CE Credit Package 10A

22 Credits for $37.00

Please submit your completed Master Answer Sheet along with payment to

AST Member Services

6 W. Dry Creek Circle, Suite 200 Littleton, CO 80120

Or fax with credit card information to (303) 694-9169.

Or scan and e-mail with credit card information to memserv@ast.org.
Repeat Cesarean Section
Off-pump Coronary Artery Bypass Grafting
Sterilization – Killing the Prehistoric Beast
When Unexpected Complications Arise During Surgery
Blood Pressure
Safety Concepts in the Surgical Setting
Necrotizing Fasciitis
Treatment of War Casualties
Wrist Fusion: Fighting Back Against Rheumatoid Arthritis
Disasters Follow No Rules: Preparing Your Hospital for Disaster Response
Challenging and Changing the Experience of Pain: Acute Pain Management in the Perioperative Setting in Patients with a Substance Abuse History
Gangrene: Recognizing and Treating Cellular Necrosis
Repeat Cesarean Section

1. When should the field be cleared of sharp and metal objects?
   a. Before the delivery
   b. Prior to uterine incision
   c. After the shoulders are delivered
   d. After the umbilical cord is clamped

2. The uterus was palpated to determine ____.
   a. Fetal distress
   b. Abnormal uterine action
   c. Fetal position
   d. Location of umbilical cord

3. The ____ count is performed ____.
   a. 4th, after the skin is closed
   b. 2nd, before the uterus is palpated
   c. 1st, after the initial skin incision
   d. 3rd, while the peritoneum is closed

4. Cord blood gas was _____.
   a. Drawn prior to clamping umbilical cord
   b. Sent to pathology for analysis
   c. Collected by the neonatal nurse
   d. None of the above

5. Which of the following is incorrect for this problem?
   a. Bulb syringe, one per infant
   b. Core blood vial, one per infant
   c. Cord clamp, one per infant
   d. Both a. and c.

6. The uterine incision was _____.
   a. Carried bilaterally with Lister bandage Scissors
   b. Closed in one layers
   c. Followed by oxytocin injection
   d. Closed prior to cord blood collection

7. Indications for cesarean section include:
   a. Diabetes mellitus
   b. Placenta previa
   c. Ovarian tumors
   d. All of the above

8. The neonate presented with _____.
   a. Abnormal heart rate
   b. Umbilical cord prolapse
   c. Breech presentation -footling
   d. Dystocia

9. The bolster under the patient’s right hip reduced pressure on the:
   a. Vena cava
   b. Uterus
   c. Umbilical cord
   d. Femoral artery

10. In the final stages of a cesarean section, oxytocin may be administered to _____.
    a. Stimulate lactation
    b. Control uterine hemorrhage
    c. Decrease postpartum bleeding
    d. Prevent uterine rupture
1. The first OPCAB was performed in
   a. 1954    c. 1973
   b. 1967    d. 1995

2. What are the main branches of the left main trunk
   a. RIMA AND LIMA
   b. RCA AND PDA
   c. LAD and left circumflex
   d. Diagonal and obtuse marginal

3. All of the following are risks of conventional CABG except:
   a. Systemic Inflammatory Response
   b. Aortic dissection
   c. Embolism
   d. Shorten hospital stay

4. OPCAB is beneficial to all of the following except:
   a. Jehovah’s Witness
   b. Prone to CVAs
   c. Need valve replacement
   d. Heavily calcified aortas.

5. The chest incision for OPCAB is called?
   a. Midline
   b. Median sternotomy
   c. Subxyphoid
   d. Femoral

6. Anesthesia delivers the following drugs for OPCAB except:
   a. Milrinone    c. Albumin
   b. Heparin      d. Plavix

7. The XPOSE device is set at what pressure?
   a. 350 mmHg
   b. 500 mmHg
   c. 50 mmHg
   d. 150 mmHg

8. Which of the following is not a conduit used in OPCAB?
   a. LIMA
   b. Saphenous vein graft
   c. Temporal artery graft
   d. RIMA

