



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATIVE MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF JAN-APRIL 2025 SEMESTER EXAMINATIONS

UNIT CODE: PHT 223

UNIT NAME: SYSTEMIC PATHOLOGY

DATE: 10th April 2025

TIME: TWO HOURS

START: 11:00 AM STOP: 1:15PM

INSTRUCTIONS

1. Attempt all questions as per the instructions in each section
2. This exam is marked out of 70 marks
3. This Examination comprises of Sections A, B and C
4. It is the student's responsibility to report any page and number missing in this paper.
5. Total number of pages are 6 including the cover page.
6. Read through the instructions carefully before starting.
7. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam.
8. Do not write on this question paper, use the provided booklet to write your answers

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

1. A toddler presenting with an adducted and internally rotated shoulder together with pronated lower arm and flexed fingers. What is the toddler's level of injury. (1 mark)
 - a. C1-C3
 - b. C5-C6
 - c. C8-T1
 - d. C5-T1
2. Which is of the following is not a physiotherapy management approach for the above-mentioned condition. (1 mark)
 - a. Passive ROM exercises in the direction away from limited movement
 - b. Forearm supination
 - c. Shoulder external rotation
 - d. Shoulder abduction
3. A student at a special school presented with a sac-like protrusion, Hydrocephalus, Arnold-Chiari malformation, lower limb sensory and motor impairment. What might have not led to the onset of the presentation. (1 mark)
 - a. Teratogenic exposure
 - b. Folic acid deficiency
 - c. Gluten deficiency
4. Following a covid 19 jab, a 65 years old patient was rushed to the hospital and was diagnosed with myositis. Which of the following supports a possible management options by the physiotherapist. (1 mark)
 - a. Advising the patient that his rehabilitation will not last long before full recovery
 - b. Eccentric and intensive exercises
 - c. Neck splinting
 - d. None of the above
5. A patient diagnosed with hyperparathyroidism presented DXA scan report with a T score less than -2.5. which is not a likely subsequent presentation. (1 mark)
 - a. Fracture
 - b. Back pain
 - c. Postural changes
 - d. Bone overgrowth
6. Why would a fairly sexually active 59-year-old woman undergoing hormonal replacement start re-experiencing endometriosis symptoms. (1 mark)
 - a. Resurgence of estrogen
 - b. Sexually transmitted disease
 - c. Urinary tract infection
 - d. None of the above
7. Which is not a condition associated with pelvic inflammatory disease in women. (1 mark)
 - a. Tubo-ovarian abscess
 - b. Endometritis
 - c. Salpingitis
 - d. Chronic pelvic pain syndrome

8. A wheel chair bound former soccer star rumored by villagers to have been bewitched due to the progressive nature of his symptoms which included:
- Cognitive impairments
 - progressive weakness, wasting, and fasciculations involving the small muscles of the hands
 - Inability to hold the eye closed against pressure
 - Weaker extensor muscles than flexor muscles, especially in the hands
 - Cervical extensor weakness develops leading to drooping of the head and pain associated with overstretched muscles
- What is the player's likely diagnosis. (1 mark)
- a. Bells palsy
 - b. Amyotrophic lateral sclerosis
 - c. Guillain barre syndrome
 - d. Witchcraft
9. A patient presenting with Shuffling gait, rigidity, pill-rolling tremor, bradykinesia and postural instability is likely to have. (1 mark)
- a. Alzheimer's
 - b. Multiple sclerosis
 - c. Depletion of dopamine
 - d. Depletion of acetylcholine
10. An accountant who spends most of his day on a computer shows up to a physiotherapy clinic with observable thenar atrophy and weakness upon testing. He complains of pain in the middle fingers and phalen's and tinel's signs are positive. What is the likely diagnosis. (1 mark)
- a. Onset of stroke
 - b. Carpal tunnel syndrome
 - c. Ulnar tunnel syndrome
 - d. Thoracic outlet syndrome
11. Which is not a management approach for the above-mentioned patient his physiotherapist would take. (1 mark)
- a. Use of neutral splinting
 - b. nerve and tendon gliding techniques
 - c. Use of phonophoresis and iontophoresis to reduce local inflammation and swelling
 - d. Strengthening exercises before symptoms subside immediately after surgery
12. The MRI image of a road traffic accident victim at the emergency unit at a referral hospital suspected of brain hemorrhage depicted a crescent shape area of illumination. What is the cause of the presentation. (1 mark)
- a. Epidural hematoma
 - b. Sub dural hematoma
 - c. Sub arachnoid hematoma
 - d. Emboli

