

TEST QUESTIONS

1. What is Kehr's sign?
a. referred pain from the spleen
b. referred pain from the liver
c. referred pain from the kidney
d. referred pain from stomach
2. Treatment for heatstroke consist of all of the following:
a. stop activity
b. loosen clothing
c. put in cool area
d. place in lying position
e. all of the above
3. When will heatstroke most likely occur?
a. cool day
b. overcast day
c. elevated temperature and high humidity
d. high humidity and cool temperature
4. Treatment for anaphylactic shock consist of all the following except:
a. open an airway
b. apply constricting band above site
c. help in administering medication
d. give sips of water
5. How does the BP in an athlete that is in shock different then an athlete that has a spleen injury?
a. higher
b. same
c. lower
d. BP stays the same
6. Blood from the trunks and legs, enters the heart through:
a. aorta
b. descending aorta
c. inferior vena cava
d. superior vena cava
7. Blood traveling from the heart to the body, goes through:
a. aorta
b. descending aorta
c. inferior vena cava
d. superior vena cava
8. Blood coming from the lungs enters the heart through:
a. pulmonary artery
b. inferior vena cava
c. Branches of pulmonary vein
d. superior vena cava
9. What is the first symptom of internal hemmorage?
a. swelling
b. pain
c. discoloration
d. blood from nose
10. Most important thing to do to avoid injury to the bladder?
a. Empty the bladder
b. wear protective pads
c. have them drink water
d. none of the above

11. What is hematuria?
a. blood in the stomach c. Blood collection in the lungs
b. Blood in the liver d. blood in the urine
12. What is the main reason for disallowing an athlete with mono to play contact sports?
a. fear of damage to the stomach
b. fear of damage to the liver
c. fear of damage to the spleen
d. fear of damage to the kidney
13. What is the most important item that a head trainer needs to set up with the local emergency medical system?
a. communication
b. a schedule of home events
c. neither a or b
d. both a and b
14. What is the major symptom of traumatic shock?
a. pale skin
b. obvious bleeding
c. weak pulse
d. restlessness
15. An athlete is in a coma and needs an operation. The trainer has already thought ahead and obtained what type of form?
a. medical history
b. insurance
c. written consent
d. assumption of risk
16. What type of shock is also called "blood poisoning."
a. traumatic c. septic
b. psychological d. anaphylatic
17. The abdominal cavity consist of all of the following:
a. liver c. spleen
b. kidney d. all of the above
18. The thoracic cavity consist of which of the following except:
a. Heart c. bladder
b. lungs d. ribs
19. Collection of air in plueral area, is called:
a. appendicitis c. diverticulitis
b. hemothorax d. pneumothorax

20. Coughing up of blood is an indication of internal bleeding in what area.

a. chest injury

b. kidneys

~~c. cranial area~~

~~d. spleen~~

TEST QUESTIONS

1. Signs and symptoms of aspirin poisoning include all of the following except:
A. ringing in the ears
B. profuse sweating
C. nausea
D. slow and weak pulse
2. Insulin-dependent athletes should do what prior to exercise?
A. increase insulin intake
B. increase food intake
C. decrease insulin intake
D. decrease food intake
E. both A and D are correct
F. both B and C are correct
3. Signs and symptoms of bulimia include all of the following except:
A. social isolation
B. overestimation of body size
C. self-induced starvation
D. eating large amounts of food and then purging
4. Protein should constitute what percent of an athlete's diet?
A. 10% - 12%
B. 25% - 30%
C. 40% - 45%
D. 55% - 60%
5. Which lipoprotein transports free cholesterol from the membranes to the liver for catabolism?
A. VLDL
B. LDL
C. HDL
D. VHDL
6. Water-soluble vitamins include:
A. Vitamin A
B. B complex
C. Vitamin C
D. Vitamin D
E. both A and D are correct
F. both B and C are correct
7. Current research supports that a drink containing between _____ and _____ percent carbohydrate and electrolytes will enhance fluid absorption.
A. 1;3
B. 4;5
C. 5;8
D. 8;10
8. What factors contribute to secondary amenorrhea?
A. low % body fat
B. stress
C. intensive workouts
D. all answers are correct
9. Tinnitus means:
A. mental confusion
B. ringing in the ears
C. inflammation of the tinn
D. hyperventilation
10. Carbohydrates should constitute what percent of an athlete's diet?
A. 10% - 12%
B. 25% - 30%
C. 40% - 45%
D. 55% - 60%

EXAM QUESTIONS

1. A common mechanism for anterior glenohumeral dislocation is:
 - a. a posterior blow to an arm that is abducted 90° and externally rotated
 - b. a lateral blow to an arm that is abducted 90° and internally rotated
 - c. an anterior blow to an arm that is abducted 90° and externally rotated
 - d. an anterior blow to an arm that is abducted 90° and internally rotated
 - e. any blow to the arm

2. The most common mechanism of an acromioclavicular injury is:
 - a. a fall on an outstretched arm
 - b. direct hit to the A-C joint
 - c. a clip
 - d. an illegal tackle
 - e. any blow to the arm

3. A shoulder harness should allow no more than:
 - a. 30° abduction
 - b. 45° abduction
 - c. 60° abduction
 - d. 90° abduction
 - e. 120° abduction

4. What seal must be present on all football helmets?
 - a. NATA
 - b. NCCSAE
 - c. ACSW
 - d. HARP
 - e. TCBY

5. ~~Mouthguards~~ Mouthguards protect:
 - a. the teeth
 - b. the gums
 - c. the tongue
 - d. a and b only
 - e. all the above *switch around*

6. Mouthguards aid in the:
 - a. prevention of dental trauma
 - b. absorption of chin blows
 - c. prevention of possible cerebral concussion
 - d. a and b only
 - e. all the above *switch around*