9. All of these items are placed prior to sternal closure except:
   a. Vascular bulldog
   b. Temporary pacing wires
   c. Mediastinal chest tube
   d. Pleural chest tube

10. Postoperative arrhythmias can be treated by all of the following except:
    a. Cardioversion
    b. Temporary pacemaker
    c. Intracorotbal balloon pump
    d. Intravenous medication
1. What is the minimum time needed to flash sterilize a crile clamp in a gravity displacement sterilizer?
   a. 15 min c. 4 min  
   b. 10 min d. 3 min

2. What does a chemical indicator measure?
   a. Removal of residual air  
   b. Exposure to the sterilization process  
   c. Sterility  
   d. Steam pressure

3. Which Blood biological indicator is used in a gravity displacement autoclave?
   a. Chemical indicator  
   b. Bowie-Dick  
   c. Blue Lid rapid readout  
   d. Brown Lid rapid readout

4. What is the minimum time needed to sterilize a Frazier suction tip in a pre-vac sterilizer?
   a. 15 min c. 4 min  
   b. 10 min d. 3 min

5. What is the number of minutes that a closed flash pan system should be sterilized in a gravity displacement sterilizer?
   a. 3  
   b. 5  
   c. 8  
   d. 10

6. Immediate – use sterilization was designed for _____.  
   a. Quick room turnover  
   b. Instruments that were forgotten during opening  
   c. Sterilizing power equipment  
   d. Instruments that were dropped during surgery

7. Bacteria form spores when:
   a. Steam is present  
   b. In humid climates  
   c. Unfavorable conditions arise for the bacteria  
   d. Favorable conditions arise for the bacteria

8. Biological indicators are routinely run:
   a. In the morning c. In every load  
   b. Daily d. Once

9. What is the minimum temperature for flash sterilization?
   a. 250° F c. 272° F  
   b. 270° F d. 275° F

10. What is the purpose of running distilled water through lumens before flash sterilization?
    a. To irrigate the cannula  
    b. To pre-clean the lumen  
    c. To allow for steam to heat the lumen  
    d. Hospital policy
When Unexpected Complications Arise During Surgery

1. Which ligaments hold the ovaries in place?
   a. Suspensory
   b. Broad
   c. Ovarian
   d. All of the above

2. Which unexpected surgical instrument did the surgeon request to drain the uterus?
   a. Jackson-Pratt drain
   b. Thoracic trocar
   c. Gallbladder trocar
   d. Red Robinson drain

3. ___ attempts were made to close the vaginal cuff by suture.
   a. 27
   b. 18
   c. 23
   d. 31

4. TAH is not indicated for which of the following?
   a. Uterine sarcoma
   b. Ascites
   c. Tubal malignancy
   d. Dysfunctional uterine bleeding

5. The round ligament terminates at the _____.
   a. Anterior cul-de-sac
   b. Vestibule
   c. Labia majora
   d. Fallopian-uterine attachment

6. Care was taken to avoid the _____ when the initial midline incision was made.
   a. Falciform ligament
   b. Xiphoid process
   c. Symphysis pubis
   d. Umbilicus

7. What size and type of suture was primarily used to control bleeding?
   a. 1 Chromic
   b. 2-0 Chromic
   c. 0 Vicryl
   d. 2-0 Vicryl

8. Estimated blood loss up to the first time the patient was transported to the ICU:
   a. 16,000 cc
   b. 17,000 cc
   c. 18,000 cc
   d. 19,000 cc

9. The triangular space at the base of the bladder is called _____.
   a. Trikates
   b. Trielcon
   c. Trigone
   d. Trilabe

10. The uterine sac was incised with ________.
    a. Jorgenson scissors
    b. Metzenbaum scissors
    c. #10 KB on #3 KH
    d. Curved Mayo scissors
1. The kidneys help regulate blood pressure by:
   a. Controlling sodium absorption
   b. Providing negative feedback
   c. Triggering baroreceptors
   d. Providing positive feedback

2. Renin is produced...
   a. During a hypotensive episode
   b. By the juxtaglomerular apparatus of the kidneys
   c. By the liver
   d. To decrease cardiac output

