Certified Burn Registered Nurse (CBRN) Exam

Free Practice Test — 30 Real Exam-Style Questions

with full answer key & explanations

Practice Questions

Try all 30 first, then check the answer key at the back.

1. The nurse in the burn unit needs to select an appropriate topical agent for a patient with a significant risk of infection after a chemical burn on their leg. They are considering mafenide acetate. What is the primary reason for choosing this topical agent? Topical Agent Purpose Mafenide Acetate Inhibits pathogenic organisms Silver Sulfadiazine Promotes healing and prevents infection Lidocaine Gel Decreases pain Hydrogel Maintains moisture in tissue

A. Promotes healing and prevents infection
B. Decreases pain
C. Maintains moisture in tissue
D. Inhibits pathogenic organisms

2. In the rehabilitation phase of burn recovery, what aspect of support is most crucial for a burn survivor's psychological recovery?

A. Intensive physical therapy sessions
B. Nutritional support and balanced diet
C. Regular medical follow-ups and assessments
D. Emotional and social support from family and community

3. While monitoring a patient with a severe burn injury, you notice rough, discolored patches on the patient's heels that remain red even if you press on them. This condition has likely developed due to the pressure caused by the patient's immobility. How would you classify this type of injury?

A. Grade IV
B. Grade I
C. Grade II
D. Grade III

4. You are attending to a female patient who has sustained multiple lacerations from debris during a natural disaster. A tetanus booster will be needed if the patient has not received a tetanus shot within which timeframe?

A. Past 10 years
B. Past 2 years
C. Past 5-7 years
D. Past 3-5 years

5. A 5-year-old girl spilled a pot of boiling water on her left thigh. Upon examination, the skin appears leathery and is insensate to touch. Based on this assessment, what is the most likely depth of her burn?

A. Second-degree burn
B. Fourth-degree burn
C. Third-degree burn
D. First-degree burn

6. In the context of healing a burned area on the skin, which of the following cells is not primarily involved during the proliferative phase of wound repair?

A. Platelets
B. Keratinocytes
C. Fibroblasts
D. Endothelial cells

7. You are counseling a patient who is recovering from a burn injury about the benefits of maintaining a balanced diet and how it supports the healing process. Which nutrient should they focus on increasing in their diet to promote tissue repair and immune function?

A. Protein
B. Carbohydrates
C. Fat
D. Vitamin D

8. What is the most effective route for administering sedatives to pediatric burn patients in the acute post-burn phase?

A. Orally
B. Rectally
C. Transdermally
D. Intravenously

9. While working in a chemical plant, a worker suffers a burn on their arm due to exposure to a chemical substance. Which type of burn will continue to cause progressive skin damage until appropriately treated?

A. Thermal burns
B. Chemical burns (other)
C. Alkali burns
D. Acidic burns

10. A pediatric burn patient weighs 15 kg. Using the dosing guidelines provided, calculate the appropriate total dose of pain medication in milligrams (mg) for this patient. Weight Category (kg) Dose per kg (mg) 5-10 2 11-20 3 21-30 4 31-40 5

A. 60 mg
B. 45 mg
C. 50 mg
D. 30 mg

11. You are caring for a 70 kg adult patient with 40% Burn Surface Area (BSA). Calculate the initial rate at which you should administer intravenous fluids over the first 8 hours using the Parkland formula. Parameter Value Patient Weight 70 kg Burn Surface Area (BSA) 40\% Fluid Requirement (4 mL/kg/%BSA)

A. 700 mL/hr
B. 280 mL/hr
C. 560 mL/hr
D. 1120 mL/hr

12. Which of the following compression therapies is most appropriate for achieving rapid reduction in scar thickness after significant burn injuries?

A. Foam Inserts
B. Elastic Bandages
C. Silicone Gel Sheets
D. Pressure Garments

13. A patient with severe electrical burns is admitted to the burn unit. Review the lab values below. Which lab result should be prioritized for intervention based on abnormalities related to massive tissue damage? Lab Test Normal Range Patient's Value Potassium (mEq/L) 3.5-5.0 5.8 Sodium (mmol/L) 135-145 125 Hemoglobin (g/dL) 13.5-17.5 18.0 Bicarbonate (mEq/L) 22-28 24

A. Potassium (5.8 mEq/L)
B. Sodium (125 mmol/L)
C. Hemoglobin (18.0 g/dL)
D. Bicarbonate (24 mEq/L)

14. Firefighters are assessing victims from a chemical fire scene. Which of the following factors should they least focus on when determining the severity of victims' chemical burns?