7. An improperly fitted ear guard can result in:
- a. vertigo
 - b. tinnitus
 - c. deafness
 - d. a ruptured ear drum
 - e. hematuria auris
8. A middle linebacker would normally wear:
- a. a neck roll
 - b. shoulder pads similar to a quarterback
 - c. a heavier shoulder pad which would absorb the impact of a tackle
 - d. an anti-grab shoulder pad
 - e. none of the above
9. Shoulder pads function to protect what joint(s)?
- a. glenohumeral
 - b. acromioclavicular
 - c. sternoclavicular
 - d. a and b only
 - e. all the above
10. An example of a functional knee brace is the:
- a. McDavid Knee Guard
 - b. Knee Saver
 - c. Knee Immobilizer
 - d. Lenox-Hill Derotation Brace
 - e. Anderson Knee Brace
11. The purpose(s) of the neck roll is(are) to:
- a. prevent excessive neck hyperextension
 - b. prevent excessive neck lateral flexion
 - c. help prevent "burners" in susceptible players
 - d. b and c only
 - e. all the above
12. As an athletic trainer, one should know how to:
- a. fit equipment properly
 - b. maintain equipment properly
 - c. repair equipment
 - d. store equipment properly
 - e. all the above
13. When fitting a football helmet it is necessary to check the amount of:
- a. lateral rotation
 - b. forward movement
 - c. backward movement
 - d. all the above
 - e. it is not necessary to check helmet motion

4. A properly fitted jaw pad helps prevent:
- a. losing the mouthpiece during a tackle
 - b. lateral rocking of the helmet
 - c. forward movement
 - d. backward movement
 - e. forest fires
5. The chin strap:
- a. facilitates dental occlusion
 - b. helps keep the helmet in proper position during contact
 - c. keeps the athlete quiet
 - d. a and b only
 - e. all the above
6. How much space should exist between a player's nose and his face mask when properly fitted?
- a. 1/2-1 inch
 - b. 1-1 1/2 inches
 - c. 1 1/2-2 inches
 - d. 2-2 1/2 inches
 - e. it really does not matter
7. How much space should exist between the top of the face guard and the lower edge of the helmet?
- a. 1 inch
 - b. 2 inches
 - c. 3 inches
 - d. 4 inches
 - e. at least 4 inches
18. The neoprene sleeve:
- a. compresses soft tissue
 - b. can give mild support to soft tissues
 - c. can act as a functional brace
 - d. a and b only
 - e. all the above
19. The lace up ankle brace acts mainly as a:
- a. preventative brace
 - b. protective brace
 - c. rehabilitative brace
 - d. functional brace
 - e. it is not considered a brace
20. When fitting shoulder pads:
- a. make sure they feel comfortable to the athlete
 - b. measure the width of the athlete across the chest for approximate size
 - c. measure the width of the athlete across the back from right A-C joint to the left A-C joint
 - d. a and c only
 - e. all the above

11. Which vitamin aids in the clotting of blood?
 A. Vitamin A
 B. B complex
 C. Vitamin C
 D. Vitamin D
 E. Vitamin E
 F. Vitamin K
12. What ion retains water in the body?
 A. calcium
 B. potassium
 C. sodium
 D. glucose
13. Painful menstruation which may be caused by either hormonal imbalances or ischemia of the pelvic organs is termed:
 A. amenorrhea
 B. oligomenorrhea
 C. menorrhagia
 D. polymenorrhea
 E. dysmenorrhea
14. A Q-angle of _____ degrees is considered excessive and may cause pathological patella conditions.
 A. 5
 B. 10
 C. 15
 D. 20
15. Fats should constitute what percent of an athlete's diet?
 A. 10% - 12%
 B. 25% - 30%
 C. 40% - 45%
 D. 55% - 60%
16. Fat-soluble vitamins include:
 A. Vitamin A
 B. B complex
 C. Vitamin C
 D. Vitamin D
 E. both A and D are correct
 F. both B and C are correct
17. Carbohydrates are absorbed into the small intestine by:
 A. diffusion
 B. active transport
 C. bile salts
 D. chylomicrons
 E. both A and B are correct
 F. both C and D are correct
18. Peye's Syndrome is associated with children and teenagers who appear to be recovering from either the chicken pox or influenza and are given _____ to help decrease their pain and fever.
 A. acetaminophen
 B. ibuprofen
 C. motrin
 D. salicylates
19. Initial signs and symptoms for insulin-dependent diabetes mellitus include all of the following except:
 A. polyglycemia
 B. polydipsia
 C. polyuria
 D. polyphagia
20. A distance runner has shown consistent weight loss for the past month. She confides in you that she has been using laxatives to help decrease her weight. How would you best help this young runner?
 A. Tell the runner she is stupid for doing such an unhealthy thing.
 B. Tell the girl's coach so the coach can make an example of the athlete and tell the other runners not to follow in her footsteps.
 C. Discuss the health problems involved with this action and refer her to a psychological counselor and/or dietician.
 D. Try to handle the situation alone without assistance from fellow professionals.

