



MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

THIRD YEAR, FIRST TRIMESTER EXAMINATION

FOR THE DEGREE
OF

BACHELOR OF SCIENCE IN PHYSIOTHERAPY (UPGRADING)
MAIN PAPER

COURSE CODE: HPT 317

COURSE TITLE: CLINICAL METHODS

DATE: WEDNESDAY 20TH APRIL 2022

TIME: 11:00 AM-2:00PM

INSTRUCTIONS TO CANDIDATES

Answer All Questions

Section A: Multiple Choice Questions (MCQ)

20 Marks.

Section B: Short Answer Questions (SAQ)

40 Marks.

Section C: Long Answer Question (LAQ)

40 Marks

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This paper has 8 pages

SECTION A: MULTIPLE CHOICE QUESTIONS (MCQ) 20 MARKS*CASE 1*

A 44-year-old female nurse presents with a two-week complaint of left sided neck pain and headache in the left suboccipital region. There is no history of trauma, but she noticed the pain started the day after getting her hair done. The pain was dull but became worse with right rotation of her neck and when looking up. The patient has no dizziness, diplopia, drop attacks, dysarthria, dysphagia, facial numbness, or nystagmus, but did describe some nausea with neck movements. She is taking medication for high cholesterol. On examination, it was noted that when the patient protruded her tongue it deviated to one side.

QUESTIONS 1 TO 4 refer to CASE 1

1. In this scenario, which cranial nerve is at fault?
 - A. IX
 - B. X
 - C. XI
 - D. XII
2. Why would you examine cranial nerve function in this patient?
 - a) Normal cranial nerve function is linked to adequate blood supply via the vertebralbasilar system
 - b) The vertebral artery supplies blood to the tongue muscle
 - c) Cranial nerve dysfunction is a primary cause of headaches
 - d) Fasciculation of the ipsilateral side of the tongue would suggest damage to the cranial nerve nuclei
3. Which of the following tests, if positive, would implicate the cervical spine as the source of the patient's nausea during head movement?
 - a) The Romberg's Test performed in standing position with the eyes closed
 - b) After being fitted with a cervical collar the nausea improves
 - c) Hautard's Test performed with the patient sitting, eyes closed, and neck extended
 - d) The vertebral artery test, including extension and rotation
4. Considering the subjective and objective findings presented by this patient, what would be the appropriate course of action for the physiotherapist to take?
 - a) Revisit history for additional risk factors of arterial disease. Check patient's blood pressure. Complete the neurological examination starting with the least provocative test progressing to more aggressive procedures. Contact patient's physician and share your findings.
 - b) Call 911. Do not allow patient to leave. Monitor the patient's vitals. Calm patient. Write a note to the emergency room physician and pin to the patient's

9. After the client has been extubated, what treatment would most likely improve the client's ventilation?
- Breathing exercises and positioning.
 - Mechanical vibrations.
 - Resisted expiratory muscle training.
 - Humidification.
10. A 65-year-old client presents with disequilibrium and dizziness for the past few days. He reports having trouble walking. He was recently treated for neck injury sustained from a motor vehicle collision. Which of the following are likely to be positive for cerebellar disease?
- Berg balance test, and Dix-Hallpike test
 - Presence of nystagmus, and finger to nose test
 - Combined neck rotation and extension test, and cranial nerve test
 - Body under head rotation, and heel to shin test
11. A 20-year-old client comes to a physiotherapy clinic reporting headaches and neck pain. Postural evaluation shows a significant forward head posture. Which one of the following muscles is likely to be tight given this scenario?
- Rhomboids
 - Rectus capitus posterior major
 - Longus coli
 - Longus capitus
12. A 65-year-old male patient presents with a 2h history of altered mental status. He was found unresponsive on the couch while watching Jurassic World. T/M revealed the following: • MMT: 4/5 LLE; 0/5 RLE; 5/5 BUE • Facial: Sensation intact; Motor- able to puff out cheeks, swallow, and smile • Gag Reflex intact • No tongue deviation. Which of the following best categorizes this person's stroke?
- Right ACA Stroke
 - Left ACA Stroke
 - Right MCA Stroke
 - Left MCA Stroke
 - Right Medullary Stroke
13. A 59-year-old male patient presents to the clinic with a 7-hour history of various neurologic symptoms. • Unable to detect burning sensations on left side • Gag reflex is absent • Unable to shrug right shoulder. Which of the following best categorizes this stroke?
- Right Lateral Pontine Stroke
 - Left Lateral Pontine Stroke
 - Right Lateral Medullary Stroke
 - Left Lateral Medullary Stroke
 - Left Medial Medullary Stroke
14. According to the Rancho Los Amigos Scale, Level VIII is reported as
- Confused appropriate
 - Localized response