A. Type of chemical released
B. Duration of exposure to chemicals
C. Concentration of chemicals in the air
D. Normal skin pH of 4.5-5.5

15. A patient with third-degree burns covering 30% of their body surface is admitted to the burn unit. As part of the nutritional assessment, which protein status indicator should be prioritized for monitoring their nutritional recovery?

A. Total Protein
B. Globulin
C. Prealbumin
D. C-Reactive Protein

16. When educating a caregiver about managing pressure ulcers at home, you need to determine which wound type is most suitable for autolytic debridement. Based on their characteristics, which of the following ulcer types should you choose?

A. Pressure Ulcer Stage 4: Large, Infected
B. Pressure Ulcer Stage 1: Small, Uninfected
C. Pressure Ulcer Stage 2: Large, Uninfected
D. Pressure Ulcer Stage 3: Small, Infected

17. A child with severe electrical burns to both upper arms now presents with significant pain and swelling. You suspect compartment syndrome. Which of the following symptoms is not typically associated with compartment syndrome?

A. Paralysis
B. Pallor
C. Paresthesia
D. Pressure

18. A camper in a remote area accidentally spills boiling water on his forearm while preparing a meal. What should be the initial and most critical first aid intervention to minimize damage to the burn?

A. Applying aloe vera gel immediately
B. Covering with a bandage and elevating the arm
C. Immediate cooling with clean, cold water
D. Applying a cold compress for 5 minutes

19. How does the Wallace Rule of Nines assist medical personnel in a trauma unit to quickly gauge the extent of burns?

A. By dividing the body into areas roughly representing 9% (or multiples thereof) of total body surface area (TBSA), with 1% for the genital area.
B. By allowing estimation based on body proportions in various age groups.
C. By categorizing burns based on their immediate life-threatening potential.
D. By dividing the body into 10 equal sections of 10% each.

20. A dehydrated newborn weighing 3 kg is brought into the emergency department. Using the standard maintenance factor, what should be the initial infusion rate of normal saline (NS) to adequately rehydrate the newborn?

A. 12 mL/hr
B. 24 mL/hr
C. 36 mL/hr
D. 48 mL/hr

21. A 35-year-old female was working in a laboratory when a bottle of concentrated hydrochloric acid fell, splashing her legs and accidentally inhaling fumes. She feels a burning sensation on her legs, has developed mild reddening, and experiences throat irritation. The area's safety data sheet highlights skin corrosion and respiratory distress as risks associated with exposure to hydrochloric acid. All of the following are immediate concerns for this patient, except:

A. Risk of bacterial infection
B. Delayed evolution to full-thickness burns
C. Skin corrosion
D. Respiratory discomfort

22. A 24-year-old firefighter weighing 75 kg has burns covering 30% of his body surface area (TBSA). Using the Parkland formula, calculate the total fluid requirement over the first 24 hours of care, using 4 mL as the maximal amount per TBSA.

A. 12,000 mL
B. 3,600 mL
C. 9,000 mL
D. 7,500 mL

23. A female patient experienced severe sunburn covering 40% of her body surface area while on vacation. During the initial medical assessment, her past medical history includes the following conditions. Which condition should alert you to modify her fluid resuscitation plan?

A. Chronic congestive heart failure
B. Hypothyroidism
C. Migraine headaches
D. Seasonal allergies

24. You are treating a patient with extensive electrical burns to the limbs who you suspect is developing compartment syndrome. Which of the following is NOT typically a sign of this condition in the acute phase?

A. Pain out of proportion to the injury
B. Paresthesia in the affected limb
C. Pulselessness
D. Hyperthermia

25. A 30-year-old female patient presents with partial-thickness burns to both of the anterior legs, anterior trunk, and anterior right arm. Using the Rule of Nines, calculate the total body surface area (TBSA) percentage that is burned.

A. 27%
B. 45%
C. 40.5%
D. 36%

26. You are assessing a firefighter after a rescue operation in a heavily smoke-filled building. Which of the following symptoms is most concerning for airway compromise?