3. Secondary hypertension may occur with:
   a. Toxemia during pregnancy
   b. Vascular and kidney diseases
   c. Diabetes
   d. All of the above

4. ____ is/are not a suspected cause of essential hypertension.
   a. Sodium intake
   b. Beta blockers
   c. Obesity
   d. Sedentary lifestyle

5. Diastolic pressure is measured during ___ of Korotkoff’s sounds.
   a. Phase II
   b. Phase III
   c. Phase IV
   d. Phase V

6. _____ hypertension cannot be attributed to any specific cause.
   a. Genetic
   b. Arterial
   c. Essential
   d. Secondary

7. Systolic pressure is heard during ___ of Korotkoff’s sounds.
   a. Phase I
   b. Phase II
   c. Phase III
   d. Phase IV

8. Following the release of ______, sodium reabsorption ____ in the kidneys.
   a. Angiotensinogen; decreases
   b. Aldosterone; increases
   c. Angiotensin II; decreases
   d. Epinephrine; increases

9. A patient who experiences orthostatic hypotension was likely:
   a. Hunched over
   b. Standing
   c. Lying down
   d. Sitting with legs crossed

10. Angiotensin II causes:
    a. Decreased fluid reabsorption
    b. Renin production in the liver
    c. Vasodilation
    d. Increased cardiac output
1. When the patient is moving between two surfaces:
   a. Three people should be available, one on each side and one at the head
   b. Four people should be available, two on each side
   c. Two people should be available, one on each side
   d. Five people should be available, two on each side, one at the head, one at the foot

2. Abduction of the upper extremities greater than 90 degrees can lead to:
   a. Decreased blood flow  c. Skin Breakdown
   b. Brachial plexus palsy  d. Gangrene

3. The application of force greater than tissue resistance can cause:
   a. Ischemia  c. Gangrene
   b. Necrosis  d. All of the above

4. Common pressure points are:
   a. Ear, nose, toe
   b. Elbow, pelvis, head
   c. Ear, nose, chin
   d. Elbow, pelvis, back

5. The force created on skin by the movement of underlying tissues results in
   a. Decreased blood flow
   b. Hyperextension
   c. Skin irritation
   d. Contact dermatitis

6. Thermal tissue injury can result from:
   a. Shear force
   b. Fiberoptic light sources
   c. Neurovascular compromise
   d. Class 1 lasers

7. When using electrosurgery, what must be applied to the patient to deliver the current back to the electrosurgery unit?
   a. Active electrode
   b. Patient return electrode
   c. Electrosurgical generator
   d. Electrical switch

8. How is a laser similar to an endoscope?
   a. Both emit light
   b. Both are dependent on photon energy
   c. Both produce gamma rays
   d. Both rely on sound waves

9. A medicated patient is never left alone in order to prevent:
   a. Hyperextension
   b. Dislodging of tubes and catheters
   c. Falls
   d. Cardiovascular complications

10. If a team member is exposed to an infrared laser, he or she
    a. Feels immediate pain
    b. Loses eyesight immediately
    c. May hear a popping noise
    d. Experiences photokeratitis
Necrotizing Fasciitis

1. Group A hemolytic streptococcus may cause:
   a. Impetigo
   b. Necrotizing fasciitis
   c. Strep
   d. All of the above

2. The effectiveness of *streptococcus pyogenes* can be attributed to:
   a. Colonizing and rapidly multiplying
   b. Creating an abscess
   c. Developing fluid-filled blisters
   d. Secreting powerful exotoxins

3. *Bacteroides* often reside in the
   a. Liver
   b. Lungs
   c. Intestine
   d. Mouth

4. Which of the following is not normally inhabited by bacterium?
   a. Intestine
   b. Muscle
   c. Mouth
   d. Nasopharynx

5. Which of the following carries the highest risk for the transmission of NF?
   a. Diabetes
   b. Alcoholism
   c. Open skin wound
   d. Cancer

6. Which comorbid condition carries the greatest risk for the patient to be infected by NF?
   a. Cancer
   b. Alcoholism
   c. Diabetes
   d. All of the above