- clothes. Have someone wait with the patient until ambulance arrives.
- c) Apply the vertebral artery stress test. If the test is negative complete the neurological examination starting with the least provocative test progressing to more aggressive procedures. Contact the patient's physician and share your findings.
 - d) Apply the vertebral artery stress test. If the test is positive have someone call 911. Monitor the patient's vital signs until the ambulance arrives. Calm the patient and do not allow her to leave. Contact a family member and the patient's doctor.
5. What are the biomechanical consequences of tightness in the tensor fascia lata muscle in gait?
- a) An increase in medial rotation of the hip and ipsilateral inferior movement of the pelvis
 - b) Reduced lateral distractive forces on the patella, with internal rotation of the tibia
 - c) An increase in hip adduction and external rotation on the weight-bearing side
 - d) An inability to close pack the knee at heel strike
6. A patient presents with a positive hip flexion/adduction quadrant test. Combined with this finding, which one of the following would lead the therapist to suspect a tear of the acetabular labrum?

- a) Pain on palpation iliopsoas
- b) Capsular pattern hip
- c) Morning stiffness
- d) Subjective history of clicking and catching

A 28-year-old man is admitted to the Intensive Care Unit with a differential diagnosis of right lower lobe pneumonia and respiratory distress. The client is intubated and ventilated. The lab values are pH 7.38; PaCO₂ 60; PaO₂ 55; HCO₃ 30.

7. These laboratory values are most likely to be associated with which of the following conditions?
- a) Respiratory acidosis with metabolic compensation.
 - b) Respiratory alkalosis without metabolic compensation.
 - c) Metabolic acidosis with respiratory compensation.
 - d) Metabolic alkalosis without respiratory compensation.
8. On examination of the client, which of the following findings would be most consistent with the diagnosis of right lower lobe (RLL) pneumonia?
- a) Hyperresonance on percussion of the RLL.
 - b) Decreased tactile fremitus over the RLL
 - c) Increased chest wall mobility on right side.
 - d) Bronchial breath sounds over the RLL.

- c) No response
 - d) Purposeful and appropriate response
15. According to the ASIA scale, for an individual to be classified with a C7 SCI, the person must exhibit which of the following MMT patterns?
- a) 1/5 triceps (C7) and 5/5 extensor carpi radialis (C6)
 - b) 3/5 triceps (C7) and 5/5 extensor carpi radialis (C6)
 - c) 3/5 triceps (C7) and 3/5 flexor digitorum profundus (C8)
 - d) 5/5 triceps (C7) and 3/5 flexor digitorum profundus (C8)
16. What spinal cord level(s) are related to autonomic dysreflexia?
- a) S1-S5
 - b) C1-T6
 - c) T1-T12
 - d) T6-L5
17. John had a brain injury 2 weeks ago and he can now turn his head to your direction when you call him. What level of cognition would you grade him in the ranchos Los Amigos scale?
- a) Level III
 - b) Level IV
 - c) Level V
 - d) Level II
18. Physical therapy treatment for patients with Parkinson disease includes
- a) teaching the individual to turn en bloc
 - b) training the individual not to focus on foot position
 - c) shortening step length to prevent freezing
 - d) using verbal and visual cueing
19. According to the American Spinal Injury Association (ASIA) International Standards for Neurological Classification of Spinal Cord Injury, testing of a key muscle should begin in which grade position?
- a) 1
 - b) 2
 - c) 3
 - d) 4
20. Which ROM are mostly limited in hip osteoarthritis
- a) Flexion, extension, internal rotation
 - b) Abduction, external rotation, flexion
 - c) Flexion, internal rotation, adduction
 - d) Abduction, adduction, internal rotation

