Earn CE credits at home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credit earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST’s files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards two continuing education credits. Members: $12, nonmembers: $20

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. Salicylates
   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. Which of the following agents is commonly applied to the bleeding surface and edges of bone?
   a. Bone wax
   b. Thrombin
   c. Avitene
   d. Bacitracin

20. For the wrist fusion procedure, the patient was placed in the supine position. What muscles are relaxed by the small pad under the patient's head?
   a. Deltoid
   b. Pyramidal
   c. Strap
   d. Cremaster
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. Opioids

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. Numeric 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

---

Earn CE credits at home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credit earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST’s files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards two continuing education credits.
Members: $12, nonmembers: $20

---

Pain management for patients with a substance abuse history

Certified Member   Certified Nonmember
My address has changed. The address below is the new address.

Certification No. ________________________________________

Name ______________________________________________

Address _____________________________________________

City ______________________ State ______ZIP___________

Telephone ___________________________________________ Mark one box next to each number. Only one correct or best answer can be selected for each question.
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. Electro-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. Steroidal 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. Clonodine
   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. All of the above

---

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>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</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 can be selected for each question.
Drug discovery, development and approval processes

1. The drug sildenafil citrate (Viagra®) was originally developed to treat ___.
   a. Angina
   b. Erectile dysfunction
   c. Hypertension
   d. Glaucoma

2. A drug containing active molecules that have never been included in another new drug application is called _______.
   a. A new molecular entity
   b. An original compound
   c. A unique chemical compound
   d. A prototype

3. Which is not a principal concept affecting drug interaction?
   a. Onset
   b. Peak effect
   c. Duration of action
   d. Frequency of future doses

4. ______ studies encompass the entire process of the drug within the body.
   a. Toxicology
   b. Pharmacokinetic
   c. Post-clinical
   d. Biotransformation

5. ______ studies determine the dosage and safety of the drug for human use.
   a. Toxicology
   b. Pharmacokinetic
   c. Post-clinical
   d. Biotransformation

6. Toxicology studies are used to determine:
   a. Toxic, side and adverse effects
   b. Reversal agents
   c. Addictive properties
   d. All of the above

7. ______ denotes a study when subjects and administrators are unaware of grouping status.
   a. Single blind
   b. Double blind
   c. Placebo
   d. None of the above

8. A written plan of action that follows the scientific process is a _______.
   a. Theory
   b. Hypothesis
   c. Protocol
   d. Trial

9. Examples of clinical safeguard trials include:
   a. Informed Consent
   b. Audits
   c. Institutional review boards
   d. All of the above

10. Human trials have _____ phases.
    a. 2
    b. 3
    c. 4
    d. 5

Earn CE credits at home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credits earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST’s files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards two continuing education credits. Members: $12, nonmembers: $20
11. The ______ contains all information known about a new drug.
   a. New drug application (NDA)
   b. Food and drug administration (FDA)
   c. Center for drug evaluation and research (CDER)
   d. Center for disease control (CDC)

12. A patent is valid for _____ years from the original date of application.
   a. 10 b. 15 c. 20 d. 25

13. A ______ distinguishes the source of goods of one party from those of another.
   a. Phrase
   b. Symbol
   c. Design
   d. Trademark

14. A new drug application is filed with the FDA at the end of______.
   a. Phase 1 b. Phase 2 c. Phase 3 d. Phase 4

15. _____ is conducted on a small group of people (20-80).
   a. Phase 1 b. Phase 2 c. Phase 3 d. Phase 4

16. Determining effectiveness and identifying long-term risks are purposes of ____.
   a. Phase 1 b. Phase 2 c. Phase 3 d. Phase 4

17. The study design for _____ trials is usually a double blind, randomized control trial.
   a. Phase 1 b. Phase 2 c. Phase 3 d. Phase 4

18. Approximately how many clinical trials are currently underway worldwide?
   a. 50-55,000 b. 55-60,000 c. 60-65,000 d. 65-70,000