7. Advanced symptoms of NF include:
   a. Blisters increase in size
   b. Drop in blood pressure
   c. Peeling or discolored skin
   d. All of the above

8. Doctors and patients often fail to recognize NF because it:
   a. Resembles the flue
   b. NO apparent wound
   c. Body begins to decompose
   d. Discoloration of skin spreads

9. Methods of treatment utilize:
   a. Hyperbaric chambers
   b. Leeches
   c. NSAIDS
   d. Aspirin

10. Death from necrotizing fasciitis is correlated to:
    a. How early the diagnosis is made
    b. How soon treatment began
    c. Gas in the subcutaneous fascial planes
    d. a&b
11. Which of the following microbiological staining methods can be used to determine whether a type I or type II infection is present?
   a. Acid – FAST  
   b. Gram  
   c. Simple  
   d. Negative

12. Which of the following antibiotic is an alternative to penicillin G?
   a. methicillin.  
   b. benzathine.  
   c. amoxicillin.  
   d. clindamycin.

13. A common region of the body in which group A hemolytic streptococcus may be found is the.
   a. colon.  
   b. lungs.  
   c. skin.  
   d. liver.

14. The gaseous toxin of *streptococcus pyogenes* is released
   a. When cell death occurs due to invasion by bacteriophages.  
   b. From the bacterial cell wall.  
   c. When antitoxins invade causing cellular lysis.  
   d. When the cell binds to the plasma membrane of an organ.

15. Which of the following antibiotics is ineffective against *Peptostreptococcus*?
   a. penicillin G  
   b. chloramphenicol  
   c. metronidazole  
   d. ampicillin

16. Routine X-rays are not considered a reliable method for diagnosing NF because the
   a. Contrast media are ineffective in aiding in the diagnosis of NF.  
   b. Detection of gas can be due to many other factors.  
   c. Radiographs cannot adequately show the fascial planes.  
   d. Infection is superficial and will not appear on the radiographs.

17. Mechanical debridement is not often used due to
   a. the removal of healthy tissue  
   b. inadequate removal of dead tissue.  
   c. contributing to the spread of the bacteria to healthy tissue.  
   d. time inefficiency allowing spread of the bacteria.

18. ____ of adult reported cases of NF report toxic shock and multi-organ failure.
   a. 12%  
   b. 25%  
   c. 37%  
   d. 50%

19. Which of the following bacteria is increasingly causing NF?
   a. *Helicobacter pylori*  
   b. *MRSA*  
   c. *Escherichia coli*  
   d. *Pseudomonas aeruginosa*

20. The number of reported cases of GAS disease in the U.S. is ____ the number of strep throat cases.
   a. equal to  
   b. more than  
   c. less than  
   d. variable as compared to
1. Today, __ percent of GIs reaching a field hospital survive the ordeal.
   a. 69.7
   b. 75.4
   c. 76.4
   d. 90.5

2. Uncontrollable hemorrhage accounts for almost __ percent of combat fatalities.
   a. 30
   b. 40
   c. 50
   d. 60

3. This article compared the wounds experienced in ___ and ___.
   a. Germany and Vietnam
   b. Vietnam and Iraq
   c. Iraq and Germany
   d. Japan and North Korea

4. The surgeon began his tour of duty in Vietnam with a __ orientation phase.
   a. 1 week
   b. 2 week
   c. 3 week
   d. 1 month

5. Since cause of death is still exsanguination, surgeons say ___ are still the single greatest life-saving device in the Iraq conflict.
   a. Tourniquets
   b. Stents
   c. Montgomery straps
   d. Stent dressing

6. The concept of the Forward Surgical Team was developed after the ___.
   a. American Revolutionary War
   b. Civil War
   c. Gulf War
   d. World War II

7. Primary blast injuries which cause damage mainly to gas-filled structures, such as eardrums, lungs and ___.
   a. Arteries
   b. Pancreas
   c. Kidneys
   d. Intestines

8. During the Vietnam War, the average length of time from initial treatment to transfer to the continental United States was ___ days.
   a. 45
   b. 46
   c. 47
   d. 48

