



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

**END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2025**

**UNIT CODE: PHT 321**

**UNIT NAME: Integumentary**

**DATE: 15th APRIL 2025**

**TIME: 9am-11am**

**INSTRUCTIONS**

1. All students will have two (2) hours to complete the examination
2. 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 6 including the cover.
6. Read through the paper quickly before you start.

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

1. Which assessment method helps determine burn depth?
  - a) Braden Scale
  - b) Pinprick Test
  - c) Norton Scale
  - d) Capillary Refill Test
2. What is the main cause of coagulative necrosis in chemical burns?
  - a) Alkali substances
  - b) Acids
  - c) Organic solvents
  - d) Petroleum products
3. What is the significance of measuring capillary refill in wound assessment?
  - a) Determines tissue viability
  - b) Checks for pain levels
  - c) Measures moisture levels
  - d) Assesses risk of infection
4. What is the purpose of range of motion exercises in wound care?
  - a) Prevent contractures
  - b) Increase swelling
  - c) Reduce wound healing
  - d) Prevent blood flow
5. Which factor is NOT a contraindication for compression therapy?
  - a) Deep vein thrombosis
  - b) Severe arterial insufficiency
  - c) Chronic wounds
  - d) Untreated infections
6. What is the best treatment for severe inhalation injury from burns?
  - a) Antibiotics
  - b) 100% oxygen therapy
  - c) Steroids
  - d) Cold compress
7. What is the most appropriate first step in managing a contaminated traumatic wound?
  - a) Immediate closure with sutures
  - b) Irrigation and debridement
  - c) Application of antibiotic ointment without cleaning
  - d) Packing the wound with dry gauze

8. What is the primary function of negative pressure wound therapy (NPWT)?
  - a) Reduce wound healing
  - b) Remove excess fluid and promote granulation tissue
  - c) Increase infection risk
  - d) Prevent blood clotting
9. Which test is commonly used to assess arterial ulcers?
  - a) Doppler ultrasound
  - b) Monofilament test
  - c) Braden Scale
  - d) Serum glucose test
10. What is a key sign of neuropathic ulcers?
  - a) Severe pain
  - b) Painless wounds on weight-bearing areas
  - c) Heavy exudate
  - d) Black necrotic tissue
11. What color is typically seen in the base of a venous ulcer?
  - a) Black
  - b) Yellow slough
  - c) Red granulation tissue
  - d) Pale pink
12. What should be done if signs of infection appear in a wound?
  - a) Continue the same dressing
  - b) Increase dressing changes
  - c) Start antibiotics immediately
  - d) Seek medical evaluation
13. How often should a patient in a wheelchair adjust their position to prevent pressure ulcers?
  - a) Every 5 minutes
  - b) Every 15-30 minutes
  - c) Every 2 hours
  - d) Once a day
14. What is the primary goal of universal precautions in wound care?
  - a) Reducing pain
  - b) Preventing infection
  - c) Increasing blood supply
  - d) Improving nutrition

15. What is the primary function of the skin?
- a) Temperature regulation
  - b) Sensory perception
  - c) Protection against pathogens
  - d) All of the above
16. What is the most appropriate first step in managing a contaminated traumatic wound?
- a) Immediate closure with sutures
  - b) Irrigation and debridement
  - c) Application of antibiotic ointment without cleaning
  - d) Packing the wound with dry gauze
17. What is a major factor in dressing selection?
- a) Color of the wound
  - b) Depth, exudate level, and infection status
  - c) Patient's age only
  - d) Type of bed sheets used
18. What is the most common location of arterial ulcers?
- a) Medial malleolus
  - b) Toes and heels
  - c) Sacrum
  - d) Lower shin
19. Which material is best for absorbing exudate in wound dressings?
- a) Transparent film
  - b) Hydrogel
  - c) Foam dressing
  - d) Plastic wrap
20. What is the first visible sign of a pressure sore?
- a) Blister formation
  - b) Necrosis
  - c) Non-blanchable erythema
  - d) Deep tissue injury
21. What is a major intrinsic risk factor for pressure ulcers?
- a) Poor mobility
  - b) Rough bed sheets
  - c) Tight clothing
  - d) Frequent repositioning
22. Which assessment method helps determine burn depth?
- a) Braden Scale
  - b) Pinprick Test
  - c) Norton Scale
  - d) Capillary Refill Test

