



**AMREF INTERNATIONAL UNIVERSITY**  
**SCHOOL OF MEDICAL SCIENCES**  
**DEPARTMENT OF REHABILITATION MEDICINE**  
**BACHELOR OF SCIENCE IN PHYSIOTHERAPY**

**END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2026**

**UNIT CODE: PHT 223**

**UNIT NAME: SYSTEMIC PATHOLOGY**

**DATE: 8<sup>th</sup> APRIL 2026**

**TIME: 2 HOURS**

**START: 11.15AM-**

**STOP: 1.15 AM**

**INSTRUCTIONS**

- 1. All students will have two (2) hours to complete the examination**
- 2. This is a physical exam and the paper has 3 sections**
- 3. Attempt all questions in each section**
- 4. It is the student's responsibility to report any page and number missing in this paper.**
- 5. Check that the paper is complete**
- 6. Total number of pages is 6 including the cover.**
- 7. Read through the paper quickly before you start.**

## SECTION A: MULTIPLE CHOICE QUESTIONS (30 MARKS)

1. A type of skin burn that involve full-thickness destruction of the epidermis and dermis, often requiring grafting:-
  - a. First-degree burn
  - b. Superficial partial-thickness burn
  - c. Deep partial-thickness burn
  - d. Third-degree (full-thickness) burn
  
2. The most important early sign of necrotizing fasciitis is:-
  - a. Localized itching
  - b. Severe disproportionate pain
  - c. Hyperpigmentation
  - d. Numbness only
  
3. Atopic dermatitis is most commonly associated with:-
  - a. Family history of atopy and elevated IgE.
  - b. Autoantibodies against desmoglein
  - c. Fungal infection
  - d. Viral infection
  
4. A healing response with raised firm scar confined to the wound margins is:
  - a. An atrophic scar
  - b. A contracture
  - c. A hypertrophic scar
  - d. A Keloid
  
5. A blanching, itchy wheal caused by mast cell degranulation is:-
  - a. Urticaria (hives)
  - b. Macule
  - c. Papule
  - d. Petechiae
  
6. A blistering disorder which typically affects elderly and presents with tense blisters and negative Nikolsky sign:-
  - a. Pemphigus vulgaris
  - b. Dermatitis hypetiformis
  - c. Linear IgA disease
  - d. Bullous pemphigoid
  
7. A hormone primarily responsible for increasing blood glucose by stimulating hepatic gluconeogenesis:-
  - a. Insulin
  - b. Growth hormone
  - c. Glucagon
  - d. Aldosterone

8. Cushing's syndrome results from excess:-
  - a. Cortisol
  - b. Thyroid hormone
  - c. Insulin
  - d. Aldosterone
  
9. In diabetic ketoacidosis (DKA), physiotherapists should be aware that patients often present with:-
  - a. Muscle hypertrophy and hyperreflexia
  - b. Dehydration, deep Kussmaul respirations, and altered sensorium
  - c. Bradycardia and hypothermia
  - d. Hypertension only without metabolic emergency
  
10. Relevant musculoskeletal signs to physiotherapy in a patient with hypogonadism
  - a. Increased muscle mass and gout
  - b. Decreased bone density and muscle weakness
  - c. Hyperreflexia without sarcopenia
  - d. Gout and hyperreflexia
  
11. Left-sided heart failure commonly causes:-
  - a. Peripheral edema predominating in ankles
  - b. Jugular venous distension
  - c. Pulmonary congestion and dyspnea
  - d. Hepatomegaly as an initial sign
  
12. A septic embolus from infective endocarditis lodging in a limb may present to a physiotherapist as:-
  - a. A sudden localized pain, ischemia, or infarction in that limb
  - b. Painless symmetric bilateral leg weakness
  - c. Chronic joint stiffness unrelated to infection
  - d. Gradual muscle atrophy over months only
  
13. Post-myocardial infarction, a physiotherapist should expect early rehabilitation to consider:-
  - a. Immediate maximal exertion
  - b. Complete bed rest for months with frequently paced mobilization
  - c. Ignore cardiac medications during exercises
  - d. Hemodynamic stability, pain control and graded mobilization
  