9. Which tourniquet is not 100 percent effective in occluding distal arterial Doppler sound in the arms and legs?
   a. Emergency & Military Tourniquet
   b. Combat Application Tourniquet
   c. Special Operations Force Tactical Tourniquet
   d. War Applications Tourniquet

10. Intravenous treatment begins with procoagulants and whole blood, type ___, followed by fresh whole blood with thawed plasma instead of crystalloids.
    a. AB+
    b. AB−
    c. O
    d. B+
1. Diagnosis of rheumatoid arthritis does not involve:
   a. Reviewing family history
   b. Examining joints for inflammation and deformity
   c. Blood tests
   d. Stress tests

2. A/an _____ utilizes a sterile needle and syringe to drain joint fluid.
   a. Arthrocentesis
   b. Arthroscopy
   c. Spinal tap
   d. Synovectomy

3. _____ develops during the early, acute inflammatory stage.
   a. Subluxation of the ulna
   b. Intrinsic contracture
   c. Fixed DRUJ
   d. Bony compression

4. _____ bones are the long bones in the palm.
   a. Phalanges
   b. Trapezium
   c. Carpal
   d. Metacarpal

5. The proximal row does not include the:
   a. Scaphoid
   b. Lunate
   c. Trapezoid
   d. Pisiform

6. The ___ coordinates the movement of the distal and proximal rows.
   a. Radius
   b. Scaphoid
   c. Hamate
   d. Carpal

7. Carpal bones connect the _____ and _____ to the bones in the hand.
   a. Capitate and trapezium
   b. Scaphoid and pisiform
   c. Radius and ulna
   d. Trapezoid and lunate

8. Second-line drugs include all but:
   a. Cortisone
   b. Methotrexate
   c. Gold salts
   d. Adalimumab

9. If the ____ is not fused, a patient will have continued rotation in the hand.
   a. Radius
   b. Hamate
   c. Ulna
   d. Lunate

10. Fusing wrist bones together may:
    a. Prevent deformity
    b. Eliminate pain
    c. Improve alignment
    d. All of the above
11. The intraoperative phase of a wrist fusion begins with
   a:  
   a. Dissection down the extensor retinaculum  
   b. Opening of the radiocarpal joint  
   c. Dorsal, longitudinal incision over Lister tubercle  
   d. Synovectomy

12. Types of NSAIDS are:
   a. Subluxation of the ulna  
   b. Traditional NSAIDS  
   c. Cox-2 selective inhibitors  
   d. All of the above

13. Prostaglandins do all but:
   a. Promote inflammation  
   b. Facilitate the function of blood platelets  
   c. Protect the stomach lining  
   d. Halt joint damage

14. Disease-modifying anti-rheumatic drugs are effective in
   a. Rheumatoid arthritis  
   b. Psoriatic arthritis  
   c. Ankylosing spondylitis  
   d. All of the above

15. _____ is a hormone produced in the adrenal gland.
   a. Calcitonin  
   b. Thyroxine  
   c. Cortisol  
   d. GnRh

16. Steroids are used to alleviate:
   a. Lupus  
   b. Rheumatoid arthritis  
   c. Vasculitis  
   d. All of the above

17. _____ stimulate or restore the ability of the immune system to fight disease or infection.
   a. Analgesics  
   b. Corticosteroids  
   c. BRMs  
   d. Cox-2

18. _____ block the Cox enzymes and reduce prostaglandins.
   a. Steroids  
   b. Analgesics  
   c. BRMs  
   d. NSAIDS

19. The distal ulnar resection was performed using a/an:
   a. Oscillating saw  
   b. Burr  
   c. Osteotome  
   d. Bone cutting forceps

20. Which of the following is not a first-line drug?
   a. Methylprednisolone acetate  
   b. Cortisone  
   c. Hydroxychloroquine  
   d. Aspirin
1. What is the easiest way to designate a patient’s status at a disaster scene?
   a. A simple spreadsheet
   b. Move patients to screening areas
   c. Triage tags
   d. Mobile rescue units