SECTION B: SHORT ANSWER QUESTIONS (SAQ)**40 MARKS****ANSWER ALL QUESTIONS.**

1. Describe autogenic drainage technique to clear secretions (5 marks)
2. Describe your intervention plan for a person demonstrating freezing of gait (5 marks)
3. differentiate between upper motor neuron weakness and lower motor neuron weakness (5 marks)
4. 22 y/o woman fell from a second-floor balcony during a “drinking contest”. She sustained a basilar skull fracture with contusion of brain stem on imaging. Her initial GCS was 13. She lost consciousness for 3 hours immediately following the incident. She experienced post-traumatic amnesia for 12 hours surrounding the incident. She is currently classified as a RLASCF Level VIII. Her goal is to get up and out of a chair without feeling off-balance.
 - a) How will you modify your approach for an individual classified as a RLASCF Level VIII (purposeful and appropriate)? (3 marks)
 - b) How would you describe this individual’s prognosis for recovery (2 marks)?
5. What are the seating principles to consider when prescribing a wheelchair to a patient? (5 marks)
6. Mr. Ouma comes to the outpatient clinic with low back pain radiating to the left thigh posteriorly with occasional numbness. The symptoms started 3 weeks ago after lifting a heavy load. You make a hypothesis of lumbar disc herniation.
 - a) Describe test to rule out lumbar disc herniation (5 marks)
 - b) Describe test to rule in lumbar disc herniation (5 marks)
7. Ayuma sustained knee injury while playing soccer and was rushed to the emergency department. What are the key indicators for a knee x-ray to be performed (Ottawa knee rules)? (5 marks)

SECTION C: LONG ANSWER QUESTIONS (LAQS)
ANSWER ALL QUESTIONS EACH ONE IS 20 MARKS

40 MARKS

1. 20 y/o collegiate athlete collided with another player while playing soccer. She lost consciousness for several minutes and was subsequently confused. She lives alone but is staying with family. She is 5 weeks post injury but continuing to struggle integrating school and practice. She c/o headache and dizziness. Family is concerned she is losing her balance while standing and walking, particularly in a busy environment. Her goal is to be able to return to living at her apartment.

- a) What probing questions would be useful relative to the report of the struggle integrating school and athletics? (4 marks)
- b) How will you specifically address the cognitive impairment? (4 marks)
- c) What questions should follow the concern of headache and dizziness? (4 marks)
- d) What examination procedures would be most useful? (4marks)
- e) How would you describe her prognosis based on the contextual factors? (4 marks)

2. Kathryn is a 48-year-old Caucasian female who was referred to your outpatient physical therapy clinic for “dizziness”. She tells you that her dizziness began four months ago after she had a car accident. Her car was hit on the passenger side by a car running a red light. She reports that after the accident she went to the ED and was provided a soft collar to wear for a few weeks. She was cleared of any cervical fractures or cranial bleeding while at the ED. However, after returning home she noticed that she would have occasional dizziness when turning quickly or looking over her shoulder when driving. She describes the dizziness as a spinning sensation that lasts 2-3 minutes. Since the dizziness occurs while driving, she has had to have her friend drive her places. She reports that she has not had any falls and is not taking any medication except Motrin as needed for occasional neck pain. She describes her pain as a dull ache that is worse with rotation to the right and left 4/10. She does not report any hearing or vision changes. Kathryn is eager to know what is causing her dizziness so that she can return to driving and exercising with her friends after work at the local YMCA

- a) Decide what examination techniques you will need to include in your evaluation (10 marks)

- b) Based on these objective findings from your exam write out a movement diagnosis (2 marks)
- c) Using your movement diagnosis, what is your treatment and patient education plan for the remainder of the session (8 marks)