AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF REHABILIATION MEDICINE

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS SEPTEMBER TO DECEMBER 2025

UNIT CODE: PHT 314

UNIT NAME: Musculoskeletal II

DATE: 2nd DECEMBER 2025

TIME: 9am-11am

INSTRUCTIONS

1. **All students will have two (2) hours to complete the examination**
2. **This is an online exam, 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 11 including the cover.**
6. **Read through the paper quickly before you start.**

Section A. Multiple choice question Answer all the questions (30 Marks)

1. A 45-year-old construction worker presents to the clinic with a six-month history of intermittent mild pain primarily during overhead activities, but is generally pain-free at rest. The pain is not significantly impacting his sleep. Based solely on the history provided in the table, what is the most appropriate initial hypothesis regarding his shoulder condition?

    A. Impingement (stage 1)
    B. Impingement (stage 2)
    C. Rotator Cuff Tear
    D. Frozen shoulder

2. A physiotherapist is evaluating a patient whose chief complaint is the inability to perform activities of daily living (ADLs) such as dressing and reaching into a cupboard, which the patient attributes entirely to a significant, global loss of shoulder motion. Which of the following conditions is the most probable initial hypothesis?

    A. Labral tear
    B. Frozen shoulder
    C. Arthritis of the shoulder
    D. Acromioclavicular joint separation

3. A 58-year-old patient reports a sharp, reproducible pain in their right shoulder that occurs only when actively lifting the arm between 70 and 110 degrees of scaption. The physiotherapist confirms that both active and passive range of motion are full and unrestricted outside of this arc. Which of the following is the most precise diagnosis or differential combination consistent with this specific presentation?

    A. Rotator Cuff Tear
    B. Subacromial Bursitis.
    C. A partial-thickness Rotator Cuff Tear.
    D. Cervical radiculopathy to the shoulder joint

4. A 25-year-old male competitive cyclist falls directly onto the point of his shoulder during a race. X-rays confirm an AC joint injury characterized by a complete tear of the acromioclavicular ligament with obvious stretching and some disruption of the coracoclavicular ligaments, but without complete separation.
Which type of Acromioclavicular Joint Separation, according to the provided classification, is most consistent with this presentation?

    A. Type I
    B. Type II
    C. Type III

D. Type IV

5. A 28-year-old construction worker presents to the clinic complaining of pain in the anterior aspect of the elbow, particularly with resisted forearm supination and elbow flexion. The pain is localized to the distal biceps tendon insertion. Based on the likely location and your clinical knowledge, which of the following is the most probable diagnosis?
    A. Pronator Syndrome
    B. Radial Tunnel Syndrome
    C. Biceps Tendonitis
    D. Lateral Epicondylopathy

6. A physical therapist is evaluating a patient with elbow pain. The therapist is attempting to rule out conditions causing pain in the anterior elbow. Which of the following conditions, listed in the provided content, is NOT typically a cause of primary anterior elbow pain?
    A. Pronator Syndrome
    B. Torn Brachialis
    C. Radiocapitellar Chondromalacia
    D. Biceps Tendonitis

7. A physiotherapy student correctly identifies Cubital Tunnel Syndrome as the second most common compression neuropathy in the upper extremity. Based on this, which condition is the most common upper extremity compression neuropathy, and which listed muscle, supplied exclusively by the ulnar nerve, would show isolated weakness during MMT in severe CBTS?
    A. Flexor Carpi Ulnaris (FCU).
    B. Flexor Digitorum Profundus to the 2nd and 3rd digits.
    C. Medial Lumbricals to the 4th and 5th digits.
    D. Dorsal and Palmar Interossei.

8. A 45-year-old computer programmer presents with chronic lateral elbow pain. After a thorough history and objective examination, the physiotherapist suspects Lateral Epicondylitis. According to the pathology described, the primary cause is an eccentric overload of the common extensor tendon resulting in hyaline degeneration. Which specific tendon origin is the most common and precise site of this injury?
    A. Origin of the Extensor Carpi Radialis Longus tendon.
    B. Origin of the Extensor Carpi Ulnaris tendon.
    C. Origin of the Extensor Carpi Radialis Brevis tendon.
    D. Origin of the Anconeus muscle tendon.