TEST QUESTIONS

1. Traction affects all of the following but;
 - A. Bone
 - B. The Spinal Cord
 - C. Ligaments
 - D. Muscles
 - E. Intervertebral Disk

2. Which of the following conditions is not affected by traction?
 - A. Joint Hypomobility
 - B. Joint Pain
 - C. Spondylolysis
 - D. Muscle Spasm
 - E. Spondylolysthesis

3. Which of the following factors need not be considered when applying mechanical traction?
 - A. Duration of treatment
 - B. Body Position
 - C. Patient Age
 - D. Force Applied
 - E. Rest Time

4. The neutral spinal position during mechanical lumbar traction allows for the largest;
 - A. Stretch on Ligaments
 - B. Stretch on Musculature
 - C. Treatment Time
 - D. Intervertebral Foramen Opening
 - E. Force to be applied

5. Positional traction is best used when;
 - A. The patient's activity is restricted
 - B. The patient is in the later stages of rehabilitation
 - C. Arthritic conditions are present
 - D. Treatment time must be more than 10 minutes
 - E. Large traction forces are required

6. Which of the following is a cause of Spinal Root Impingement?
- A. Spondylolysis
 - B. Hip Joint Pain
 - C. Disk Herniation
 - D. Joint Hypomobility
 - E. Joint Hypermobility
7. Which of the following is a contraindication of traction?
- A. Spondylolysis
 - B. Hip Joint Pain
 - C. Arthritic Conditions of the Facet Joints
 - D. Acute Sprains (3-5 days post-trauma)
 - E. Acute Sprains (10-12 days post-trauma)
8. Williams Flexion Exercises are prescribed when patient's have pain while;
- A. Lying Down
 - B. Running
 - C. Walking and Standing
 - D. Sitting
 - E. Lying on their Stomach
9. Straight leg raises are not recommended for patient's with;
- A. Abdominal Pain
 - B. Hamstring Tightness
 - C. Sciatic Pain
 - D. Thoracic Muscle Spasm
 - E. Limited Range of Motion in the Cervical Region
10. Wolff's Law affects which structure?
- A. Ligament
 - B. Nervous Tissue
 - C. Musculature
 - D. The Spinal Cord
 - E. Bone
11. The Nucleus Pulposus is the soft fibrocartilage central portion of;
- A. The Spinal Cord
 - B. Intervertebral Disk
 - C. Annulus Fibrosus
 - D. The Coccyx
 - E. The Lumbar Vertebrae

12. One of the following conditions indicated when taping the knee for hyperextension;
- A. Quadriceps Strain
 - B. Gastrocnemius Strain
 - C. Posterior Cruciate Ligament Laxity
 - D. Anterior Cruciate Ligament Instability
 - E. Sprained Antero-medial Capsule
13. The objective of taping for collateral ligament support is;
- A. Support Against Posterior Stresses
 - B. Support Against Anterior Stresses
 - C. To Prevent Patellar Dislocation
 - D. To Support the Knee Against Valgus or Varus Stress
 - E. To Prevent Rotary Instability
14. When taping a shoulder for an Acromioclavicular Sprain, the shoulder should be placed in;
- A. External Rotation
 - B. Abduction
 - C. Internal Rotation
 - D. Horizontal Abduction
 - E. Horizontal Adduction
15. Which of the following are not objectives of a shoulder spica wrap?
- A. Support the shoulder joint
 - B. Aid in internal rotation
 - C. Help relax the surrounding musculature
 - D. Restrict motion to a limited extent
 - E. Provide psychological support
16. During taping for knee hyperextension, one way to keep the knee in flexion is;
- A. Tape the athlete in a supine position
 - B. To tape the knee over the edge of a table
 - C. Put a roll of tape under the affected heel with the athlete standing
 - D. Have the athlete sit in a chair
 - E. Tape the athlete in a prone position

17. When wrapping for a strain to the groin adductors, the leg should be held in;
- A. External rotation
 - B. Internal rotation
 - C. Abduction
 - D. Flexion
 - E. Extension
18. The movement of ligaments during traction reduces pressure on;
- A. the spinal cord
 - B. Lumbar vertebrae
 - C. Cervical vertebrae
 - D. Nerve root
 - E. Supporting musculature
19. Research indicates that lumbar vertebral separation will not occur when forces are less than: ___ of the patient's body weight.
- A. 1/2
 - B. 1/8
 - C. 1/3
 - D. 1/4
 - E. 2/3
20. Treatment time for sustained mechanical lumbar traction should start at less than ___ minutes.
- A. 10
 - B. 15
 - C. 20
 - D. 25
 - E. 30

Instructions For question 1 - 6 place the correct letter that corresponds with the proper statement in muscle grading on the blank line.

A = Normal (5) D = Poor (2)
B = Good (4) E = Trace (1)
C = Fair (3) F = Zero (0)

1. F A joint has no evidence of contractility.
2. B A joint with complete range of motion against gravity with some resistance.
3. A A joint has complete range of motion against gravity with full resistance, no pain persists.
4. E A joint has evidence of slight contractility, no joint motion observed.
5. C A joint has complete range of motion against gravity with no resistance.
6. D A joint has complete range of motion with gravity eliminated.

7. When properly testing the gluteus maximus muscle the _____.
 - A. patient's knee should be at 90° flexion.
 - B. patient should lie prone on a table.
 - C. evaluator should palpate for tone during the test.
 - D. evaluator should place forearm on the iliac crest.
 - E. all of the above.

8. During the preseason physical, for which conditions should a person be allowed to remain in contact sports? _____.
 - A. Chronic Hemophiliac
 - B. Multiple Concussions
 - C. Controlled Diabetes
 - D. Convulsive Disorder
 - E. Loss of function in one eye.