2. The central focus of disaster triage is:
   a. Stabilize patient that cannot walk
   b. Find and tag patients that require immediate care
   c. Providing definitive care
   d. Stabilizing critically injured patients

3. _____ medical care improves the casualty’s condition.
   a. Expert
   b. Specialized
   c. Definitive
   d. General

4. Casualty collection sites should not be located:
   a. On hospital property
   b. Downwind from hazards
   c. Downhill from contaminated areas
   d. All of the above

5. “Decompressing” a disaster scene means:
   a. Evacuating patients who are consuming resources
   b. Dismissing excess medical staff
   c. Expanding the search parameters for survivors
   d. Frequently re-triaging patients

6. The ____ simplifies communication among disaster responders:
   a. Emergency Response System
   b. Incident Command System
   c. Emergency Response Network
   d. Disaster Preparedness System

7. Using the START method, triage evaluation should take:
   a. 15 seconds
   b. 30 seconds
   c. One minute
   d. Up to two minutes

8. During disaster triage, if a patient does not start breathing after simple airway maneuvers:
   a. Immediately move patient to secondary care facility
   b. Tag as red/immediate and move on
   c. Tag as black/dead and move on
   d. Call for assistance

9. Which scenario has the greatest casualty potential?
   a. A terrorist attack on a major city
   b. A natural disaster
   c. A nuclear power plant meltdown
   d. A pandemic disease outbreak

10. What was the greatest pandemic in US history?
    a. Spanish Flu
    b. Avian (Bird) Flu
    c. West Nile Virus
    d. SARS
11. What is a hospital's first response to a disaster scenario?
   a. Postpone all elective surgeries
   b. Divert all EMS units not arriving from disaster scene
   c. Place hospital under security lockdown
   d. All of the above

12. Surging in a place does not involve
   a. Rapidly discharge existing patients
   b. Canceling scheduled elective procedures
   c. Hiring more support personnel
   d. Increasing the number of patient-care staff

13. A key reason for hospitals losing money is:
   a. Increasing cost of energy
   b. Underfunding of Medicare and Medicaid
   c. High costs of updating equipment
   d. Personnel salaries

14. The National Implementation Plan does not include:
   a. Preparedness and communication
   b. Initiating an emergency response alert
   c. Surveillance and detection
   d. Response and containment

15. Natural disasters do not include:
   a. Hurricanes
   b. Mine cave-ins
   c. Floods
   d. Earthquakes

16. A Mass casualty event is defined as:
   a. An incident that produces a sufficient number of casualties to disrupt normal functions
   b. An event that affects more than one million people
   c. An occurrence that is the result of terrorism
   d. An event that involves only facilities

17. The most important mission in a disaster response scenario is:
   a. Communicating the location
   b. Alerting the national guard
   c. Triage
   d. Alerting evacuation teams

18. Disaster triage excludes:
   a. Providing the greatest good for the patient
   b. Response teams prioritizing the casualties
   c. Orderly treatment
   d. Best use of equipment

19. ___ identifies a patient who will not survive without immediate treatment.
   a. Black
   b. Red
   c. Yellow
   d. Green

20. Which triage color is used to identify “walking wounded” patients?
   a. Green
   b. Yellow
   c. White
   d. Orange
21. ____ provides a common organizational structure and language to simplify communication.
   a. START method
   b. Incident Command System
   c. Emergency Medical Response
   d. Decompressing

22. Small aircraft evacuation can be characterized by:
   a. Simple and generally available
   b. More efficient
   c. High cost and complexity
   d. Removal of critical resources

23. More patients’ lives can be saved through:
   a. Temporizing damage-control surgery
   b. Definitive surgery
   c. Long-lasting surgical intervention
   d. Use of sophisticated technology

24. ICS is built around:
   a. Command/Operations
   b. Planning/Logistics
   c. Administration/Financial
   d. All of the above

25. ____ is when hospitals incorporate the ICS into their emergency preparedness plans:
   a. Triage
   b. HEICS
   c. Definitive medical care
   d. SARS

26. Definitive medical care is provided in:
    a. An existing hospital
    b. Mobile facility
    c. A and B
    d. None of the above