9. A patient reports pain during their provoking activity (heavy lifting) that intensifies after they stop, which corresponds to Stage 3 of Lateral Epicondylitis. In addition to

tenderness on the lateral epicondyle, which precise pair of findings best confirms the diagnosis, combining a key resisted movement test with a specialized objective test?

A. Pain with resisted wrist flexion and a deficit in posterior shoulder muscle strength.
B. Pain with resisted forearm pronation and accessory movements that are within normal limits (WNL).
C. Pain with resisted middle finger extension and painful and limited Grip strength with a dynamometer.
D. Pain with resisted wrist extension only, and pain a couple of hours after the provoking activity.

10. A 60-year-old laborer is diagnosed with a torn long head of biceps tendon following an acute traumatic event. In addition to the "audible pop" and observable retraction, the physiotherapist notes that the patient's anterior shoulder pain tends to get worse at night. Which of the following associated findings, is most important for the physiotherapist to consider as part of the management plan?

A. The patient will likely present with limited overall shoulder AROM and PROM due to the acute pain.
B. The injury is highly likely to be an isolated biceps pathology, with a low risk of other shoulder involvement.
C. The nocturnal pain is a strong indicator of a potential concomitant rotator cuff tear that must be investigated.
D. The patient's inability to perform any overhead activity is entirely attributable to the Long head biceps tear alone.

11. A 35-year-old accountant presents with intermittent low back pain that occasionally radiates to the left gluteal region. The pain is exacerbated by sitting and bending forward, and the patient reports the location of the pain sometimes shifts from the left to the right side of the back. On physical examination, their lumbar flexion is diminished and painful. The therapist instructs the patient to perform repeated lumbar extension in standing, which causes the gluteal pain to completely resolve and the central low back pain to significantly decrease. Based on the provided characteristics, which clinical phenomenon is demonstrated in this patient, and what is the most appropriate initial treatment strategy?

A. Dysfunction Syndrome; initial treatment should involve repeated movements into the limited range to remodel shortened tissue.

B. Postural Syndrome; initial treatment should involve correction of static sitting posture and avoidance of prolonged positions.
C. Derangement Syndrome with Directional Preference in flexion; initial treatment should focus on flexion-based exercises.
D. Derangement Syndrome with Directional Preference in extension; initial treatment should involve repeated lumbar extension movements.

12. A patient presents with recurrent low back pain (chronic) and reports pain specifically at the sustained end range of lumbar flexion and extension. During your assessment, you observe subtle, uncontrolled movements of the trunk during walking and bending. Which of the following is the most precise and comprehensive description of the impairments associated with this presentation, according to the Stabilization/Movement Coordination category?
    A. Acute pain with initial and mid-range Active Range of Motion (AROM) or Passive Range of Motion (PROM) and general hypermobility.
    B. Chronic pain at sustained end-range movements, aberrant movements with trunk motion, and possible hypermobility or hypomobility.
    C. Referred pain reproduced with lumbar segment provocations and diminished core function.
    D. Multiple episodes of pain, diminished core function, and hypomobility limited to the thoracic (T/L) spine.
13. A 45-year-old patient presents to your clinic with acute, subacute low back pain without lower extremity pain. During the initial evaluation, the patient scores high on the Fear Avoidance Beliefs Questionnaire (FABQ) and the Pain Catastrophizing Scale (PCS). Which of the following is the most appropriate primary intervention strategy for this patient, based on their cognitive/affective tendencies?
    A. Immediately progressing to high-intensity, localized strengthening exercises and spinal manipulation to rapidly resolve the acute symptoms.
    B. Primarily focusing on patient education and counseling regarding their pain experience.
    C. Utilizing passive modalities such as heat, electrical stimulation, and ultrasound to address the acute pain, then addressing the FABQ and PCS scores later in the treatment plan.
    D. Prescribing a strictly limited rest period for 2-3 weeks to decrease the acute pain, followed by gentle range of motion exercises.

14. A 68-year-old patient presents to your clinic with bilateral leg pain and low back discomfort. His symptoms are consistently aggravated by prolonged standing and walking, and are significantly and immediately relieved by sitting or forward bending (stooping). During a thorough mechanical assessment, repeated movements in both lumbar extension and flexion fail to centralize, peripheralize, or produce any lasting change in his symptoms. In the context of the McKenziesystem, how should this patient's presentation be most appropriately classified?