9. Movement executed by an athlete without assistance is a _____?
 - A. Resistive exercise
 - B. Passive exercise
 - C. Flexion exercise
 - D. Active exercise

10. A segment or strip of skin supplied by a given spinal nerve is called a ____?
 - A. Dermatome
 - B. Nerve root
 - C. Lesion
 - D. Plexus

11. The thenar eminence is supplied by the _____.
 - A. Radial Nerve
 - B. Median Nerve
 - C. Ulnar Nerve
 - D. Axillary Nerve

12. A force that is applied to a joint in which the distal aspect of the limb is moved towards the midline is called _____.
- A. Valgus stress
 - B. Subluxation
 - C. Varus stress
 - D. None of the above.
13. End feel would be considered a part of the _____?
- A. Subjective evaluation
 - B. Objective evaluation
 - C. Both A and B
 - D. None of the above
14. When evaluating an unconscious athlete the first area checked is _____?
- A. Airway
 - B. Breathing
 - C. Circulation
 - D. Bleeding
15. When performing the history portion of the evaluation process the evaluator should not _____?
- A. Listen attentively
 - B. Calm the subject
 - C. Ask difficult questions
 - D. Allow athlete to describe the injury
16. Observing the athletes face and eyes while evaluating them may give you further clues as to extent of _____?
- A. Pain and point tenderness
 - B. Crepitation
 - C. Swelling
 - D. Deformity
17. When palpating an injured area the evaluator would not want to _____?
- A. Demonstrate care and concern
 - B. Begin away from injury
 - C. Visualize underlying structures
 - D. Cause unnecessary pain
18. When performing Special Tests the evaluator would want to _____?
- A. Explain maneuvers
 - B. Stress uninjured side first
 - C. Increase intensity as tolerated
 - D. All of the above
 - E. Both A and B
19. A process of finding out as much information as possible about the injury itself and the circumstances surrounding its occurrence is called _____?
- A. Mechanism of Injury
 - B. History Procedures
 - C. Referral Procedures
 - D. Chronic Problems
20. An example of an Abnormal type of end feel is _____?
- A. Bone to Bone-- abrupt halt to movement, to hard surfaces engage.
 - B. Soft tissue approximation
 - C. Empty feel
 - D. Tissue Scratch

1. Which is a means of injury to the spinal cord and nerve roots?

- a. contusion
- b. hematomyelia
- c. stretching
- d. all of the above

2. Which injury to the spinal cord is reversible?

- a. laceration
- b. hemorrhage
- c. spinal cord shock
- d. none of the above

3. An athlete receives a lateral wrenching of the neck. He comes to you complaining of numbness and tingling down the arm to the thumb. You suspect

- a. whiplash
- b. cervical sprain
- c. wry neck
- d. burner

4. Which vertebral articulation has the highest incidence of disc protrusion and degeneration?

- a. T12/L1
- b. L5/S1
- c. L3/L4
- d. C1/C2

5. Which is the most common mechanism of cervical injury?

- a. hyperflexion
- b. hyperextension
- c. rotation and hyperextension
- d. lateral flexion

6. Injuries from axial loading occur most often at what level?

- a. C2/C3
- b. C3/C4
- c. C5/C6
- d. C7/T1

7. Which injury is the most frequent cause of death to to severe head injury?

- a. epidural hematoma
- b. subdural hematoma
- c. subarachnoid hematoma
- d. intracerebral hemorrhage

8. A contre-coup injury is characterized by

- a. rupture of the middle meningeal artery
- b. collection of blood in the epidural space
- c. compression injury to the brain caused by sudden impact
- d. rebounding of the brain against the skull

9. In evaluating a head and neck injury, a useful test for brain involvement is

- a. Valsalva maneuver
- b. Oppenheim test
- c. Babinski test
- d. compression test

10. A blunt blow to the anterior aspect of the eye causing a pooling of blood in the anterior chamber with a partial or complete block of vision is known as

- a. hyphema
- b. globe rupture
- c. blowout fracture
- d. orbital hematoma

11. A skull fracture may cause which of the following

- a. epidural hematoma
- b. damage to the middle meningeal artery

c. leakage of cerebrospinal fluid

d. all of the above

12. When dealing with an unconscious athlete all of the following are true except

a. always assume there is a neck injury

b. check ABC's

c. the athlete is moved as one unit

d. remove the facemask and helmet if artificial respiration is needed

13. An athlete that has been hit in the eye with a softball comes to you complaining of double vision and pain in the eye, you suspect

a. blowout fracture

b. ruptured globe

c. detached retina

d. orbital hematoma

14. Spondylolisthesis is the forward slippage of one vertebra on another at what level?

a. T12/L1

b. L2/L3

c. L4/L5

d. L5/S1

15. The mouthguard protects what structures?

a. tongue

b. teeth

c. gums

d. all the above

16. Which is characteristic of a subdural hematoma?

a. Tearing of the bridging cerebral veins

b. Rupture of middle meningeal artery

c. Rapid onset of symptoms

d. pooling of blood in brain tissue

17. A pooling of blood between the skull and the dura mater indicates

a. subarachnoid hematoma

b. subdural hematoma

c. epidural hematoma

d. intra cerebral hematoma

18. A positive finger to nose test following a cerebral injury indicates

a. physical disorientation

b. lack of balance

- c. cerebral dysfunction
- d. lack of coordination

19. Which is characteristic of cerebrospinal fluid?

- a. strawlike
- b. drips out mouth
- c. should be prevented from dripping
- d. is in the epidural space