19. One of the biggest legal challenges in clinical trials is ________________.
   a. Luring qualified volunteers
   b. Misrepresentation/fraud
   c. Clarity of informed consent
   d. FDA regulations and safeguards

20. Increasing legal threats may lead to a decline in ________________.
   a. Quality of medical research
   b. Willing volunteers
   c. Clinical trials
   d. Marketable drugs
Wound Management

1. Failure of a wound to heal can result in _____.
   a. Additional surgical procedures
   b. Longer hospital stays
   c. Long-term disability
   d. All of the above

2. A full thickness surgical incision will be repaired by ________.
   a. Primary intention
   b. Secondary intention
   c. Granulation
   d. Adhesive strips

3. Regeneration and repair of a pressure ulcer is an example of ________.
   a. Primary intention
   b. Secondary intention
   c. Granulation
   d. Epithelialisation

4. The proliferation phase of healing includes ________.
   a. Inflammation
   b. Granulation
   c. Contraction
   d. B&G

5. The cessation of bleeding following an injury is ________.
   a. Contraction
   b. Proliferation
   c. Hemostasis
   d. Maturation

6. ________ is classified as the early inflammatory stage of wound healing.
   a. Contraction
   b. Proliferation
   c. Hemostasis
   d. Maturation

7. ________ may be regarded as the first line of defense against infection at the wound site.
   a. Neutrophil leucocytes
   b. Basophils
   c. Eosinophils
   d. Monocytes

8. The class of compounds known as ________ are vital for cell-to-cell and tissue adhesion.
   a. Fibroblasts
   b. Proteoglycans
   c. Electrolytes
   d. Glycoproteins

9. By keeping a wound moist, ________.
   a. Infection is more likely
   b. Healing time is prolonged
   c. Healing rates increase
   d. Scarring is increased

10. Spillage of bile during a cholecystectomy is classified as a ________ wound.
    a. Clean
    b. Clean/Contaminated
    c. Contaminated
    d. Dirty/Infected

Earn CE Credits at Home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credit earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST's files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards two continuing education credits.
Members: $12, nonmembers: $20

Mark one box next to each number. Only one correct or best answer can be selected for each question.
11. One intrinsic factor affecting wound healing is _______.
   a. Wound perfusion
   b. Radiotherapy
   c. Medication
   d. Wound infection

12. One extrinsic factor affecting wound healing is _______.
   a. Disease  c. Oxygen tension
   b. Age      d. Radiotherapy

13. Surgical patients should eat within _____ of surgery for optimal clinical outcome.
   a. 6 c. 24
   b. 12 d. 48

14. ________ is a critical nutrient in optimizing the tensile strength of new tissue.
   a. Carbohydrate
   b. Protein
   c. Fat
   d. Vitamin A

15. ________ is a critical nutrient for collagen synthesis.
   a. Vitamin A  c. Vitamin B
   b. Vitamin E  d. Vitamin K

16. ________ is another critical nutrient for collagen synthesis
   a. Iron  c. Vitamin C
   b. Zinc  d. All of the above

17. Attributes of a surgical dressing include the ability to _____________.
   a. Enable gaseous exchange
   b. Maintain a dry environment
   c. Compress the wound
   d. Adhere to the skin

18. Low-cost, transparent adhesive film dressings are ideal for _____________.
   a. Infected wounds
   b. Straight forward surgical wounds
   c. Acute surgical wounds
   d. Nonsurgical wounds

19. Factors to consider when selecting a wound dressing include ______.
   a. Level of exudates
   b. Depth of the wound
   c. Cost
   d. All of the above

20. A mild to moderate amount of exudate requires a ________ dressing.
   a. Alginate
   b. Simple adhesive film
   c. Hydrocolloid dressing
   d. Adhesive film/foam
Maslow’s Hierarchy of Needs

1. Maslow developed the concept for the hierarchy of needs by observing ______.
   a. Kurt Goldstein  c. Monkeys
   b. His students  d. Infants

2. Based on observed reactions, the most important need in monkeys is______.
   a. Water  b. Food  c. Play  d. None of the above

3. The ______ level of the pyramid addresses the need of being.
   a. Safety needs  b. Self-actualization  c. Physiological needs
   d. Psychological needs

4. _______ needs make up the four lower components of Maslow’s pyramid.