    A. Derangement Syndrome.

    B. Dysfunction Syndrome

    C. Other (Non-Mechanical) Syndrome

    D. Mechanically inconclusive.

15. A patient reports insidious onset of deep, aching pain in their wrist. Palpation reveals maximal tenderness within the boundaries of the anatomical snuff box. Considering the potential diagnoses for pain in this region, what is a serious long-term complication associated with one of the most common injuries in this area?

    A. Chronic instability due to injury to the extensor retinaculum.

    B. Avascular necrosis of Scaphoid bone.

    C. Early-onset Arthritis of the 1st Carpometacarpal (CMC) joint.

    D. Rupture of the Scapholunate ligament leading to wrist drop.

16. A patient reports insidious onset numbness and tingling in the first three fingers (thumb, index, middle) and pain worse with positioning at night, supporting a possible diagnosis of Carpal Tunnel Syndrome (CTS). Which of the following is the least likely clinical finding to be associated with an early stage or mild presentation of CTS?

    A. Positive Tinel's Sign at the wrist.

    B. Weakness and atrophy of the thenar musculature, particularly the Abductor Pollicis Brevis.

    C. Sensory deficits following the anatomical distribution of the median nerve in the hand.

    D. Positive Reverse Phalen's Test (prayer position) with symptom reproduction within 60 seconds.

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18. A 45-year-old male presents with deep anterior hip and groin pain that is exacerbated by resisted hip flexion and internal rotation. On examination, there is tenderness over the anterior hip joint region. Given the potential diagnoses listed under 'Groin' pain, which condition is most likely to present with these specific signs?

A. Iliopsoas strain
B. Iliopsoas tendinopathy
C. Hip adductor strain
D. Iliopectineal bursitis

19. A long-distance runner reports chronic, aching pain directly over the pubic bone that is aggravated by sprinting and sit-ups. Physical assessment reveals tenderness directly on the pubic symphysis and pain on resisted trunk flexion. Which of the following is the least likely initial diagnosis given the location and aggravating factors?

A. Pubic symphysis dysfunction
B. Sports hernia
C. Abdominal muscle strain
D. Osteitis Pubis

20. A physiotherapist performs the Trendelenburg test on a patient. The patient stands on their left leg (the stance leg) and lifts the right leg. Upon observation, the clinician notes that the right side of the pelvis drops. What is the most appropriate interpretation?

A. Weakness of the left Gluteus Medius muscle.
B. Weakness of the right Gluteus Medius muscle.
C. Instability of the right hip joint.
D. Tightness of the left hip adductor muscles.

21. When measuring True Leg Length, the clinician can use the Anterior Superior Iliac Spine (ASIS) to the medial malleolus OR the ASIS to the lateral malleolus. Which of the following statements best explains why the lateral malleolus might be the preferred, more precise landmark for this measurement?
    A. The lateral malleolus is consistently larger and easier to palpate than the medial malleolus.
    B. The medial malleolus can be covered by a larger portion of the medial calf soft tissue leading to tape measure deviation.
    C. Measuring to the lateral malleolus excludes the influence of the tarsal bone length on the measurement.
    D. The lateral malleolus is the most distal bony point of the tibia, making it a more accurate endpoint.
22. A 19-year-old college sprinter and long jumper presents with insidious onset of anterior knee pain. He reports the pain is most pronounced during the take-off and landing phases of his jumps, and he also feels a dull ache after prolonged sessions of deep stretching into full knee flexion. Based on the specific aggravating activities mentioned, what is the most likely diagnosis?
    A. Quadriceps strain
    B. Patellar Tendonitis
    C. Patellofemoral Pain Syndrome
    D. Infrapatellar Fat Pad Impingement.
23. A 22-year-old semi-professional basketball player reports that during a fast break, he performed a non-contact stop-and-pivot maneuver to change direction rapidly. He felt an immediate, sharp pain and a distinct 'pop' in his knee, followed by rapid swelling. He was unable to bear weight immediately afterward. Which of the following injuries is least likely to be the primary diagnosis based solely on this mechanism of injury?
    A. Anterior cruciate ligament tear
    B. Patellar subluxation
    C. Medial collateral ligament tear
    D. Lateral meniscal tear.
24. A therapist is reviewing the chart of a patient who sustained a knee injury in an industrial accident. The report states the patient was struck by a heavy object that delivered a substantial force to the anterior aspect of the proximal tibia while the knee was flexed, forcing the tibia posteriorly. The patient later reported they were unable to

ambulate immediately after the injury. Which of the following is the most likely ligament that is injured from the above history?