20. The Romberg test tests what?

- a. balance
- b. coordination
- c. concentration
- d. none of the above

REHABILITATION TEST

1. Parameters for monitoring early rehabilitation phase exercise response include:
 - a. maximal multiple-angle isometric exercises
 - b. submaximal short-arc exercises
 - c. maximal short-arc exercises
 - d. submaximal full ROM exercises
 - e. none of the above are correct
2. Different modes of exercise include:
 - a. passive exercise
 - b. active exercise
 - c. mechanical exercise
 - d. both a & b are correct
 - e. both a & c are correct
3. DeLorme Technique is an example of:
 - a. a mechanical exercise
 - b. a progressive resistance exercise
 - c. an isometric exercise
 - d. all of the above are correct
 - e. none of the above are correct
4. While performing an active assistive exercise, the athlete:
 - a. performs movement against a resistance
 - b. does nothing, the athletic trainer directs and performs the exercise for the athlete
 - c. the athletic trainer lifts the leg, the athlete lowers it
 - d. performs it entirely by him/self against gravity
 - e. all of the above are correct
5. The Oxford technique exercise program allows the individual to:
 - a. progressively decrease the amount of weight with each repetition
 - b. progressively increase the amount of weight with each repetition
 - c. increase the number of sets performed
 - d. adjust the weight based upon the number of repetitions able to do in a set
 - e. none of the above are correct
6. An advantage not associated with isometric exercises is that it:
 - a. can be used in early rehabilitation
 - b. can be performed in short periods of time
 - c. increases muscular endurance
 - d. maintains neural association
 - e. all of the above are correct

7. A disadvantage associated with isokinetic exercises is:
- a. lack of eccentric loading and stimulus to muscles
 - b. the sensitivity of the equipment and recording devices in testing large muscle groups
 - c. time consuming to test more than one joint
 - d. all of the above are true
 - e. none of the above are true
8. An advantage of isotonic exercises is that it:
- a. can improve muscular endurance
 - b. can increase muscular strength
 - c. does not load muscles at weakest points of ROM
 - d. a and b are correct
 - e. b and c are correct
9. Different models of isokinetic machines include:
- a. Wilson Ariel 4000, Cybex II, and Kin-Com
 - b. Eric Unex II, Cybex II, Ultra III
 - c. Lido, Kin-Com+, Biodynamics
 - d. Hydra Fitness, Ultra III, Biodynamics
 - e. none of the above are correct
10. Long term goals for a rehabilitation program are to:
- a. increase musculotendinous flexibility
 - b. increase attention span in class
 - c. keep from sleeping when the class is boring
 - d. all of the above
 - e. none of the above
11. At what stage can weight as a form of rehabilitation can be implemented?
- a. early-acute stage
 - b. early-subacute stage
 - c. intermediate stage
 - d. late stage
 - e. should not be used until the athlete is fully recovered
12. What criteria should be measured during and at the end of a rehabilitation program?
- a. strength of each muscle group
 - b. balance between antagonist muscle groups
 - c. range of motion
 - d. all of the above are correct
 - e. none of the above are correct

13. Passive exercise is often performed immediately following surgery, reasons would include:
- a. to promote the development of a more flexible scar
 - b. to educate and inform the athlete
 - c. to decrease intracapsular effusion
 - d. all of the above are correct
 - e. none of the above are correct
14. Terminal goals or discharge parameters should include:
- a. increase muscle strength within normal limits for activity-specific requirements
 - b. strength return of 75%
 - c. 90% return of full ROM
 - d. 75% of endurance ratio
 - e. all the above are correct except B & D
15. The intermediate rehabilitation phase should incorporate:
- a. maximal multiple-angle isometric exercises
 - b. submaximal short-arc exercises
 - c. maximal short-arc exercises
 - d. all of the above are correct
 - e. none of the above are correct
16. A late rehabilitation phase incorporates the following:
- a. submaximal multiple-angle isometric exercises
 - b. maximal multiple-angle isometric exercises
 - c. submaximal short-arc exercises
 - d. all of the above are correct
 - e. none of the above are correct
17. The SAIDS principal states that:
- a. rehabilitation should be focused on a single muscle group
 - b. exercise for developing proprioception should not be introduced until the athlete is fully recovered
 - c. specific adaptations are not made to accommodate each individual
 - d. exercises should be adapted to the specific needs of the athlete
 - e. none of the statements above are correct

18. The normal joint range of motion for knee flexion is:

- a. 60 degrees
- b. 140 degrees
- c. 180 degrees
- d. 125 degrees
- e. none of the above are correct

19. A setting of _____ would be used on a Cybex II, to best facilitate strength development.

- a. 60 deg/sec
- b. 180 deg/sec
- c. 300 deg/sec
- d. all of the above are correct
- e. none of the above are correct

20. According to Gould & Davies, the athlete holds _____ responsibility in the goal to achieve full recovery.

- a. 75%
- b. 100%
- c. 25%
- d. 50%
- e. 0% (none, it is the athletic trainers responsibility to insure that the athlete becomes fully rehabilitated)

1. An example of conduction is:
 - a. ultrascund
 - b. hydrocollator pack
 - c. shortwave diathermy
 - d. whirlpool
2. When there is a vasospasm of digital arteries after exposure to cold, it is called:
 - a. paraxysmal cold hemoglobinuria
 - b. piezoelectric effect
 - c. Raynaud's disease
 - d. frostbite
3. After a full body warm whirlpool, it is important to:
 - a. eat
 - b. ice the injured area
 - c. rehydrate
 - d. begin activity immediatly
4. The following is not a physiologic effect of heat:
 - a. increased metabolism
 - b. increased capillary permeability
 - c. increased blood flow
 - d. increased vasoconstriction
5. This massage technique uses superficial or deep stroking movements with the flat of the hands or fingers:
 - a. effleurage
 - b. vibration
 - c. petrissage
 - d. friction
6. Ice decreases a muscle spasm by:
 - a. decreasing muscle spindle activity
 - b. decreasing the blood flow to the muscle
 - c. hastens removal of lactic acid
 - d. freezing the muscle
7. Convection is:
 - a. the body is in direct contact with the heat
 - b. particles move across the body creating a temperature change
 - c. production of heat through other forms of energy
 - d. the movement of electricity through wires

