



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCE  
DEPARTMENT OF REHABILITATION MEDICINE  
BACHELOR OF SCIENCE IN PHYSIOTHERAPY  
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS**

**UNIT CODE: PHT 311                      UNIT NAME: CLINICAL REASONING**

**DATE:                      FRIDAY 13<sup>TH</sup> DECEMBER 2024**

**TIME:                      TWO HOURS**

**START:                      11.15am                      STOP : 1.15pm**

**INSTRUCTIONS (physical exams)**

- 1. Do not write on this question paper**

**INSTRUCTIONS (Online examinations)**

- 1. This exam is marked out of 70 marks**
- 2. This Examination comprises 3 Sections**
- 3. This exam will take 2 Hours**

**SECTION 1. Attempt all the questions in this section (30 Marks)**

1. Clinical reasoning can be defined as:
  - A. The ability to memorize medical facts and figures.
  - B. A complex cognitive process leading to meaningful interpretation of patients' problems and formulation of an effective management plan.
  - C. A part of the physical examination of a patient.
  - D. A method of establishing evidence-based practice to be utilized in management of patient
  
2. Which of the following is NOT a significance of clinical reasoning in healthcare?
  - A. Accurate diagnosis
  - B. Effective goal setting
  - C. Evidence-based practice
  - D. Patient satisfaction
  
3. Which of the following is NOT a bias associated with clinical reasoning?
  - A. Publication bias
  - B. Availability bias
  - C. Recency bias
  - D. Confirmation bias
  
4. What is a key limitation of pattern recognition in clinical reasoning, particularly for students and newly qualified physiotherapists?
  - A. It requires extensive clinical experience.
  - B. It can lead to biases in decision-making.
  - C. It is not applicable to all clinical scenarios.
  - D. It is time-consuming and inefficient.
  
5. Which of the following statements accurately describes the relationship between the hypothetico-deductive model (HDM) and diagnostic reasoning in physiotherapy?
  - A. The HDM is a narrower framework used specifically in physiotherapy, while diagnostic reasoning is a broader approach used in various scientific disciplines.
  - B. Diagnostic reasoning is a specific application of the HDM tailored to the physiotherapy field.
  - C. Both the HDM and diagnostic reasoning are interchangeable terms used to describe the same process in physiotherapy.
  - E. The HDM is a more complex process than diagnostic reasoning, involving more steps and considerations.

6. Which of the following is a key characteristic of the hypothetico-deductive model (HDM) that distinguishes it from diagnostic reasoning in physiotherapy?
  - A. Focus on identifying a patient's specific condition.
  - B. Use of hypotheses and observations to test ideas.
  - C. Application to the physiotherapy field only.
  - D. Emphasis on clinical expertise and experience.
  
7. Which of the following is NOT a key component of clinical decision making?
  - A. Patient information
  - B. Medical knowledge
  - C. Contextual factors
  - D. Healthcare provider's intuition
  
8. What is the primary benefit of good communication skills in physicians, according to the provided information?
  - A. Improved patient diagnosis
  - B. Increased physician income
  - C. Enhanced patient outcomes
  - D. Reduced healthcare costs
  
9. What is the primary role of the receiver in active listening?
  - A. To passively absorb information
  - B. To interrupt the sender
  - C. To provide feedback and clarify understanding
  - D. To dominate the conversation
  
10. Compared to closed-ended questions, open-ended questions typically result in:
  - A. Shorter, more focused answers.
  - B. More concise and specific information.
  - C. A greater understanding of the patient's experience.
  - D. A quicker completion of the patient interview.
  
11. Which of the following is an example of an open-ended question?
  - A. "Do you have a headache?"
  - B. "Are you feeling better today?"
  - C. "What brings you in today?"
  - D. "Is your pain sharp or dull?"
  