A. Anterior Cruciate Ligament
B. Posterior Cruciate Ligament.
C. Medial Collateral Ligament
D. Patellar subluxation

25. If a patient with an acute ACL injury exhibits significant hamstring guarding, how would this guarding most likely affect the test result and its validity?

A. It would falsely increase the amount of anterior tibial translation, leading to a false positive result.
B. It would restrict anterior tibial translation, potentially leading to a false negative result.
C. It would increase the specificity of the test, making a positive result more conclusive.
D. It would decrease the knee flexion angle, leading to increased pain and a non-diagnostic result.

26. A patient with Patella Femoral Pain Syndrome is tested for the six factors in the clinical prediction rule. Which of the following findings would be considered negative for PFRS.

A. Great toe extension measures 70 degree
B. Relaxed Calcaneal Stance Position (RCSP) is 3 degree of valgus.
C. The patient reports difficulty walking.
D. Tight hamstrings in the 90/90 SLR test and JROM measurement of 105 degree of knee extension.

27. A 35-year-old patient with chronic low back pain presents with a positive prone instability test, aberrant movement during lumbar range of motion (ROM), and a Straight Leg Raise (SLR) 105 degree. Based on the Clinical prediction rule criteria, which statement is the most accurate interpretation of the SLR finding and its contribution to the cluster?

A. The SLR of 105 degree is a negative finding because the test should measure hamstring length, not instability.
B. The SLR of 105 degree is a positive finding, suggesting general tissue laxity which contributes to segmental instability.

C. The SLR of 105 degree is an inconclusive finding because the criterion requires an SLR of exactly or greater.

D. The SLR of 105 degree is a negative finding because it indicates excessive hamstring flexibility, which is unrelated to coordination impairment.

28. Which of the following special tests is primarily used to detect a torn knee meniscus?

A. McMurray test

B. Anterior knee drawer test

C. The lever sign

D. Pivot shift test

29. Which of the following best describes Nociception?

A. The subjective, emotional, and sensory experience that is often, but not always, associated with actual or potential tissue damage.

B. The process by which the central nervous system modifies the excitability of dorsal horn neurons, leading to increased sensitivity.

C. The neural process of encoding and processing noxious stimuli, which is necessary, but not sufficient, for the experience of pain.

D. A protective reflex arc that bypasses the cerebral cortex, leading to rapid withdrawal from a painful stimulus.

30. A 58-year-old patient reports to a physiotherapist with neck pain following a motor vehicle accident. During the subjective examination, the patient states that certain neck movements sometimes trigger brief episodes of dizziness, blurred vision, and difficulty swallowing. Based on the symptom cluster provided, which diagnosis should the therapist immediately suspect and screen for?

A. Cervical radiculopathy

B. Vertebral artery insufficiency

C. Cervicogenic headache

D. Upper cervical ligamentous instability

Section B. Short structured questions. Answer all the questions.

31. Define cervicogenic headache (2 Marks)

32. Explain the distinction between the phenomena of pain centralization and pain peripherization within the context of the McKenzie mechanical diagnosis and therapy (MDT) system (4 Marks)

33. Discuss 4 tear patterns of traumatic meniscus tears. (4 Marks)

34. Describe the five orthopaedic provocation tests for Sacroiliac joint (5 Marks)
35. Describe how to perform the prone instability test for the lumbar spine (5 Marks)

Section C. Long structured question. (20 Marks)

1. A 35-year-old female presents to your clinic with intermittent, recurrent, non-specific low back pain (LBP) of six months duration. She reports that her LBP is exacerbated by prolonged standing and returns consistently after physical activity.

   Your assessment reveals the following key findings:

   a. Age: 35 years old.
   b. Prone Instability Test: Positive.
   c. Movement Assessment: Observation of a "hip-hitching" and momentary "catch" or shake in the lumbar spine during the return phase from forward bending Aberrant Movement.
   d. Straight Leg Raise Measured at 100 degrees bilaterally.

   Based on the provided findings and the Coordination Impairment/Stabilization Test Item Cluster (CPR), complete the following tasks:

   State the primary musculoskeletal classification and justify it using the CPR criteria and outline the primary goal and develop a targeted initial treatment plan naming the specific muscles that should be strengthened and detailing the coordination technique you would employ.