QUESTIONS

1. In PNF "maximal" resistance refers to:
 - A. The maximum effort exerted by the therapist
 - B. The application of a large amount of resistance to force normal timing to occur
 - C. The amount of resistance applied which breaks the patient's isometric hold
 - D. The greatest amount of resistance applied to a patient's isotonic contraction which permits full ROM to occur.
 - E. None of the above

2. What PNF pattern would be utilized if an athlete demonstrates weakness in wrist extension and radial deviation?
 - A. Diagonal 1 Flexion
 - B. Diagonal 2 Flexion
 - C. Diagonal 2 Extension
 - D. Diagonal 1 Extension
 - E. None of the above

3. What neurophysiological principle states the brain knows nothing of individual muscle action but knows only gross movement?
 - A. Irradiation
 - B. Beevor's axiom
 - C. Sherrington's law of successive induction
 - D. Sherrington's law of reciprocal innervation
 - E. None of the above

4. In PNF, supination of the forearm and radial deviation are consistent with?
 - A. Shoulder extension and external rotation
 - B. Shoulder extension and internal rotation
 - C. Shoulder flexion and external rotation
 - D. Shoulder flexion and internal rotation

5. PNF is based on stimulating proprioceptors such as _____ which respond to passive stretch, and _____ which respond to active stretch.
 - A. Free nerve endings, Golgi tendon organs
 - B. Golgi tendon organs, muscle spindles
 - C. Paccinian corpuscles, free nerve endings
 - D. Muscle spindles, Golgi tendon organs
 - E. None of the above

6. In PNF inversion of the ankle and internal rotation of the tibia are consistent with _____?
 - A. Hip abduction and external rotation
 - B. Hip adduction and internal rotation
 - C. Hip extension and external rotation
 - D. Hip flexion and internal rotation
 - E. None of the above

7. Which of the following PNF techniques would assist the patient to achieve motion of a part or joint if rigidity of the joint was a problem?
 - A. Hold Relax
 - B. Repeated Contraction
 - C. Rhythmic Initiation
 - D. Rhythmic Stabilization
 - E. None of the above

8. The PNF technique known as Slow Reversal involves an _____ contraction of agonistic muscle groups followed immediately by an _____ contraction of antagonistic muscle groups which together produces full ROM in opposite directions.

- A. Isometric, isotonic
- B. Isotonic, isometric
- C. Isometric, isometric
- D. Isotonic, isotonic
- E. None of the above

9. What is the upper extremity pattern for the shoulder with Diagonal 1 Flexion?

- A. Flexion, abduction, external rotation
- B. Flexion, abduction, internal rotation
- C. Flexion, adduction, internal rotation
- D. Flexion, adduction, external rotation
- E. None of the above

10. Which of the following PNF techniques would be used for the athlete who has a condition where pain prevents active motion?

- A. Rhythmic Stabilization
- B. Hold Relax
- C. Contract Relax
- D. All of the above
- E. None of the above

11. What is the upper extremity pattern for the shoulder with Diagonal 1 Extension?

- A. Extension, adduction, internal rotation
- B. Extension, abduction, external rotation
- C. Extension, abduction, internal rotation
- D. Extension, adduction, internal rotation

12. Which PNF technique would be best to increase ROM if the athlete has an acute orthopedic condition?

- A. Contract Relax
- B. Slow REversal Hold Relax
- C. Rhythmic Initiation
- D. All of the above
- E. None of the above

13. What is the upper extremity pattern for the shoulder with the Diagonal 2 Extension?

- A. Extension, abduction, external rotation
- B. Extension, adduction, internal rotation
- C. Extension, adduction, external rotation
- D. Extension, abduction, internal rotation

14. The technique of manual approximation during exercise may be useful in?

- A. Inhibiting co-contraction
- B. Facilitating extensors
- C. Inhibiting flexor spasticity
- D. Facilitating flexors
- E. None of the above

15. What is the upper extremity pattern for the shoulder with the Diagonal 2 Flexion?

- A. Flexion, adduction, internal rotation
- B. Flexion, abduction, external rotation
- C. Flexion, abduction, internal rotation
- Flexion, adduction, external rotation

16. When normal timing is being used on the flexion-abduction- external rotation pattern of the upper extremity, the first motion to occur is?

- A. Wrist extension
- B. Finger flexion, and abduction
- C. Wrist flexion
- D. Finger extension, and abduction

17. Which PNF technique increases ROM?

- A. Slow Reversal
- B. Rhythmic Stabilization
- C. REpeated Contraction
- D. Both A and B
- E. None of the above

18. Which of the PNF techniques increases strength?

- A. Rhythmic Initiation
- B. Slow REversal Hold RELax
- C. Slow Reversal Hold
- D. Both A and C
- E. None of the above

19. An athlete demonstrates a chronic ankle inversion sprain. What PNF technique could you use to strengthen the peroneals and the evertors?

- A. Diagonal 2 Flexion
- B. Diagonal 1 Flexion
- C. Diagonal 2 Extension
- D. Diagonal 1 Extension
- E. None of the above

20. Which of the following groups of muscles are involved with PNF Diagonal 1 Flexion of the lower extremity?

- A. Rectus Femoris, Sartorius, Gracilis
- B. Semitendinosus, Gracilis, Vastus Medialis
- C. Semitendinosus, Semimembranosus, Sartorius
- D. Sartorius, Gracilis, Vastus Medialis

Electrical Muscle Stimulation Questions

What is Ohm's Law?

- a. Voltage = Current flow \div Resistance
- b. Resistance = Current flow \div Voltage
- c. Current flow = Voltage \div Resistance
- d. Current flow = Resistance \div Voltage

What effect is derived from using TENS or Galvanic stimulation?