A. Mild nausea and thirst
B. Minor burns on hands
C. Hoarse voice and coughing with soot stained sputum
D. Slight headache and dizziness

27. In your role at a specialized burn center, you encounter a homeless patient and a well-known philanthropist both requiring immediate care. Applying the ethical principle of fairness, what principle should guide your decision on how to treat them?

A. Nonmaleficence
B. Justice
C. Autonomy
D. Beneficence

28. In a burn unit, a patient is presented with several options for pain management. The healthcare team explains each option, including potential side effects and effectiveness. Which approach best exemplifies respect for the patient's autonomy?

A. Encouraging the patient to choose the option preferred by the healthcare team.
B. Delaying the decision-making process until the patient's family can be involved to ensure all opinions are considered.
C. Allowing the patient to choose their preferred method of pain management after understanding all options.
D. Selecting the most effective pain management option on behalf of the patient to ensure optimal recovery.

29. A burn nurse is providing wound care instructions to a patient who will continue their recovery at home. To ensure the patient understands how to clean and dress their burn wound, what should the nurse encourage the patient to do?

A. Watch a video of the wound care process at home
B. Demonstrate and explain back each step of the process
C. Read the instruction booklet at home
D. Sign a document stating they understand

30. A 60-year-old male climber presents to the emergency department after being exposed to extremely low temperatures during a mountain expedition. He has signs of frostbite affecting his limbs, altered consciousness, and arrhythmia. Which systemic condition is this patient most likely developing due to his exposure to cold and subsequent frostbite?

A. Hypothermia-induced delirium
B. Cardiogenic shock
C. Severe acidosis
D. Systemic inflammatory response syndrome (SIRS)

Answer Key & Explanations

1. D — Inhibits pathogenic organisms
Answer: Inhibits pathogenic organisms Mafenide acetate is known for its broad-spectrum antimicrobial activity, making it suitable for preventing or treating infections in burn patients. Unlike agents that primarily promote healing or reduce pain, its primary function is to control microbial growth and penetration in burn eschar, which is crucial in preventing infections.

2. D — Emotional and social support from family and community
While physical therapy, nutrition, and medical assessments are important for physical health, emotional and social support is crucial for psychological recovery. This support helps burn survivors reintegrate into family and community life, which is essential for long-term psychosocial recovery.

3. B — Grade I
Answer: Grade I A pressure injury consists of localized skin and underlying soft tissue damage usually over a bony prominence or related to a medical device. These injuries most often occur in areas where pressure, shearing force, and moisture have damaged the skin and tissue layers. Grading for pressure injuries consists of a four-grade scale, with Grade I ulcers being the least extensive and Grade IV being the most extensive. A pressure injury with non-blanchable erythema and no breaks in the skin would represent a Grade I injury.

4. D — Past 3-5 years
Answer: Past 3-5 years Lacerations and wounds are considered tetanus-prone. Tetanus is preventable through immunization, and ensuring proper vaccination status is critical. In scenarios involving potentially contaminated wounds, it is best practice to verify and supplement tetanus immunization if it has not been administered in the past 3-5 years. If the last booster was more than 10 years ago, a dose of tetanus antitoxin may also be needed.

5. C — Third-degree burn
Answer: Third-degree burn A third-degree (full-thickness) burn is characterized by a leathery texture, insensate skin, and waxy appearance. The burn does not heal on its own, requiring skin grafting to promote healing and prevent complications. In contrast, a first-degree burn would present as red and painful, a second-degree burn would show blistering and be very painful, and a fourth-degree burn would involve deeper tissues like muscle or bone and would appear charred.

6. A — Platelets
Answer: Platelets The primary cells involved in the proliferative phase are fibroblasts, endothelial cells, and keratinocytes. Platelets play a crucial role in the hemostasis phase rather than in the proliferation phase of wound healing.

7. A — Protein
Protein is crucial for tissue repair and regeneration as it provides the building blocks required for new tissue formation. Carbohydrates and fats are important energy sources, and Vitamin D is essential for bone health, but they aren't as directly involved in tissue repair and immune function as protein.

8. D — Intravenously
Intravenous administration is the most effective route for sedative delivery in pediatric burn patients during the acute phase because it provides rapid and reliable sedation levels, crucial for both pain management and procedural sedation. Oral and rectal routes are less preferred due to altered gastrointestinal function and unpredictable absorption. Transdermal options are not typically used in acute settings due to slower onset and inconsistent delivery.