5. Drawing conclusions about spirituality is an example of ______ needs.

6. Needs that must occur for the body to survive are ______ needs.

7. The body regulates itself by ________.
   a. Controlling its temperature  b. Counterbalancing hormones  c. Homeostasis
   d. All of the above

8. Fear can prevent an individual from fulfilling ______ needs.

9. Belongingness needs can be influenced by ________.
   a. Socially-accepted behaviors  b. Education levels  c. Economic status
   d. All of the above

10. According to Maslow, a child who grows up in an affluent neighborhood is ______ likely to join a gang.

Note this exam awards two continuing education credits.
Members: $12, nonmembers: $20
11. The highest platform in the category of deficit needs is ______.
a. Physiological  
 b. Belongingness  
c. Esteem  
d. Safety

12. Self-esteem begins to manifest at ______.
a. Age 2  
b. Age 5  
c. Age 12  
d. Birth

13. The lower form of self-esteem is characterized by ______.
a. A need to be respected by others  
b. A low opinion of oneself  
c. Confidence in one's abilities  
d. Inferiority complexes

14. The higher form of self-esteem is characterized by ______.
a. A need to be respected by others  
b. A low opinion of oneself  
c. Confidence in one's abilities  
d. None of the above

15. Low self-esteem is characterized by ______.
a. Constantly seeking validation/acceptance  
b. Lack of self-respect  
c. Unrealistic expectations for oneself  
d. All of the above

16. “The single component of being” describes ______.
a. High self-esteem  
b. Self-actualization  
c. Social acceptance  
d. Maslow’s Hierarchy of Needs

17. Fluctuation within Maslow’s hierarchy is ______.
a. Common  
b. Probable  
c. Constant  
d. All of the above

18. The process of self-actualization can include ______.
a. Defining oneself spiritually  
b. Focusing on resolving deficits  
c. Rejecting unfavorable aspects of one’s life  
d. A&B

19. Self-actualization is limited to ______.
a. Dignitaries  
b. Everyone  
c. Scientists  
d. Explorers

20. Maslow’s Hierarchy of Needs is especially relevant in the ______ field.
a. Medical  
b. Educational  
c. Self-help  
d. All of the above

---

**MASLOW’S HIERARCHY OF NEEDS**  **PART 2 OF 2**

<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>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</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 can be selected for each question.
Endoscopic Thoracic Sympathectomy

309 September 2009 2 CE credits

1. ETS was initially developed to treat_________.
   a. Goiter
   b. Glaucoma
   c. Epilepsy
   d. All of the above

2. The__________ is responsible for controlling involuntary bodily functions.
   a. Autonomic nervous system
   b. Central nervous system
   c. Regulatory system
   d. Homeostatic effect

3. The______ system slows down a function.
   a. Homeostatic
   b. Sympathetic
   c. Parasympathetic
   d. Autonomic

4. The “fight or flight” response is triggered by the__________ system.
   a. Homeostatic
   b. Sympathetic
   c. Parasympathetic
   d. Autonomic

5. The__________ are destroyed during the ETS procedure.
   a. Sympathetic trunk
   b. Sympathetic ganglia
   c. Spinal nerves
   d. None of the above

6. ETS is a treatment for_________.
   a. Hyperhydrosis
   b. Epilepsy
   c. Irregular heartbeat
   d. All of the above

7. Treatment options for idiopathic craniofacial erythema include_________.
   a. Endoscopic thoracic sympathectomy
   b. Valium
   c. Cognitive behavioral therapy
   d. All of the above

8. ____________ is a vascular disorder that affects blood flow to extremities in cold conditions.
   a. Erythromelalgia
   b. Raynaud’s Syndrome
   c. Complex regional pain syndrome
   d. Hypoxia

9. Raynaud’s Syndrome can result in__________.
   a. Gangrene
   b. Skin ulcers
   c. Skin atrophy
   d. All of the above