13. Which of the following is not a means for facilitating neuroplasticity in a stroke patient undergoing rehabilitation in a physiotherapy department. (1 mark)
- Mirror therapy
 - Constraint induced therapy
 - Repetition of novel movements
 - None of the above
14. If the above-mentioned stroke patient's dominant upper and lower limb has been the right side from birth, which is not a likely presentation if the stroke affected his right brain hemisphere. (1 mark)
- Left sided neglect
 - Aphasia
 - Impulsive
 - Short attention span
15. Which is not a modifiable cause of stroke. (1 mark)
- Cardiac disease
 - Diabetes mellitus
 - Hypertension
 - Age
16. Which is not a likely outcome of spinal cord injury. (1 mark)
- Pressure ulcers
 - Bowel and bladder incontinence
 - Sexual dysfunction
 - Left sided neglect
17. Which of the following would not be an appropriate treatment for a cystocele prolapse patient with urinary incontinence. (1 mark)
- Transversus abdominal exercise
 - Pelvic floor muscle exercises
 - Fluid modification
 - Exercises to increase intra-abdominal pressure
18. Regarding bones, which statement is true. (1 mark)
- PTH responds to high serum calcium
 - Calcitonin (thyroid) responds to low serum calcium.
 - Both A and B
 - Vitamin D is responsible for absorption of calcium in the intestines.
19. Upon conducting a post mortem, the deceased was found to have sustained 110% burns. Which answer is correct. (1 mark)
- It is impossible to sustain 110% burns
 - The deceased had sustained inhalation burns
 - He was burnt beyond recognition
 - Both A and C
20. What might not have caused the above-mentioned victim's burns. (1 mark)
- Hot air
 - Chemical
 - Gases
 - Hot water

21. A quadriplegic patient secondary to traumatic spinal cord injury is said to be at risk of developing pressure ulcers. Which is not a likely predisposition for pressure ulcers. (1 mark)
- Friction
 - Maceration
 - Decreased circulation
 - None of the above
22. What is the likely level of injury for the above-mentioned patient. (1 mark)
- Cervical spine
 - Thoracic spine
 - Lumbar spine
 - Sacrum
23. A student due to submit his thesis is nowhere close completion. He also reported chronically reoccurring abdominal pain or discomfort associated with altered bowel habits in the absence of structural, inflammatory, or biochemical abnormalities. What is likely to be the cause for this presentation. (1 mark)
- Peptic ulcers
 - Gastroesophageal reflux
 - Irritable bowel syndrome
 - Hiatal hernia
24. Which among the following management strategies would be applicable to the above-mentioned patient. (1 mark)
- Surgery
 - Antiacids
 - Stress management
25. Which of the following risk factors is not associated with ectopic pregnancy. (1 mark)
- STDs (especially chlamydia and gonorrhea)
 - Tubal or ovarian surgery
 - Current IUD
 - Fetus not turning to assume head out first position
26. Which of the following statements is not true about burns. (1 mark)
- Burned areas are prone to develop contractures requiring close assessment of ROM and muscle strength
 - Prolonged stretching is sometimes combined with splinting or orthoses to maintain motion and prevent contractures
 - It is important to align any therapy likely to elicit a painful response to coincide with medications
 - Both the thorax and the abdomen (anteriorly and posteriorly) constitute a total of 9% in the rule of nines
27. Which statement is not true regarding nervous system changes with aging. (1 mark)
- Blood vessels to nerves may become atherosclerotic with aging, and occlusion may contribute to loss of nerve fibers.
 - Speed of processing nociceptive stimuli in both C- and A δ -fiber function decrease with age
 - older adults may have lesser susceptibility to burns and other injuries
 - All of the above

28. Which statement is incorrect. (1 mark)
- polyneuropathy indicates involvement of several peripheral nerves
 - polyradiculitis indicates involvement of several nerve roots
 - Mononeuropathy indicates involvement of the nerve root as it emerges from the spinal cord
 - The first noticeable features of neuropathies are often sensory in nature and consist of tingling, prickling, burning among others
29. Which statement is false about erectile dysfunction. (1 mark)
- Weakness in the pelvic floor muscles may contribute to sexual dysfunction.
 - Pelvic floor muscle exercises should be offered all men with intact nerve innervation and vascular supply
 - Anxiety can cause erectile dysfunction in men under 35 years
 - Erectile dysfunction should not be managed by Cialis
30. Which of the following is not a risk factor for torticollis. (1 mark)
- Forceps delivery
 - Vacuum extraction
 - Brachial plexus traction
 - Salpingitis

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

- State and explain two types of aphasia. (4 marks)
- How would a therapist differentiate between a structural and functional scoliosis without imaging. (1 mark)
- List 5 changes a woman in her late fifties would experience with cessation of estrogen production. (5 marks)
- State two diseases whose symptoms would disappear with cessation of estrogen production. (2 marks)
- What exercises would a therapist give to his/her patient with Parkinson's disease. (3 marks)
- List the specific percentage allocation for the rule of nines. (5 marks)

SECTION C. Long Essay Question. Answer only 2 of the questions. (20 Marks)

- Outline the grades of American Spinal Injury Association impairment scale. (5 marks)
 - State and explain 5 spinal cord syndromes. (5 marks)
- State and explain 5 pathologic correlates of menopause. (10 marks)
- Which bone disorder is an astronaut likely to develop. (1 mark)
 - A patient with hypoparathyroidism was advised to do a dexa scan. Give a dexa scan T score interpretation. (6 marks)
 - What would be the likely management approach following prosthetic failure following infection. (3 marks)