27. ____ determines the organizational hierarchy of the ICS:
    a. Job titles
    b. Seniority
    c. Academic degree
    d. Functional requirements

28. ____ infected 2–0–40 percent of the world’s population
    a. SARS
    b. Saran
    c. Spanish Flu
    d. Bubonic Plague

29. The Spanish Flu caused death by:
    a. Bacterial pneumonia
    b. Massive hemorrhages
    c. Edema in the lungs
    d. All of the above

30. A pandemic outbreak can result in:
    a. Economic downturn
    b. Mass quarantine
    c. Overwhelmed medical community
    d. All of the above
1. Health care workers should be cautious when prescribing opioids to ___.
   a. Transplant recipients
   b. Cardiac patients
   c. Diabetic patients
   d. Recovering addicts

2. One component of pain is_____.
   a. Physical
   b. Pre-existing
   c. Pain scale
   d. Recovering addicts

3. The emotional components of pain include:
   a. Anger
   b. Sadness
   c. Depression
   d. All of the above

4. Acute pain in postoperative surgical patients is due to:
   a. Emotional distress
   b. Preexisting disease
   c. Surgical procedure
   d. A combination of B and C

5. _____ leads to a rise in heart rate, increased oxygen consumption and overall cardiac workload.
   a. Opioid prescription
   b. Unrelieved pain
   c. Arterial blockage
   d. Intoxication

6. ___ is a chronic, relapsing and treatable disease characterized by lack of control over consumption and compulsive use despite harmful consequences.
   a. Addiction
   b. Diabetes
   c. Crohn’s
   d. Arthritis

7. The most important step in proper postoperative pain management is:
   a. Administration of prescription drugs
   b. Maintaining the dopamine pathway
   c. Proper preoperative assessment
   d. Understanding and treating a patient’s addiction

8. An example of a pain assessment tool is a:
   a. Numerical scale
   b. Visual analog scale
   c. Picture scale
   d. All of the above

9. A patient’s altered level of consciousness in the acute postoperative phase of care due to intraoperative anesthetics makes it hard to successfully administer:
   a. An IV drip
   b. Oral analgesics
   c. A pain assessment
   d. All of the above

10. Physical indications of pain in the acute postoperative setting include:
    a. Sweating
    b. Elevated heart rate
    c. Trouble moving/taking deep breaths
    d. All of the above
11. One way to help ensure postoperative pain management for a patient with a history of opioid addiction is:
   a. Obtain a preoperative substance abuse history
   b. Consult an addictionologist
   c. Administer frequent pain scale tests
   d. Begin a preoperative pain management regimen

12. Which of the following is not an alternative pain treatment?
   a. Electric shock therapy
   b. Local and regional anesthesia
   c. Epidural blocks
   d. Local pain pumps

13. Postoperative fears for opioid-dependent patients may include:
   a. Being judged by the care giver
   b. Suffering a relapse into drug use
   c. Not receiving enough pain medication
   d. All of the above

14. Blocking the action of cyclooxygenase and inhibiting prostaglandin production can be accomplished with:
   a. Steroid treatment
   b. A Clonodine patch
   c. NSAID therapy
   d. All of the above

15. ___ is a synthetic narcotic used to treat opioid addiction.
   a. Heroin
   b. Clonidine
   c. Methadone
   d. Prednisone

16. Methadone is used in the treatment of addiction to:
   a. Opiates
   b. Alcohol
   c. Methamphetamines
   d. All of the above

17. Side effects of Methadone use include:
   a. Impairs cognitive functions
   b. Debilitating drowsiness
   c. Liver damage
   d. Methadone has no serious side effects

18. Opiates provide a flood of ___, which causes the euphoric high associated with drug use.
   a. Epinephrine
   b. Dopamine
   c. Endorphins
   d. Morphine

19. The preoperative assessment for a substance abuser should include:
   a. The patient’s drug history
   b. The patient’s recovery history
   c. A full physical
   d. All of the above

20. Patients who take opiates in large doses have a higher ___.
   a. Pain threshold
   b. Drug-seeking behavior
   c. Tolerance
   d. B & C
Gangrene: Recognizing and Treating Cellular Necrosis