12. The first item listed on a patient problem list is typically:
  - A. The patient's age
  - B. The date of the visit
  - C. The acute presenting problem
  - D. The patient's medical history

13. Which of the following is NOT typically included in a patient problem list?
- A. Current diagnoses
  - B. Past diagnoses
  - C. Patients' vital signs
  - D. Current symptoms
14. What is the primary purpose of using a tool like the SCRIPT in clinical reasoning?
- A. To replace clinical intuition with a structured approach.
  - B. To provide a systematic framework for data gathering and decision-making.
  - C. To eliminate the need for clinical mentors.
  - D. To standardize patient care across different settings.
15. What does the acronym SINSS stand for in the context of symptom assessment?
- A. Symptoms, Intensity, Nature, Stage, Severity
  - B. Severity, Irritability, Nature, Stage, Stability
  - C. Symptoms, Intensity, Nature, Stage, Stability
  - D. Severity, Intensity, Nature, Stage, Stability
16. If a patient's symptoms are judged to be severe and irritable, how should the examination be conducted according to the SINSS framework?
- A. A comprehensive examination should be performed to identify all underlying conditions.
  - B. The examination should be limited to the first onset or increase of symptoms, and the overall number of examination procedures should be reduced.
  - C. The examination should focus on psychological factors and stress management techniques.
  - D. A referral to a specialist should be recommended immediately.
17. Which of the following best describes the "Stage" of a disorder according to the SINSS framework?
- A. The severity of the symptoms.
  - B. The underlying cause of the disorder.
  - C. The duration of the symptoms.
  - D. The patient's overall health status.
18. What is the primary purpose of critical thinking in clinical reasoning?
- A. To gather information quickly
  - B. To arrive at a diagnosis immediately
  - C. To provide patient care
  - D. To analyze information and make sound judgments

19. The relationship between critical thinking and clinical reasoning can be best described as:
- A. Independent
  - B. Interdependent
  - C. Dependent
  - D. Competitive
20. In the process of developing a hypothesis, which step involves identifying potential diagnoses based on the information gathered about the patient's symptoms and presentation?
- A. Gather information
  - B. Analyze the information
  - C. Generate the initial hypothesis
  - D. Prioritize the hypothesis
21. A 45-year-old male patient presents to the physiotherapy department with a history of low back pain for the past 6 months. He reports that the pain is aggravated by prolonged sitting and lifting heavy objects. He has a previous history of hypertension and type 2 diabetes mellitus, both of which are currently well-controlled with medication. The patient also underwent a lumbar laminectomy 2 years ago for a herniated disc. From the information provided, which condition(s) has been resolved
- A. Herniated disc
  - B. Hypertension and type 2 diabetic mellitus
  - C. Back pain
  - D. None of the above
22. 40-year-old female, presenting with a history of low back pain for the past 6 months. Pain is aggravated by prolonged sitting or standing and relieved by rest. There is no history of trauma or previous back surgery. The physiotherapist has hypothesised that the following are the causes of her low back pain, mechanical low back pain, Facet joint arthropathy, and spondylolisthesis. Given the patient's history of low back pain, which of the following hypotheses is most likely?
- A. Facet joint arthropathy
  - B. Spondylolisthesis
  - C. Mechanical back pain
  - D. Sacro-illiac joint pain