10. Thermography and radiography are two methods of detecting__________.
    a. Erythromelalgia
    b. Raynaud’s Syndrome
    c. Complex regional pain syndrome
    d. Hypoxia

Note this exam awards two continuing education credits.
Members: $12, nonmembers: $20
11. Clamping the nerves allows for ________.
   a. Irreversible procedure
   b. Temporary relief
   c. Improved functionality
   d. Easier reversal process

12. A ______ is not used in the ETS procedure.
   a. Harmonic scalpel
   b. Hemostat
   c. Video tower
   d. Fiber-optic light source

13. Complications associated with ETS sometimes include ________.
   a. Respiratory problems
   b. Compensatory sweating
   c. Horner’s Syndrome
   d. All of the above

14. Disfiguring asymmetry of the face can indicate ________.
   a. Raynaud’s Syndrome
   b. Horner’s Syndrome
   c. Erythromelalgia
   d. Complex regional pain syndrome

15. A reversal of the ETS procedure is possible by ________.
   a. Performing a nerve graft
   b. Removing the clip from the nerve
   c. A or B, depending on the surgeon’s method
   d. The ETS procedure is not reversible

16. Erythromelalgia cannot be described as ________.
   a. Idiopathic
   b. A rare disease
   c. A curable disease
   d. A & B

17. ________ can trigger an EM flare-up.
   a. Heat
   b. Physical activity
   c. Anger
   d. A & B

18. EM can develop due to ________.
   a. Psychological disorders
   b. Neurologic or blood disorders
   c. Physical contact with a carrier
   d. A & B

19. ________ do not blush in social situations.
   a. Babies
   b. Cognitive-behavioral therapy patients
   c. ETS recipients
   d. Everyone blushes

20. Cognitive-behavioral therapy can include ________.
   a. Rational emotive behavior therapy
   b. Dialectic behavior therapy
   c. Cognitive therapy
   d. All of the above

---

**Mark one box next to each number.**
Only one correct or best answer can be selected for each question.
1. Breasts consist generally of _________.
   a. Secretory glands
   b. Subcuticular fat
   c. Overlying skin
   d. All of the above

2. ________ are modified sweat glands.
   a. Breasts
   b. Mammary glands
   c. Nipples
   d. Superficial fascia

3. ________ compose the suspensory ligaments of the breast.
   a. Connective tissue stroma
   b. Individual ductal and lobule systems
   c. Dermal tissues of the breast
   d. None of the above

4. The lateral arterial blood supply to the breast does not include the _________.
   a. Fourth intercostal artery
   b. Thoracoacromial artery
   c. Lateral thoracic artery
   d. Superior thoracic axillary artery

5. Nearly _____ percent of lymphatic drainage of the breast drains laterally and superiorly to the axillary lymph nodes.
   a. 65
   b. 70
   c. 75
   d. 80

6. The ________ are the primary region to sample for cancer metastasis into the lymphatic system.
   a. Parasternal lymph nodes
   b. Axillary lymph nodes
   c. Lymphatic vessels
   d. Intercostal veins

7. The mammary glands are completely functional at _________.
   a. Puberty
   b. The end of pregnancy
   c. Birth
   d. Conception

8. hPRL is a hormone given off by the _________.
   a. Placenta
   b. Pituitary gland
   c. Secretory glands
   d. None of the above

9. ________ is the leading cause of death in women aged 40–44.
   a. Heart disease
   b. Lung cancer
   c. Breast Cancer
   d. None of the above

10. The risk of developing breast cancer is related to _________.
    a. Age when first child is born
    b. Genetic factors
    c. Family history
    d. All of the above

Earn CE Credits at Home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credit earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST’s files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards three continuing education credits.
Members: $18, nonmembers: $30
11. ________ stimulates the secretory cells for lactation.
   a. Placental lactogen
   b. Prolactin
   c. Oxytocin
   d. B & C

12. Breast cancers account for _____ percent of all cancers in women and _____ percent of cancer deaths.
   a. 30, 16       c. 16, 30
   b. 43, 30       d. 43, 16