- a. muscle contraction
- b. increased strength
- c. decreased atrophy
- d. decreased pain

Indications for EMS are:

- a. Re-education of muscle
- b. Retard hypertrophy
- c. Increase endurance
- d. Decrease blood flow

Contraindications for EMS are:

- a. Over thorax
- b. skin burn
- c. pacemakers
- d. all of the above

Which of the following is a faradic wave?

- a.
- b.
- c.
- d.



During EMS, when does the muscle stop contracting?

- a. Never
- b. When current stops
- c. Depends on type of EMS
- d. Muscle doesn't contract

What nerve fibers does a TENS current stimulate?

- a. Motor
- b. Sensory
- c. Peripheral
- d. Large-diameter

What happens to the muscle during polarization?

- a. Nothing
- b. Contracts
- c. Relaxes
- d. None of the above

What happens to the muscle during depolarization?

- a. Nothing
- b. Contracts
- c. Relaxes
- d. None of the above

- . Which is the most comfortable?
 - a. Continuous modulation
 - b. Interrupted modulation
 - c. Surged modulation
 - d. Uninterrupted

- . When does EMS yield the best benefits in preventing atrophy?
 - a. Prior to surgery
 - b. During rehab
 - c. When immobilized
 - d. During surgery

- . What is AC?
 - a. Accelerated Current
 - b. Alternating Circuit
 - c. Accelerated Circuit
 - d. Alternating Current

- . What is DC?
 - a. Direct Circuit
 - b. Direct Current
 - c. Decreased Current
 - d. Decreased Circuit

- . What body tissue is considered the best conductor?
 - a. Muscle
 - b. Fat
 - c. Blood
 - d. Skin

- . What body tissue is considered the worst conductor?
 - a. Muscle
 - b. Fat
 - c. Blood
 - d. Skin

- . Effect(s) of electrical current on body tissue are:
 - a. Thermal
 - b. Chemical
 - c. Physiological
 - d. All of the above

- . What is rheobase?
 - a. The minimum intensity of current necessary to cause tissue excitation when applied for a minimum duration.
 - b. The maximal intensity of current necessary to cause tissue excitation when applied for a maximum duration.
 - c. The minimum intensity of current necessary to cause tissue excitation when applied for a maximum duration.
 - d. The maximum intensity of current necessary to cause tissue excitation when applied for a minimum duration.

- . What is chronaxie?
 - a. The length of time a current needs to produce tissue excitation.
 - b. The length of time a current twice the intensity of the rheobase current needs to produce tissue excitation.
 - c. The production of tissue excitation.
 - d. The length of time a current needs to stop tissue excitation.

- . With which type of EMS is the Gate Theory of Pain Control associated?
 - a. Omni-stim
 - b. Galvanic
 - c. TENS
 - d. All of the above.

- . What is an amp?
 - a. The electromotive force
 - b. Measurement of electrical force
 - c. The rate of the flow of electrical current
 - d. The movement of electrons

1. Which fiber type is predominately involved in endurance activities?
 - a. SO
 - b. FOG
 - c. FG

2. Blood clotting is inhibited by which of the following?
 - a. fibrinogen
 - b. thrombin
 - c. prothrombin
 - d. heparin

3. Which of the following is a substance which induces clotting by converting fibrinogen to fibrin?
 - a. heparin
 - b. thrombin
 - c. prothrombin
 - d. calcium

4. The type of muscle contraction which does not involve moving the joint through a full range of motion is
 - a. isotonic
 - b. isometric
 - c. isokinetic
 - d. eccentric

5. Respiratory rate x Tidal volume =
 - a. pulmonary ventilation
 - b. vital capacity
 - c. total lung capacity
 - d. oxygen uptake

6. The amount of blood pumped from the heart each minute is called the
 - a. stroke volume
 - b. heart rate
 - c. cardiac output
 - d. residual volume

7. Which factor does not affect adaptations to chronic exercise?
 - a. type of training
 - b. environmental factors
 - c. intensity of each performance
 - d. initial level of fitness

8. Which of the following is not a physical response to an acute injury?
- a. Tissue damage
 - b. Swelling
 - c. Calcium deposits
 - d. Pain
9. Which of the following tissues regenerates most quickly and remodels itself most like the original tissue?
- a. Cartilage
 - b. Connective tissue
 - c. Bone
 - d. Muscle
10. Which chemical is released at the onset of an acute injury and causes permeability?
- a. Histamine
 - b. Thyrotropin
 - c. Somatotropin
 - d. Oxytosin
11. Characteristics of fast twitch oxidative-glycolytic fibers include all but which of the following?
- a. Red appearance
 - b. Fast contractile speed
 - c. Large size
 - d. Low capillarization
12. Which nutrient causes the connecting of the actin and myosin filaments in muscle contraction?
- a. Calcium
 - b. Potassium
 - c. Phosphorus
 - d. Sodium
13. Reactions of the aerobic system include all but which of the following?
- a. Aerobic glycolysis
 - b. Lactic acid accumulation
 - c. Kreb's cycle
 - d. Electron transport system

14. Which of the following systems is used most in sprinting activities?
- a. ATP-PC
 - b. Anaerobic glycolysis
 - c. Aerobic glycolysis
 - d. Kreb's cycle
15. Which of these aerobic conditioning programs is the minimum in order to produce a training effect on the heart?
- a. 20 min. 3x/week
 - b. 30 min. 4x/week
 - c. 20 min. 4x/week
 - d. 30 min. 3x/week
16. Which fiber type is predominately involved in sprint type activities?
- a. SO
 - b. FOG
 - c. FG
 - d. FG
17. Which of the following is not an intended outcome of application of the R.I.C.E principle?
- a. Decreased blood flow
 - b. Reduced swelling
 - c. Vasodilation
 - d. Decreased tissue damage
18. A runner competing in the 1600m would be using which fiber type and energy system most?
- a. SO-aerobic
 - b. FG-anaerobic
 - c. FOG-aerobic
 - d. FOG anaerobic
19. Which of the following anaerobic processes are not reversible with energy?
- a. $ATP \rightleftharpoons ADP + P + \text{energy}$
 - b. $CP \rightleftharpoons C + P + \text{energy}$
 - c. Kreb's cycle
 - d. $\text{Glycogen} \rightarrow \text{Pyruvic acid} \rightleftharpoons \text{Lactic acid}$
20. Which of the following is not true of anerobic glycolysis?
- a. Does not require oxygen
 - b. Releases enough for resynthesis of only a few moles of ATP
 - c. uses only carbohydrates as fuel
 - d. does not produce lactic acid

