every diagnosis
55. What grade for reflexes would demonstrates "normal, typical reflex"?
    a) 0
    b) 1+
    c) 2+
    d) 3+
56. If you want to improve knee extension, what direction accessory glide of the tibia would you perform?
    a) Posterior glide
    b) Anterior glade
    c) Medial glide
    d) Lateral glide

57. After an ACL repair, what testing is necessary before returning to playing their sport?
    a) Hop testing
    b) Quad strengthening isolation Testing
    c) Gluteal strengthening isolation Testing
    d) Static single limb squat Testing
58. If a patient has an anterior rotated innominate on the right side, which muscles would you activate for an isometric mobilization to correct?
    a) Isometric contraction of the Transversus Abdominis
    b) Isometric Contraction of Hip extensors on the left and Hip flexors on the right
    c) Isometric Contraction of the Hip extensors and the right and Hip flexors on the left
    d) Isometric Contraction of Hip extensors on the right and Transversus Abdominis
59. Why is categorizing diagnoses in the ICF categories important?
    a) ICF creates practice guidelines. It creates a type of language for PT clinicians, instructors, students, etc. in order to know the functional limitations of the patient separate from their diagnosis.
    b) It's not important if you know the diagnosis
    c) Because it's easier to inform the patient without telling them their diagnosis
    d) It tells you what is exactly weak or strong on the person
60. A patient arrives for physical therapy with low back pain and right leg pain. She reports pain in both low back and leg worsening with sitting long periods, and any flexed position. Upon observation you see the below picture. What diagnosis and ICF category would you put this patient in?
    a) Diagnosis: Disc Herniation, ICF: Low back pain with Mobility deficit
    b) Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
    c) Diagnosis: Stenosis, ICF: Low back pain with radiating leg pain
    d) Diagnosis: Facet Joint Restriction, ICF: Low back pain with Mobility deficit
61. You have a patient that arrives with complaints of right groin pain and stiffness. Patient reports no clicking or popping in Subjective. Upon examination you note decreased right hip AROM and PROM, end feels are hard, and accessory mobility is very limited. What diagnosis and ICF category would you put this patient in?
    a) Diagnosis: Disc Herniation, ICF: Low back pain with related leg pain
    b) Diagnosis: Right Hip Labral Tear, ICF: Hip pain with Stability Impairment
    c) Diagnosis: Right Hip OA, ICF: Hip pain with Mobility deficits
    d) Diagnosis: Right Hip OA, ICF: Hip pain with Movement Coordination deficits

62. You are examining a 19-year-old male with complaints of anterior hip pain with stair climbing and squatting. He also has pain with sitting greater than 2 hours. The patient notes he played competitive rugby from age 4 to 18. He had hip pain two years ago and missed several months of playing. He has just started squatting/ weight lifting again recently. On examination, the Thomas test was limited on the involved side for iliopsoas tightness, however was pain free. Hip range of motion was within normal limits. The patient notes reproduction of his symptoms with the FADDIR/ FADIR. What is the MOST probable diagnosis based on this information?
    a) Femoroacetabular impingement syndrome (FAI)
    b) Hip flexor and Adductor strain
    c) Hip osteoarthritis
    d) Avascular necrosis
63. . A 52 -year-old male self refers to physiotherapy for evaluation and treatment of low back pain. He states he has had recurrent bouts of low back pain (LBP) over the past 12 years. For most previous episodes, the back pain resolves within a few days. In most instances, he was prescribed NSAIDs by his physician to decrease the pain. Now he feels these exacerbations last longer and occur more frequently. This most recent episode began 7 days ago. The pain is localized to the lumbar spine. He is a University professor and does not want this low back pain to cause him to miss work. His FABQ- W was 10. On examination, he demonstrates full hip range of motion bilateral without pain. He has limited and painful lumbar extension active range of motion and pain with segmental extension at L3/4. His lower extremity neurological testing (dermatomes, myotomes, reflexes and neuro dynamic tension testing) was within normal limits. Which of the following would be the MOST appropriate treatment based on your findings.
    a) Repetitive flexion exercises
    b) Repetitive extension exercises
    c) Lumbar manipulation
    d) Aerobic conditioning and education
64. You are treating a 72-year-old patient who was referred to you with a diagnosis of lumbar radiculopathy. His primary complaint is pain in the groin and inner thigh You would like to rule out the hip as a potential contributor to his symptoms. You determine that hip flexion, IR, ER, adduction and abduction are grossly normal with no pain when each motion is tested in isolation. Which test would you now use to SCREEN the hip for pain generating pathology? Choose the BEST answer.
    a) Thomas test
    b) Scour Test
    c) Trendelenburg test
    d) Trunk extension range of motion