9. C — Alkali burns
Answer: Alkali burns Alkali burns penetrate skin more deeply through liquefaction necrosis, continuing to cause damage until the alkali is effectively removed. These burns require specific treatment through irrigation and neutralization. Acidic burns, on the other hand, are typically self-limiting as they create coagulation necrosis which forms a barrier to further penetration. Thermal burns do not continue to cause damage once the source of heat is removed. Generic chemical burns depend on the substance for severity and need for treatment, and do not specify the progressive nature like alkali burns.

10. B — 45 mg
The patient weighs 15 kg, which falls into the 11-20 kg category. The dose per kg for this category is 3 mg. Thus, the total dose is calculated by multiplying the dose per kg by the weight: $$3 \times 15 = 45$$ mg.

11. A — 700 mL/hr
To calculate the fluid requirement for the first 8 hours: use the Parkland formula: $$4 \times \text{BSA} \times \text{weight}$$. Here, BSA = 40% and weight = 70 kg. Fluid requirement = $$4 \times 40 \times 70 = 11200 \text{ mL total for 24 hours}$$. Since half of this should be given in the first 8 hours, it means $$\frac{11200}{2} = 5600 \text{ mL}$$ is administered over 8 hours. Therefore, the initial infusion rate = $$\frac{5600}{8} = 700 \text{ mL/hr}$$. Since we're seeking the amount per 8 hours, it should be halved: 560 mL/hr to be administered over the first 8 hours.

12. B — Elastic Bandages
Elastic Bandages are typically used when rapid reduction in scar thickness is needed after significant burn injuries due to their ability to apply effective pressure. Silicone Gel Sheets are more suited to improving scar texture and color, not necessarily rapid thickness reduction. Pressure Garments provide consistent pressure over time, useful for long-term management, while Foam Inserts are effective for specifically shaped scars.

13. A — Potassium (5.8 mEq/L)
Answer: Potassium (5.8 mEq/L) In patients with severe burns, tissue damage can cause hyperkalemia (elevated potassium), which is a critical condition requiring immediate intervention due to the risk of cardiac arrhythmias. While hyponatremia (low sodium) is a concern, it typically requires different management strategies and is less immediately life-threatening than hyperkalemia in the acute setting. Elevated hemoglobin may be indicative of hemoconcentration due to fluid loss, but it is not as immediately threatening as hyperkalemia. Bicarbonate levels are within normal range and not a current concern.

14. D — Normal skin pH of 4.5-5.5
When responding to a chemical fire incident, key factors that determine the severity of chemical burns include the type and concentration of chemicals, as well as the duration of exposure. Skin pH, often 4.5 to 5.5, is not a relevant factor in these acute scenarios.

15. C — Prealbumin
Prealbumin is preferred for monitoring protein status as it is sensitive and offers a quick reflection of changes

in the patient's nutritional status due to its short half-life. C-Reactive Protein is an inflammation marker and not optimal for assessing nutritional status. Total Protein levels do not fluctuate quickly enough to reflect short-term nutritional changes. Globulin levels are more related to the immune response rather than immediate nutritional status.

16. B — Pressure Ulcer Stage 1: Small, Uninfected
Autolytic debridement is most effective for wounds that are small and uninfected. It supports the body's natural healing processes by using moisture-retentive dressings to promote rehydration and breakdown of dead tissue. It's not suitable for infected wounds, regardless of size, as infection requires intervention beyond natural mechanisms.

17. D — Pressure
Answer: Pressure Compartment syndrome occurs when increased pressure within a confined space in the body limits blood flow, leading to muscle and nerve damage. The five "Ps" associated with compartment syndrome symptoms are pain, pallor, paresthesia, pulselessness, and paralysis. While pressure is a cause of compartment syndrome, it is not one of its clinical symptoms.

18. C — Immediate cooling with clean, cold water
The correct answer: Immediate cooling with clean, cold water. For thermal burns, it is vital to cool the affected area with cold, clean water as soon as possible to prevent further tissue damage. This should be done for at least 10-20 minutes. The availability of a nearby stream in this scenario provides the necessary resource for effective cooling. While other interventions may follow, immediate cooling is the most critical step.

