



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

**END OF TRIMESTER EXAMINATIONS SEPT TO DECEMBER 2025**

**UNIT CODE: PHT 321**

**UNIT NAME: Integumentary**

**DATE: 11<sup>th</sup> December 2025**

**TIME: 6pm-8pm**

**INSTRUCTIONS**

- 1. All students will have two (2) hours to complete the examination**
- 2. This is an online exam, Attempt all questions as per the instruction**
- 3. It is the student's responsibility to report any page and number missing in this paper.**
- 4. Check that the paper is complete**
- 5. Total number of pages is 7 including the cover.**
- 6. Read through the paper quickly before you start.**
- 7. Upon finishing the exam paper, on submission, the message 'Your examination has been submitted' will appear.**

**TOTAL: \_\_\_\_\_/70**

**PERCENT: \_\_\_\_\_/100%**

**POINTS EARNED TOWARDS FINAL GRADE \_\_\_\_\_/70**

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

1. Which of the following is the outermost layer of the skin?
  - a) Dermis
  - b) Hypodermis
  - c) Subcutaneous tissue
  - d) Epidermis
2. Which cell type is primarily responsible for collagen production in wound healing?
  - a) Keratinocytes
  - b) Macrophages
  - c) Fibroblasts
  - d) Langerhans cells
3. Which of the following is the first phase of wound healing?
  - a) Proliferation
  - b) Remodeling
  - c) Inflammation
  - d) Hemostasis
4. Which of the following is NOT a characteristic of the inflammatory phase of wound healing?
  - a) Neutrophil infiltration
  - b) Collagen synthesis
  - c) Vasodilation
  - d) Increased vascular permeability
5. During which phase of wound healing does angiogenesis primarily occur?
  - a) Inflammatory
  - b) Proliferative
  - c) Hemostasis
  - d) Remodeling
6. Which type of wound closure occurs when a wound is intentionally left open and closed later?
  - a) Tertiary intention
  - b) Primary intention
  - c) Delayed inflammatory
  - d) Secondary intention
7. Which term describes the presence of yellow, nonviable tissue in a wound?
  - a) Granulation
  - b) Epithelium
  - c) Slough
  - d) Eschar
8. Which of the following wound measurement techniques is most accurate?
  - a) Ruler measurement (length  $\times$  width  $\times$  depth)

- b) Visual comparison with a known object
  - c) Using a grid overlay
  - d) Estimation by sight
9. Which of the following is a sign of abnormal wound healing?
- a) Epithelial migration
  - b) Foul odor and purulent drainage
  - c) Pink granulation tissue
  - d) Mild redness and swelling
10. Which of the following describes a wound that extends under intact skin at its edges?
- a) Tunneling
  - b) Undermining
  - c) Granulation
  - d) Maceration
11. Which of the following best describes a well-perfused, viable wound tissue?
- a) Bright red and moist
  - b) Pale and fibrotic
  - c) Yellow and stringy
  - d) Dry and black
12. What is the primary benefit of moist wound healing?
- a) Promotes autolytic debridement
  - b) Delays healing time
  - c) Encourages scab formation
  - d) Increases infection risk
13. Which debridement method relies on the body's own enzymes to break down necrotic tissue?
- a) Mechanical
  - b) Enzymatic
  - c) Sharp
  - d) Autolytic
14. Which dressing type is best suited for a heavily exuding wound?
- a) Hydrocolloid
  - b) Transparent film
  - c) Foam
  - d) Hydrogels
15. Which intervention is most effective for managing venous insufficiency ulcers?
- a) Compression therapy
  - b) Electrical stimulation
  - c) Offloading
  - d) Antibiotics
16. Which of the following is an essential component of wound healing nutrition?