13. ________ provides a standardized way for physicians to determine information about a cancer’s metastasis.
    a. Staging       c. Lumpectomy
    b. Mammogram     d. None of the above

14. The most common staging system is the ________.
    a. Mammogram
    b. Lumpectomy
    c. Tumor Nodal Metastasis
    d. None of the above

15. Pathological staging includes the results of a ________.
    a. Mammogram
    b. Lumpectomy
    c. Tumor Nodal Metastasis
    d. All of the above

16. Patients have many treatment options, including ________.
    a. Radiation therapy
    b. Chemotherapy
    c. Hormonal therapy
    d. All of the above

17. In TNM classification, the number following a T indicates ________.
    a. Size of the tumor
    b. If the cancer has metastasized
    c. If the cancer has spread to the lymph nodes
    d. All of the above

18. ________ is considered a “breast-conserving surgery.”
    a. Mastectomy
    b. Breast reconstruction
    c. Needle localization and wide excision
    d. B & C

19. In a ________, the surgeon removes a small volume of breast tissue.
    a. Mastectomy       c. Lumpectomy
    b. Breast reconstr.   d. B & C

20. Removal of one or both breasts in a male or female patient is a ________.
    a. Mastectomy
    b. Breast reconstruction
    c. Lumpectomy
    d. Needle localization and wide excision

Mark one box next to each number.
Only one correct or best answer can be selected for each question.
21. An example of a minimally-invasive procedure is a ____________.
   a. Simple mastectomy
   b. Skin-sparing mastectomy
   c. Halstead mastectomy
   d. A & B

22. Methylene blue is used during a mastectomy to ____________.
   a. Sterilize the surgical site
   b. Provide local anesthetic
   c. Outline the sentinel node
   d. None of the above

23. The complete removal of the entire breast tissue is a ____________.
   a. Simple mastectomy
   b. Radical mastectomy
   c. Modified radical mastectomy
   d. Halstead mastectomy

24. A/an ____________ is used to separate the breast tissue from the skin.
   a. Electrosurgical pencil
   b. #15 blade
   c. Harmonic scalpel
   d. None of the above

25. In a TRAM flap reconstruction, the surgeon reconstructs the breasts with ____________.
   a. Warm saline
   b. Autologous fat
   c. AlloDerm®
   d. Artificial fillers

26. Axillary components and the pectoralis muscles are removed in a ____________.
   a. Simple mastectomy
   b. Radical mastectomy
   c. Modified radical mastectomy
   d. Bilateral mastectomy

27. To prevent cancer seeding, the wound is ____________.
   a. Cauterized
   b. Closed with absorbable suture
   c. Irrigated with sterile water
   d. All of the above

28. Complications of a mastectomy include ____________.
   a. Infection
   b. Disfigurement
   c. Cancer metastasis
   d. All of the above

29. In a modified radical mastectomy, ____________ are removed.
   a. Only axillary components
   b. Axillary components & pectoralis muscles
   c. Both breasts, in their entirety
   d. Only suspicious lumps

30. Specimens from mastectomy patients are examined ____________ by the pathology department.
   a. Prior to scheduling surgery
   b. Intraoperatively
   c. Postoperatively
   d. At follow-up appointments

### RADICAL MASTECTOMY AND RECONSTRUCTION PART 3 OF 3

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>22</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>23</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>24</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>25</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>26</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>27</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>28</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>29</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>30</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 can be selected for each question.
In-Office Autologous Fat Grafting

311 NOVEMBER 2009 2 CE credits

1. Plastic surgery most often addresses which of Maslow’s needs?
   a. Physiological
   b. Safety
   c. Love and belonging
   d. Prestige and esteem

2. The most common facial locations for autologous fat grafting include _______.
   a. Nasolabial folds
   b. Chin
   c. Marionette grooves
   d. All of the above

3. Which of the following does not describe an autologous fat graft?

4. The ultimate goal of cosmetic surgery is _____________.
   a. Help the patient achieve a positive self-evaluation
   b. Fix the patient’s physical short-comings
   c. Create a new image for the patient
   d. Reverse the affects of aging

