



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

FORTH YEAR, FIRST TRIMESTER EXAMINATIONS

FOR THE DEGREE

OF

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

COURSE CODE: BSP 413

COURSE TITLE: NEUROPHYSIOTHERAPY

DATE: TUESDAY 11TH APRIL 2023

TIME: 8:00-10:00 AM

INSTRUCTIONS TO CANDIDATES

Answer all Questions

Sec A: Multiple Choice Questions (MCQ) 20 Marks

Sec B: Short Answer Questions (SAQ) (40 marks)

Sec C: Long Answer Questions (LAQ) (40 marks)

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.



SECTION A: MULTIPLE CHOICE QUESTIONS**(20 marks)**

1. Saddle anesthesia is characterized of which of the following conditions below?
 - A. Spinal arachnoiditis
 - B. Lesions of the centrally lying roots within the cauda equina
 - C. Bilateral SI radiculopathies
 - D. Pelvic nerve injury
2. Which of the following statements regarding bowel dysfunction in spinal cord injury (SCI) is correct?
 - A. In SCI the predominant problem is constipation secondary to immobility
 - B. The majority of patients with SCI do not need to do regular manual evacuation
 - C. The best management option for patients with SCI is colostomy
 - D. Autonomic dysreflexia can be precipitated by fecal impaction
3. Proprioceptive sensation ascend in spinal cord through which columns?
 - A. Posterior column
 - B. Lateral column
 - C. Anterior column
 - D. Antero lateral column
4. Merkel's disk is for
 - A. Touch – [pressure
 - B. Touch – temperature
 - C. Two-point discrimination
 - D. Stereognosis
5. A 52-year-old male is referred to you with GBS. Symptoms started 1 week with symptoms still progressing. He is now unable to walk or manage at home so you arrange admission to hospital. At this stage. It would be most appropriate to treat him with
 - A. Oral corticosteroids
 - B. Supportive care
 - C. A fall prevention program
 - D. Intravenous immunoglobulin
6. The most limited motion in the lumbar spine is?
 - A. Flexion
 - B. Lateral bending
 - C. Rotation
 - D. Extension
7. Which of the following is correct regarding the nerve supply to the bladder?
 - A. Parasympathetics from L2-L4 are motor to the detrusor via the presacral nerves
 - B. Sympathetic from the sacral plexus are motor to the bladder neck via the presacral nerves
 - C. Somatics from L2- L4 are motor to the pelvic floor via the pudendal nerve
 - D. Sympathetics from T10-L2 are motor to the bladder neck via the inferior hypogastric plexus
8. A client is admitted with a diagnosis of stroke. She has expressive aphasia. Identify the area where the client's stroke has occurred.
 - A. Temporal lobe
 - B. Frontal lobe
 - C. Occipital lobe
 - D. Parietal lobe
9. A patient in the intensive care is diagnosed with a closed head injury. Which data would warrant immediate intervention?
 - A. The client refuses to cough and deep-breathe.
 - B. The client's Glasgow Coma Scale goes from 13 to 7.
 - C. The client complains of a frontal headache.
 - D. The client's Blood pressure is 100/70.