23. A 25-year-old male professional soccer player presents to the physiotherapy department with a history of acute right ankle pain. The injury occurred during a match two days ago when he landed awkwardly from a jump. He reports immediate pain and swelling, with limited range of motion and difficulty walking. Based on the patient's history, the physiotherapist develops three hypotheses; fracture of the ankle, ankle sprain, tear of the Achilles tendon and chronic instability of the ankle. Given the patient's history, which of the following is the most likely diagnosis?
- A. Ankle sprain
  - B. Ankle fracture
  - C. Chronic ankle instability
  - D. Achilles tendon rupture
24. To confirm the diagnosis and rule out other possibilities, which of the following tests would be most appropriate?
- A. X-ray of the ankle
  - B. MRI of the ankle
  - C. Ultrasound of the ankle
  - D. All of the above
25. A 65-year-old woman presents to the physiotherapy department with a 2-year history of knee pain, stiffness, and swelling. She reports that the pain is worse with activities like walking, climbing stairs, and prolonged standing. Rest and non-steroidal anti-inflammatory drugs provide some relief. The patient has a history of hypertension and type 2 diabetes mellitus. Physical examination reveals crepitus, tenderness, swelling, and decreased range of motion in the knee joint.
- Based on the patient's history and examination findings, the physiotherapist develops several hypotheses. Which one of the following is the most likely hypothesis?
- A. Rheumatoid arthritis
  - B. Osteoarthritis
  - C. Gout
  - D. Tendonitis
26. A 28-year-old female presents to the physiotherapy department with a 3-month history of shoulder pain. She describes the pain as dull and aching, primarily located on the front and side of her shoulder. The pain worsens when she reaches overhead, such as when getting dressed or reaching for items on a shelf. Which is the most likely hypothesis?
- A. Arthritis of the shoulder
  - B. Frozen shoulder
  - C. Rotator cuff syndrome
  - D. Shoulder impingement syndrome

27. Which of the following models of clinical reasoning primarily involves generating and testing hypotheses about a patient's condition?
- A. Narrative reasoning
  - B. Hypothetico-deductive reasoning
  - C. Procedural reasoning
  - D. Conditional reasoning
28. Why is it important to consider patient tolerance when conducting physical examinations?
- A. To avoid aggravating the patient's condition.
  - B. To establish rapport with the patient.
  - C. To complete the examination as quickly as possible.
  - D. To minimize the need for further examinations.
29. Which of the following best defines the term, hypothesis in clinical reasoning in physiotherapy?
- A. A definitive diagnosis based on subjective assessment.
  - B. A standardized treatment plan for a specific condition.
  - C. A tentative explanation for a phenomenon that is based on clinical observation and assessment and that can be tested
  - D. A summary of information collected during the objective assessment
30. Which of the following is NOT true about the SCRIPT tool used by physiotherapists?
- A. SCRIPT is a diagnostic tool that can definitively identify a patient's condition.
  - B. SCRIPT is a tool designed to guide physical therapists through the process of clinical reasoning.
  - C. SCRIPT can be used by mentors to assess a trainee's clinical decision-making skills.
  - D. It stands for Systematic Clinical Reasoning in Physical Therapy

**SECTION B. Short structured question. Answer all the question (20 Marks)**

31. Define hypothesis in clinical reasoning (1 Mark)
32. A 68-year-old female presented to the physiotherapy department with a history of a stroke that occurred 5 years ago, resulting in left-sided hemiparesis. The hemiparesis has been classified as inactive since the acute phase of the stroke. She has been attending physiotherapy sessions regularly to improve her mobility and strength.

Additionally, the patient has a history of hypertension, which was diagnosed 15 years ago and is currently well-controlled with medication. She also has atrial fibrillation, diagnosed 8 years ago, and is taking anticoagulant medication. Finally, the patient was diagnosed with osteoporosis 3 years ago and is currently being treated with medication.

Her current complaints include increased pain in her left shoulder and wrist, which began approximately 2 months ago. The pain is aggravated by movement and activities of daily living (ADLs).

Prepare a conclusive patient problem list (5 Marks).

33. List the benefits of diagnostic model of clinical reasoning (4 Marks)
34. Explain why it is necessary to ensure the therapists observes tolerated examination and intervention strategies during the management of the patient (4 Marks)
35. Discuss the two principles that guide prioritisation in the development of patient problem list during examination (6 Marks)

**Section C. Long structured answers. Answer the question below (20 Marks)**

36. In clinical reasoning, a hypothesis is a crucial step in the diagnostic process. Discuss the various methods that can be utilised to formulate an hypothesis (20 Marks)

- a) Hypothetical deductive reasoning
- b) If-then-but- therefore
- c) Probabilistic analysis
- d) Cause-effect analysis
- e) Combination of probabilistic and cause effect analysis