5. Patients who have undergone _________ are not good candidates for autologous fat grafting.
   a. Oral surgery  b. Abdominal surgery  c. Organ transplant  d. All of the above

6. The choice of anesthetic for cosmetic procedures depends on _____________.
   a. The patient’s health
   b. The number of procedures being performed
   c. The patient’s current medications
   d. All of the above

7. In a fat grafting procedure, the ________ are filled first.
   a. Nasolabial folds
   b. Cheeks
   c. Jaw line
   d. None of the above

8. Nose reconstructions are believed to have been performed as early as _____________.
   a. 2,000 BCE  b. 600 BCE  c. 1880  d. The Middle Ages

9. Who is considered the father of plastic surgery?
   a. Pierre Joseph Desault
   b. Karl Ferdinand von Graefe
   c. Johann Friedrich Dieffenbach
   d. Sir Harold Gillies

10. Most cosmetic surgery cases are performed under _____________.
    a. Local anesthetic
    b. IV with sedation
    c. General anesthesia
    d. Acetaminophen

Earn CE Credits at Home
You will be awarded continuing education (CE) credit(s) for recertification after reading the designated article and completing the exam with a score of 70% or better.

If you are a current AST member and are certified, credit earned through completion of the CE exam will automatically be recorded in your file—you do not have to submit a CE reporting form. A printout of all the CE credits you have earned, including Journal CE credits, will be mailed to you in the first quarter following the end of the calendar year. You may check the status of your CE record with AST at any time.

If you are not an AST member or are not certified, you will be notified by mail when Journal credits are submitted, but your credits will not be recorded in AST’s files.

Detach or photocopy the answer block, include your check or money order made payable to AST, and send it to Member Services, AST, 6 West Dry Creek Circle, Suite 200, Littleton, CO 80120-8031.

Note this exam awards two continuing education credits.
Members: $12, nonmembers: $20

Mark one box next to each number. Only one correct or best answer can be selected for each question.
11. Alternative options for facial augmentation include __________.
   a. Botox  c. Injectable fillers
   b. Chemical peels  d. All of the above

12. The term “plastic” is derived from a/an ______ word.
   a. Indian  c. Latin
   b. Greek  d. Sanskrit

13. For facial procedures, the patient is put in the ______ position.
   a. Trendelenburg
   b. Supine
   c. Reverse Trendelenburg
   d. Fowler’s

14. Who was a leading pioneer in skin grafts and sex-reassignment surgery?
   a. Gasparo Tagliacozzi
   b. Karl Ferdinand von Graefe
   c. Johann Friedrich Dieffenbach
   d. Sir Harold Gillies

15. After the fat is harvested, the next step is to ________.
   a. Inject the donor fat into the specified areas
   b. Place the syringes in a centrifuge
   c. Apply a cold compress to the surgical site
   d. Cleanse the injection site

16. Cosmetic surgery became popular during the Renaissance due to ________.
   a. Syphilis  c. Social pressures
   b. Nose amputation  d. All of the above as punishment

17. The oldest association for aesthetic surgery in the United States is the ______.
   a. American Academy of Facial Plastic and Reconstructive Surgery
   b. American Association of Plastic Surgeons
   c. American Association of Oral Surgeons
   d. American Board of Plastic Surgery

18. The term “plastic surgery” was coined by ____________.
   a. Pierre Joseph Desault
   b. Karl Ferdinand von Graefe
   c. Johann Friedrich Dieffenbach
   d. Sir Harold Gillies

19. From 1997 to 2007, the number of cosmetic procedures in the United States increased ________.
   a. 162 percent  c. 92 percent
   b. 233 percent  d. 80 percent

20. The father of modern plastic surgery is ____________.
   a. Pierre Joseph Desault
   b. Karl Ferdinand von Graefe
   c. Johann Friedrich Dieffenbach
   d. Sir Harold Gillies

---

**IN-OFFICE AUTOLOGOUS FAT GRAFTING PART 2 OF 2**

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</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 can be selected for each question.
Certified Member