10. A patient who has suffered a cutting injury to the entire left half of the spinal cord at the T8 level is being examined by a physical therapist. Which of the following impairments would be MOST apparent on the ipsilateral lower extremity?
 - A. Loss of pain and temperature sensation
 - B. Loss of movement and light touch sensation
 - C. Loss of peripheral smooth muscle control
 - D. Loss of coordination and accuracy.
11. A very useful principle of learning is that a new response is strengthened by:
 - A. Punishment
 - B. Biofeedback
 - C. Discriminative Stimulus
 - D. Reinforcement
12. Amphetamine and cocaine and most excitatory drugs work by:
 - A. Reducing the threshold at which the action potential is triggered
 - B. Changing levels of certain neurotransmitters in the synapse
 - C. Activating the endorphin system
 - D. Facilitating the mechanisms of reciprocal inhibition
13. When evaluating an ABG from a client with subdural hematoma, you note that the PaCo₂ is 30 mmHg. Which of the following responses best describes this result?
 - A. Appropriate. Lowering carbon dioxide (Co₂) reduces intracranial pressure (ICP)
 - B. Emergent; the client is poor oxygenated
 - C. Normal
 - D. Significant; The client has alveolar hypoventilation
14. A student is playing rugby, hits his head during a tackle, and shows neurological defects although he is alert and oriented. Which of the following would you do first?
 - A. Assess full ROM to determine extent of injuries
 - B. Call for an ambulance
 - C. Immobilize the clients head and neck.
 - D. Open the airway with the head tilt chin lift maneuver
15. A 30-year-old was admitted to the high-dependency unit with a C5 fracture from a MVA. Which of the following assessments would take the priority?
 - A. Bladder distension
 - B. Neurological deficits
 - C. The clients feelings about the injury
 - D. Pulse ox readings
16. A 22-year-old with quadriplegia is apprehensive and flushed, with a blood pressure of 210/100 and a heart rate of 50 bpm. Which of the following interventions would be done first?
 - A. Place the client flat on the bed
 - B. Request the nurse to assess the patency of the indwelling urinary catheter
 - C. Request the nurse to give medication
 - D. Raise the head of the bed immediately to 90 degrees
17. Which of the following interventions describes an appropriate bladder program for a client in rehabilitation for a spinal cord injury
 - A. Insert an in-dwelling urinary catheter to straight drainage
 - B. Schedule intermittent catheterization every 2 – 4 hrs
 - C. Perform a straight catheterization every 8 hours while awake
 - D. Perform Crede's maneuver to the lower abdomen before the client voids
18. A lumbar puncture is performed on a child suspected of having bacterial meningitis. Cerebral spinal fluid (CSF) is obtained for analysis. Which of the following results would verify the diagnosis?
 - A. Cloudy CSF, decreased protein and decreased glucose
 - B. Cloudy CSF, elevated protein and decreased glucose
 - C. Clear CSF, elevated protein and decreased glucose

- D. Clear CSF, decreased pressure and elevated protein
- 19. Dysphasia suggests the impairment of
 - A. Gait
 - B. Speech
 - C. Swallowing
 - D. Movement
- 20. Performing prone knee bend in side-lying instead of prone is especially good for
 - A. Ruling out a discal component to the symptoms
 - B. Stabilizing the pelvis more effectively to prevent anterior tilting
 - C. Distinguishing neurodynamic from non-neurodynamic pain
 - D. Differentiating upper lumbar from lower lumbar source out a discal component to the symptoms

SECTION B: SHORT ANSWER QUESTIONS

(40 MARKS)

(5 marks each)

1. Describe the pathomechanics (pathophysiological and pathomechanical) to lead to neural dysfunction
2. Factors that will affect motor learning
3. The theory of parallel distributed processing
 - a. States that?
 - b. Clinical implications
4. Enumerate sections of MRP
5. The Stretch reflex is the basic mechanism to tonic activity describe it (you may use a diagram)
6. Name 3 measurement for posture and balance
 - a. Posture
 - b. Balance
7. Differentiate the following terms:
 - a. Detrusor areflexia :
 - b. Autonomic dysreflexia:
 - c. Hesitancy:
 - d. Urinary retention: .
 - e. Detrusor sphincter dyssynergia (dsd)-: .
8. Anticholinergic drugs (5marks)
 - a. Are used to treat?
 - b. Examples
 - c. Mechanisms:

SECTION C: LONG ANSWER QUESTIONS

(40 marks)

1.

History

Mr SP is a 24 year old single, university student. He had a diving accident while on holiday in Mombasa. He was admitted in the Mombasa CGH, for one week post-injury. He was finally transferred to the national spinal injury unit.

Diagnosis

C6 spinal fracture resulting in a C6 complete spinal lesion with zone of partial motor and sensory pressure in C7.

He has been referred for rehabilitation

Q, Analyze positioning you would use for him to prevent complications and enhance rehabilitation. Highlighting the clinical basis for your practice. In the following positions (marks)

- a) Lying – supine, prone and side
- b) Sitting
- c) Standing
 - ii. Write on the principles of neuroplasticity