1. Which is not the one of the three most common variations of gangrene?
   a. Gas
   b. Dry
   c. Internal
   d. Wet

2. Fournier’s gangrene affects the ____.
   a. Fingers
   b. Genitals
   c. Feet
   d. Hands

3. The best treatment for gangrene is ___.
   a. Revascularization
   b. Amputation
   c. Maggot debridement therapy
   d. Antibiotic therapy

4. Gangrene occurs when a body part ___.
   a. Becomes infected
   b. Loses its blood supply
   c. Is diseased
   d. Loses feeling

5. What disease often contributes to the occurrence of dry gangrene?
   a. HIV
   b. High cholesterol
   c. Smoking
   d. Arteriosclerosis

6. Symptoms of gangrene include ___.
   a. Swelling of the affected area
   b. Discoloration of affected tissue
   c. Decreased heart rate
   d. All of the above

7. ____ can occur if a bacterial infection from gangrene spreads throughout the body.
   a. Septic shock
   b. Necrosis
   c. Ischemia
   d. Decompression

8. The tissue becoming dry, shrunken and blackened describes ____ gangrene.
   a. Wet
   b. Gas
   c. Dry
   d. Internal

9. Which of the following are symptomatic of wet gangrene?
   a. Swelling
   b. Blistering
   c. Pungent odor
   d. All of the above

10. Burns, frostbite and wound infections can result in ____ gangrene.
    a. Wet
    b. Gas
    c. Dry
    d. Internal
11. Gas gangrene should ___ be treated as a medical emergency.
   a. Always
   b. Sometimes
   c. Never
   d. Depends on the patient

12. A hernia, or a twist in the gastro-intestinal tract can result in ___ gangrene
   a. Wet
   b. Gas
   c. Dry
   d. Internal

13. X-ray technology can be helpful in diagnosing ___ gangrene.
   a. Wet
   b. Gas
   c. Dry
   d. Internal

14. Sweating, difficulty breathing and convulsions can be signs of ___.
   a. Bacterial infection
   b. Oxygen toxicity
   c. Fournier’s gangrene
   d. Bacteriostasis

15. The primary function(s) of MDT is/are:
   a. Clean the wound
   b. Disinfect the wound
   c. Speed the rate of healing
   d. All of above

16. ___ larvae are the preferred species for MDT.
   a. Horse fly
   b. Greenbottle fly
   c. Fruit fly
   d. All of the above

17. Medical maggots are generally left in the wound for ___ days.
   a. 1-2
   b. 2-3
   c. 304
   d. 4 -5

18. The risks associated with MDT include:
   a. There are no inherent risks
   b. Larvae attacking living tissues
   c. Larvae burrowing into the wound and breeding
   d. b and c

19. It has been reported, though unproven in clinical studies, that maggots can:
   a. Improve blood clotting ability
   b. Stimulate the production of granulation tissue
   c. Remove bacteria from the blood
   d. All of the above

20. Medical grade maggots are:
   a. Sterile
   b. Safe
   c. A legitimate treatment option
   d. All of above
CE CREDIT PKG 10A: 22 CONTINUING EDUCATION CREDITS

Name: __________________________________________  Certification No: __________________
Address: ______________________________________  City: __________ State: ____ Zip: _______
Telephone: ______________________  Email: ____________________________________________

Repeat Cesarean Section

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Off-pump Coronary Artery Bypass Grafting

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sterilization – Killing Prehistoric Beast

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When Unexpected Complications Arise During Surgery

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

Blood Pressure

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

Safety Concepts in the Surgical Setting

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

Necrotizing Fasciitis

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>12.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

Treatment of War Casualties

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.
### Wrist Fusion: Fighting Back Against Rheumatoid Arthritis

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

### Disasters Follow No Rules: Preparing Your Hospital For Disaster Response

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

### Pain Management for Patients with a Substance Abuse History

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.

### Gangrene: Recognizing and Treating Cellular Necrosis

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark one box next to each number. Only one correct or best answer will be selected for each question.