65. A patient is referred to a physical therapist with a diagnosis of patellofemoral pain syndrome. Examination of the patient reveals the following: accentuated (increased) lateral gliding of the patella, lateral patellar tenderness, excessive pronation of the foot at mid-stance during gait, and anterolateral knee pain with partial squats. All other examination findings are negative. Which of the following would be a useful measure to determine treatment effectiveness for decreasing the patient's complaint of pain?
    a) Amount of mobility of the superior tibia- fibula articulation
    b) Independent motor control of the Vastus Medialis Oblique (VMO)
    c) Quadriceps strength
    d) Pain level during partial squat
66. You are evaluating a 22-year-old female with knee pain. You note bilateral valgus collapse on squatting below 100 degree flexion. Which of the following foot positions is MOST commonly associated with this finding?

    a) Supination
    b) Pronation
    c) Pes cavus
    d) Hallux valgus
67. James is a 17-year-old rugby player being seen for physiotherapy examination 5 days post inversion ankle sprain after stepping on an opponent's foot during a match. He was able to walk off the pitch on his own, but was not able to re-enter the match. No radiographs were taken at the hospital. He ambulates without an assistive device with a moderate limp and decreased dorsiflexion with moderate toeing out on the involved side. Swelling is most notable at the distal fibula, lateral rearfoot to midfoot. James has moderate tenderness to palpation just anterior to the distal aspect of the fibula. Which examination technique would be MOST appropriate given the above presentation?
    a) Anterior Drawer Test of the ankle
    b) Windlass test
    c) Matles test
    d) Lachman test

68. A 45-year-old female presents to a physiotherapy outpatient clinic with the complaints of right foot medial arch pain. She reports she has been attempting to jog for the first time over the past month. She is now jogging 2 miles and walking 5 miles per session. She has pain along her medial arch that is sharp especially with walking. She has minimal pain in the morning when she gets up however, the pain occurs almost immediately when she runs. She denies numbness or tingling. On observation, you note a decreased arch on the right and slight eversion of the calcaneus in standing. The pain is reproduced with palpation near the navicula and resisted inversion of the ankle. What is the MOST probable cause of the patient's symptoms?

    a) Plantar fascitis
    b) Tarsal tunnel syndrome
    c) Posterior tibialis tendonopathy
    d) Stress fracture of the fifth metatarsal

69. A patient presents with weakness of the gastroc and soleus, tibialis posterior and flexor hallucis longus. He is strong and painfree with hamstring and anterior tibialis contractions. He also reports tingling along the posterior calf. Which of the following nerves is MOST likely contributing to the patient's symptoms?
    a) Tibial Nerve
    b) Fibular nerve
    c) Sciatic nerve
    d) Femoral nerve

70. A patient presents to physical therapy with knee pain. The MRI report notes a medical collateral ligament tear with medial meniscus tear. Which motions of the knee are limited by the medial and lateral collateral ligaments?
    a) Anterior glide of tibia on femur
    b) External rotation of tibia on femur
    c) Posterior glide of tibia on femur
    d) Internal rotation of tibia on femur