Name: ________________________________ Certification No: _____________________

Address: ________________________________ City: __________________ State: _____ ZIP: __________

Telephone: __________________________ Email: ________________________________

**CE CREDIT PKG 7: 17 CONTINUING EDUCATION CREDITS**
The fee is $29. This package is only available to AST members.

☐ Check Enclosed  Yes, I want to pay by credit card: ☐ Visa ☐ MasterCard ☐ AmEx

Card # _______________________ Expiration Date ________ Signature ____________________________

**Wrist Fusion: Fighting back against rheumatoid arthritis**

1. [ ] a [ ] b [ ] c [ ] d
2. [ ] a [ ] b [ ] c [ ] d
3. [ ] a [ ] b [ ] c [ ] d
4. [ ] a [ ] b [ ] c [ ] d
5. [ ] a [ ] b [ ] c [ ] d
6. [ ] a [ ] b [ ] c [ ] d
7. [ ] a [ ] b [ ] c [ ] d
8. [ ] a [ ] b [ ] c [ ] d
9. [ ] a [ ] b [ ] c [ ] d
10. [ ] a [ ] b [ ] c [ ] d
11. [ ] a [ ] b [ ] c [ ] d
12. [ ] a [ ] b [ ] c [ ] d
13. [ ] a [ ] b [ ] c [ ] d
14. [ ] a [ ] b [ ] c [ ] d
15. [ ] a [ ] b [ ] c [ ] d
16. [ ] a [ ] b [ ] c [ ] d
17. [ ] a [ ] b [ ] c [ ] d
18. [ ] a [ ] b [ ] c [ ] d
19. [ ] a [ ] b [ ] c [ ] d
20. [ ] a [ ] b [ ] c [ ] d

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

**Pain management for patients with a substance abuse history**

1. [ ] a [ ] b [ ] c [ ] d
2. [ ] a [ ] b [ ] c [ ] d
3. [ ] a [ ] b [ ] c [ ] d
4. [ ] a [ ] b [ ] c [ ] d
5. [ ] a [ ] b [ ] c [ ] d
6. [ ] a [ ] b [ ] c [ ] d
7. [ ] a [ ] b [ ] c [ ] d
8. [ ] a [ ] b [ ] c [ ] d
9. [ ] a [ ] b [ ] c [ ] d
10. [ ] a [ ] b [ ] c [ ] d
11. [ ] a [ ] b [ ] c [ ] d
12. [ ] a [ ] b [ ] c [ ] d
13. [ ] a [ ] b [ ] c [ ] d
14. [ ] a [ ] b [ ] c [ ] d
15. [ ] a [ ] b [ ] c [ ] d
16. [ ] a [ ] b [ ] c [ ] d
17. [ ] a [ ] b [ ] c [ ] d
18. [ ] a [ ] b [ ] c [ ] d
19. [ ] a [ ] b [ ] c [ ] d
20. [ ] a [ ] b [ ] c [ ] d

Mark one box next to each number. Only one correct or best answer can be selected for each question.
### Drug Discovery: Development and approval processes

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</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 can be selected for each question.

### The Role of the Surgical Technologist in Wound Management

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</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 can be selected for each question.

### Maslow's Hierarchy of Needs

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</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 can be selected for each question.

### A Surgical Cure for Chronic Blushing: Endoscopic Thoracic Sympathectomy

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</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 can be selected for each question.
**Factial Plastic Surgery: Autologous Fat Grafting**

<table>
<thead>
<tr>
<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>
</tr>
<tr>
<td>2.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>3.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>4.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>9.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>10.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>11.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>12.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Radical Mastectomy and Reconstruction**

<table>
<thead>
<tr>
<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>
</tr>
<tr>
<td>2.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>3.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>4.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>9.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>10.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>11.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>12.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Directions:** Complete all 8 answer keys for the exams. Include your check or money order made payable to AST or complete credit card information with the appropriate amount and mail to Members Services, AST, 6 W Dry Creek Circle, Ste 200, Littleton, CO 80120-8031. If paying by credit card, you can fax in the answer keys and credit card payment to AST at 303-694-9169.