19. A — By dividing the body into areas roughly representing 9% (or multiples thereof) of total body surface area (TBSA), with 1% for the genital area.
Answer: By dividing the body into areas roughly representing 9% (or multiples thereof) of TBSA, with 1% for the genital area. The Wallace Rule of Nines provides a quick and straightforward method to estimate the TBSA affected by burns. It divides the body into segments that correspond to 9% of the total body surface area or multiples thereof. This method is particularly useful in emergency settings like trauma units. The Lund and Browder chart, on the other hand, provides a more detailed and specific estimation based on age and body part proportions.

20. A — 12 mL/hr
For calculating the initial infusion rate, use the formula: Fluid requirements (mL/hr) = Weight (kg) \times Maintenance factor. The maintenance factor for a newborn weighing up to 10 kg is 4 mL/kg/hr. Thus, for a newborn weighing 3 kg: $$3 \times 4 = 12$$ mL/hr.

21. B — Delayed evolution to full-thickness burns
Answer: Delayed evolution to full-thickness burns Hydrochloric acid primarily causes initial superficial damage without deep tissue penetration like lye, which is an alkali, known to penetrate deeper over time. Therefore, while the acid can cause severe skin burns and respiratory issues, full-thickness burns developing over time is less typical than with alkali burns.

22. C — 9,000 mL
To determine the total fluid requirement, apply the Parkland formula: $$4 \text{ mL} \times \text{TBSA (%)} \times \text{weight (kg)}$$ For this patient: $$4 \times 30 \times 75$$ The calculation yields 9,000 mL of fluid required in the first 24 hours. Remember to keep the TBSA percentage as a whole number when using the formula.

23. A — Chronic congestive heart failure
Answer: Chronic congestive heart failure. Patients with chronic congestive heart failure can have compromised cardiac output, requiring monitored and often modified fluid resuscitation plans to avoid fluid overload and further complications. The other conditions do not typically necessitate adjustments in the fluid resuscitation regimen in burn scenarios.

24. D — Hyperthermia
Answer: Hyperthermia Compartment syndrome is characterized by the '5 Ps': Pain (especially pain out of proportion to the injury and unrelieved by narcotics), Paresthesia (numbness or tingling), Pallor (paleness of the skin), Paralysis (loss of function), and Pulselessness (absence of pulse in the affected extremity). Hyperthermia is not a standard indicator of compartment syndrome but rather can be associated with infection or other systemic responses.

25. C — 40.5%
Answer: 40.5% According to the Rule of Nines: Each anterior leg is 9%, making a total of 18% for both legs. The anterior trunk accounts for 18%, and the anterior right arm is 4.5%. This totals 40.5% TBSA burned.

26. C — Hoarse voice and coughing with soot stained sputum
Answer: Hoarse voice and coughing with soot stained sputum These symptoms indicate smoke inhalation injury, suggesting airway compromise. Other signs that indicate airway compromise are hoarseness, stridor, and sooty deposits around the mouth or nose. Smoke inhalation damage is closely watched for further respiratory complications.

27. B — Justice
Answer: Justice. In the context of a burn center, justice involves treating patients equitably based on the severity of their condition, rather than their social status or economic power. It ensures fairness in access to care. Autonomy refers to respecting a patient's right to make decisions about their health care. Beneficence means doing what is best for the patient. Nonmaleficence means avoiding harm to the patient.

28. C — Allowing the patient to choose their preferred method of pain management after understanding all options.
Answer: Allowing the patient to choose their preferred method of pain management after understanding all options. Patient autonomy involves making personal healthcare decisions after receiving all pertinent information. Selecting options based on healthcare team preferences or delaying until family input negates the patient's personal choice.

29. B — Demonstrate and explain back each step of the process
Answer: Demonstrate and explain back each step of the process. Encouraging the patient to demonstrate and explain back each step of the burn wound care ensures they truly understand the procedure. Active participation and teach-back methods lead to better understanding than passive methods like reading or watching videos.

30. D — Systemic inflammatory response syndrome (SIRS)
Answer: Systemic inflammatory response syndrome (SIRS) The patient's symptoms, including altered consciousness and arrhythmia after severe frostbite, suggest SIRS. This develops as the body's systemic response to severe injury, including extreme cold exposure and tissue damage. SIRS criteria include signs like fever or hypothermia, rapid heart rate, respiratory changes, and white blood cell count abnormalities. The options of hypothermia-induced delirium, cardiogenic shock, and severe acidosis are distinct conditions that

do not encompass the full systemic response seen in SIRS.

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