- a) High carbohydrate intake
  - b) Increased caffeine consumption
  - c) Low protein, high fat
  - d) Protein, vitamin C, and zinc
17. Which of the following is a sign of wound infection rather than normal inflammation?
- a) Foul-smelling drainage
  - b) Local warmth without systemic symptoms
  - c) Mild erythema
  - d) Pain that is decreasing over time
18. Which systemic sign indicates a serious wound infection?
- a) Mild pain
  - b) Slight wound edema
  - c) Increased localized warmth
  - d) Fever and chills
19. Which of the following is NOT a characteristic of an arterial insufficiency ulcer?
- a) Punched-out appearance
  - b) Heavy exudate
  - c) Located on pressure points (e.g., heels, toes)
  - d) Pale wound bed with minimal bleeding
20. Which condition is most commonly associated with neuropathic ulcers?
- a) Diabetes mellitus
  - b) Hypertension
  - c) Peripheral arterial disease
  - d) Varicose veins
21. What is the primary intervention for offloading a neuropathic ulcer?
- a) Total contact casting
  - b) Wet-to-dry dressings
  - c) Compression therapy
  - d) Hydrocolloid dressing
22. What is the preferred first aid step in managing a deep partial-thickness burn?
- a) Apply dry sterile dressing
  - b) Irrigate with cold running water
  - c) Leave blisters intact and exposed
  - d) Apply ice directly to the burn
23. Which type of burn extends into the subcutaneous tissue and may appear leathery?
- a) Superficial
  - b) Superficial partial-thickness
  - c) Full thickness
  - d) Partial thickness

24. Which of the following is NOT a recommended intervention for scar management?
- a) Silicone gel sheets
  - b) Massage
  - c) Prolonged sun exposure
  - d) Compression garments
25. Which is a common location for pressure ulcers?
- a) Abdomen
  - b) Anterior thigh
  - c) Forearm
  - d) Sacrum
26. Which tool is commonly used to assess pressure ulcer risk?
- a) Norton Scale
  - b) Mini-Mental Status Exam
  - c) Glasgow Coma Scale
  - d) Braden Scale
27. Which is the most effective way to prevent pressure ulcers in a bedridden patient?
- a) Applying antibiotic ointment to intact skin
  - b) Keeping the patient in one position
  - c) Using only foam dressings
  - d) Regular repositioning and pressure redistribution
28. Which advanced therapy uses negative pressure to promote healing?
- a) Electrical stimulation
  - b) Compression therapy
  - c) Hydrotherapy
  - d) Negative pressure wound therapy (NPWT)
29. Which modality is best for wound cleansing and mechanical debridement?
- a) Hydrocolloid dressing
  - b) Electrical stimulation
  - c) Pulsed lavage with suction
  - d) Negative pressure therapy
30. Which is a contraindication for electrical stimulation in wound care?
- a) Pressure ulcers
  - b) Neuropathic ulcers
  - c) Presence of metal implants near the wound
  - d) Chronic wounds

**Section B. Short structured questions. Answer all questions (20 Marks)**

1. A patient is diagnosed with inhalation injury, mention 4 indicators used (4 Marks)
2. Explain importance of oxygen in wound healing (4 marks)
3. Describe the mechanism of pressure injury (4 marks)
4. Discuss the characteristics of a neuropathic ulcer (4 marks)
5. List the signs of wound infection (4marks)

**SECTION C. Long Essay questions. Answer all the question (20 Marks)**

A 60-year-old male with poorly controlled type 2 diabetes presents to the clinic with an ulcer on the plantar surface of his right foot. He reports no significant pain but noticed drainage in his sock. On examination, the ulcer is deep, with undermined edges, and has signs of infection. There is callus formation around the ulcer, and the surrounding skin is dry and cracked. Monofilament testing reveals decreased sensation in both feet. His Ankle-Brachial Index (ABI) is 0.9.

1. What is the most likely diagnosis, and what is the underlying pathophysiology of this condition?
2. How does diabetic neuropathy contribute to ulcer formation, and what are the different types of neuropathy involved?
3. What diagnostic tests should be performed to assess wound severity and rule out osteomyelitis?
4. What preventive strategies should be advised to the patient to prevent recurrence, including foot care, footwear recommendations, and glycemic control?

Mr. Patel, a 72-year-old male, was admitted to a rehabilitation facility following a spinal cord injury (SCI) at T8 due to a motor vehicle accident. He has no sensation below the waist and limited mobility, requiring assistance for transfers and repositioning. He has urinary incontinence and decreased nutritional intake. The physical therapy team is consulted to help in pressure ulcer prevention. His Braden Scale score is 12.

1. What does a Braden Scale score of 12 indicate?
2. What three Braden Scale subcategories contribute most to Mr. Patel's risk?
3. What assessments should a physical therapist perform?
4. What physical therapy strategies can help prevent pressure ulcers?

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