14. Atherosclerotic plaque rupture most directly causes:-
  - a. Chronic stable angina
  - b. Acute coronary thrombosis & myocardial infarction
  - c. Pulmonary embolism
  - d. Infective endocarditis

15. A pathologic change which is characteristic of emphysema is:-
- Thickened bronchial walls
  - Increased mucus-secreting glands
  - Destruction of alveolar septa
  - Pulmonary edema
16. A physiotherapy technique MOSTLY appropriate for a patient with retained secretions in bronchiectasis:-
- Postural drainage and percussion
  - Incentive spirometry
  - Diaphragmatic breathing only
  - Breath-holding exercises
17. The primary pathological process in atelectasis is:-
- Lung hyperinflation
  - Pulmonary embolism
  - Alveolar collapse
  - Pleural inflammation
18. The major physiotherapy goal in restrictive lung disease is to:-
- Improve lung compliance and chest expansion
  - Increase mucus clearance
  - Reduce airway resistance
  - Prevent bronchospasm
19. A pathological feature typical of septic arthritis:-
- Gradual onset of pain
  - Non-inflammatory synovial fluid
  - Rapid joint destruction
  - Bilateral symmetrical involvement
20. The pathological process MOSTLY responsible for pain in rheumatoid arthritis:-
- Mechanical wear of cartilage
  - Crystal deposition
  - Reduced joint lubrication
  - Synovial inflammation and pannus formation
21. An important physiotherapy goal in patients with chronic low back pain:-
- Improve core stability & functional movement
  - Complete bed rest
  - Restrict to passive modalities only
  - Avoid all spinal movement

22. The **primary** physiotherapy goal in early stroke rehabilitation is to:-
- Avoid all movement
  - Focus only on passive movements
  - Promote neuroplasticity through task-specific training
  - Delay mobilization until full recovery
23. A sensory symptom **MOST** common in peripheral neuropathy is:-
- Tingling and numbness in a glove-and-stocking pattern
  - Loss of vision
  - Complete anesthesia of one limb
  - Facial sensory loss
24. The main pathologic process in multiple sclerosis is:-
- Axonal transection
  - Peripheral nerve degeneration
  - Demyelination of central nervous system fibers
  - Neuromuscular junction failure
25. The main physiotherapy goal in patients post-abdominal surgery is to:-
- Delay mobilization
  - Prevent pulmonary & circulatory complications
  - Focus only on limb strengthening
  - Avoid breathing exercises
26. Obstructive (post-hepatic) jaundice is commonly caused by:-
- Hemolysis
  - Hepatitis
  - Gallstones
  - Liver cirrhosis
27. The primary pathological feature of uterine fibroids (leiomyomas) is:-
- Malignant epithelial proliferation
  - Endometrial gland atrophy
  - Ovarian cyst formation
  - Benign smooth muscle tumor of the uterus
28. Prostate enlargement (benign prostatic hyperplasia) may cause:-
- Urinary hesitancy and weak stream
  - Increased urine output
  - Complete bowel obstruction
  - Loss of sexual hormones

29. Chronic kidney disease (CKD) is characterized by:-
- Sudden onset of symptoms
  - Complete recovery with bed rest
  - Progressive, irreversible loss of kidney function
  - Increased urine concentration ability

30. A laboratory finding characteristic of urinary tract infection: \_
- Glucose in urine
  - Proteinuria
  - Ketones in urine
  - Bacteria & white blood cells

### **SECTION B: SHORT ANSWER QUESTIONS (20 MARKS)**

1. Explain the importance of **warm-up and cool-down** in cardiac patients (4 marks)
2. Differentiate between **inflammatory** and **degenerative** joint diseases (6 marks)
3. Explain the role of gait training in incomplete spinal cord injury (5 marks)
4. Explain how physiotherapy helps in improving functional capacity in chronic respiratory disease (5 marks)

### **SECTION C: LONG ANSWER QUESTIONS (20 MARKS)**

1. Describe the pathology of Leukemia and its implications for physiotherapy practice (10 marks)
2. Describe the effect of fluid overload on cardiovascular function in renal disease (10 marks)