23. In the “Rule of Nines,” what percentage of TBSA is assigned to an adult’s head and neck?
- a) 4%
  - b) 9%
  - c) 18%
  - d) 36%
24. What is the primary systemic response to severe burns?
- a) Hyperglycaemia
  - b) Hypovolemic shock
  - c) Decreased metabolism
  - d) Increased vascular resistance
25. What is the main function of antimicrobial dressings?
- a) Increase inflammation
  - b) Prevent bacterial growth
  - c) Dry out the wound
  - d) Delay healing
26. What is the first step in treating chemical burns?
- a) Applying antibiotic ointment
  - b) Irrigating with water
  - c) Applying bandages
  - d) Using ice packs
27. Which intervention is essential for preventing pressure ulcers?
- a) High-protein diet
  - b) Applying dry dressings
  - c) Restricting movement
  - d) Prolonged bed rest
28. What is the first step in wound assessment?
- a) Measuring wound depth
  - b) Identifying the cause
  - c) Applying dressings
  - d) Checking for infection
29. What is a sign of wound infection?
- a) Decreased temperature
  - b) Pus or foul-smelling discharge
  - c) Pale skin
  - d) Reduced blood flow

30. Which factor is NOT a contraindication for compression therapy?

- a) Deep vein thrombosis
- b) Severe arterial insufficiency
- c) Chronic wounds
- d) Untreated infections

**Section B. Short structured section. Answer all the question. (20 marks)**

1. Mention 4 positive signs of healing (4 Marks)
2. In a patient who experienced inhalation injury with low oxygen level, give 4 reasons why elevating the bed is important (4 Marks)
3. Differences between a hypertrophic and keloid scar (2 Marks)
4. A patient presents with a wound on his heel. Upon thorough history and examination of the wound, the wound is covered with an eschar tissue. What is the next best step in your management? (3 Marks)
5. Importance of oxygen in wound healing, mention 4 (4 Marks)
6. Difference between a venous ulcer and arterial ulcer (3 Marks)

**Section C. Long Essay Questions. Answer all the question. (20 MARKS)**

1. A 67-year-old male with a history of hypertension, diabetes, and smoking presents to the clinic with a non-healing ulcer on his right foot. He reports severe pain, especially at night, which worsens when he elevates his leg. On examination, the ulcer is located on the lateral aspect of his foot, has a punched-out appearance with dry necrotic tissue at the base, and has minimal exudate. His right foot appears pale, cool to touch, with absent dorsalis pedis and posterior tibial pulses. Ankle-Brachial Index (ABI) is 0.6.

- a. What is the most likely diagnosis, and what is the underlying pathophysiology of this condition?
- b. Explain the risk factors that contributed to this patient's condition.
- c. What lifestyle modifications and preventive strategies should be advised to reduce the risk of ulcer recurrence?

2. A 27-year-old male was involved in a house fire and sustained burns on his face, neck, chest, and both arms. He was rescued within 10 minutes and brought to the emergency department. On examination, he has partial-thickness burns with blisters on his arms and full-thickness burns on his chest with areas of eschar. He complains of severe pain in his arms but has reduced sensation on his chest. His vitals are: BP 100/65 mmHg, HR 118 bpm, RR 26/min, SpO<sub>2</sub> 94% on room air.

- a. Classify the burn injuries in this patient based on depth (give characteristics) and extent. (5 marks)
- b. What measures can be taken to prevent contractures and improve functional recovery in burn patients? (5 marks)