Multiple Choice Questions

1. What is osteochondritis dissecans?
 - a. bone formation in the muscle
 - b. partial or complete separation of cartilage or bone
 - c. inflamed synovial plica
 - d. arthritis of a joint
 - e. patellar tendinitis
2. What is myositis ossificans?
 - a. inflammatory reaction to medicine
 - b. disease of the bone
 - c. bone formation in a hematoma in the muscle
 - d. patella fracture
 - e. none of the above
3. Morton's Neuroma occurs between which metatarsals?
 - a. 1 & 2
 - b. 4 & 5
 - c. 2 & 3
 - d. 3 & 4
 - e. none of the above
4. What is a Baker's Cyst?
 - a. tumor of the hand
 - b. cyst in metatarsal region
 - c. inflamed sub-deltoid bursae
 - d. inflammation of metacarpals
 - e. swelling in popliteal fossa of knee
5. The symptoms of a Baker's Cyst are?
 - a. painful, swelling, very uncomfortable
 - b. usually painless, noticeable swelling, no real discomfort
 - c. patient can move arm only to 90 deg.
 - d. can't walk or run without severe pain
 - e. can only move around with crutches
6. What structures are involved in shoulder impingement syndrome?
 - a. supraspinatus tendon, sub-acromial bursae, biceps tendon
 - b. infraspinatus, supraspinatus
 - c. sub-deltoid bursae, peroneus longus
 - d. subscapularis, ac joint
 - e. none of the above
7. What action causes pain in turf toe?
 - a. extension of toe
 - b. dorsiflexion of ankle
 - c. plantarflexion of ankle
 - d. flexion of great toe
 - e. eversion of ankle

8. What muscles are involved in a hip pointer?
- vastus medialis, vastus lateralis
 - iliopsoas, tensor fascia latae
 - gluteals, internal and external obliques
 - superior gemellus, inferior gemellus
 - peroneus longus, abductor hallucis longus
9. What causes winged scapula?
- weakness of serratus anterior muscle
 - weakness of deltoid and trapezius
 - ac separation
 - anterior glenohumeral dislocation
 - kyphosis of spine
10. How is tennis elbow test performed?
- resisted elbow flexion
 - empty can test
 - provide resistance against wrist extension
 - shoulder abduction
 - resisted elbow extension
11. 3 areas most likely to be affected by plantar fasciitis?
- attachment to calcaneus, medial arch, near abductor hallucis longus
 - transverse arch, navicular, flexor digitorum muscle
 - near metatarsals, between 3rd and 4th toes, near talus
 - near talus, medial arch area, tip of medial tubercle of calcaneus
 - none of the above
12. Osgood Schlatters can come from?
- repeated avulsion of patellar tendon
 - severe blow to patella
 - valgus force
 - excessive running mileage
 - tendinitis of origin of patellar tendon
13. Special test to determine chondromalacia?
- mcmurrays
 - lachmans
 - patellar grind
 - wilsons
 - anterior drawer
14. Iliotibial band tendinitis is concentrated in what area?
- medial femoral condyle
 - lateral femoral condyle
 - tibial tubercle
 - sternum
 - origin near the hip

15. The symptoms of shoulder impingement syndrome?
- a. weakness in all motions, severe pain
 - b. severe swelling, discoloration
 - c. deformity over ac, weakness overhead
 - d. no pain, strong overhead, no weakness
 - e. weakness overhead, dull pain, steadily gets worse
16. What muscle is usually associated with tennis elbow?
- a. extensor carpi radialis longus
 - b. flexor carpi radialis
 - c. extensor carpi radialis brevis
 - d. pronator teres
 - e. extensor digitorum
17. Symptoms of myositis ossificans?
- a. hard lump, atrophy of muscle, loss of rom
 - b. no deformity, no loss of rom
 - c. no strength loss, no swelling
 - d. hard lump, no rom loss, not from previous bruise
 - e. none of the above
18. Bakers cyst can be caused by?
- a. inflammation of gastrocnemius-semi-tendinosus bursae
 - b. inflammation of sub-deltoid bursae
 - c. acl tear
 - d. rotator cuff tear
 - e. skin infection over the knee
19. What is the best test for serratus anterior strength?
- a. push up
 - b. shoulder retraction
 - c. shoulder protraction
 - d. shoulder abduction
 - e. shoulder elevation
20. Osteochondritis dissecans is usually caused by?
- a. bone formation in the muscle
 - b. severe valgus stress
 - c. contusion to the elbow
 - d. impaired blood supply
 - e. parachuting without a parachute

Use the following questions to help you study for the test (do not simply look at the answer key!!)

True or False

1. ___ Individuals with epilepsy cannot participate in contact sports.
2. ___ A primary objective of the preparticipation physical examination is to determine whether an athlete may participate safely in spite of having a recognizable problem.
3. ___ Ballistic stretching is the most recommended type of stretch for all types of athletes.
4. ___ There is a significant link to injuries in sport and the lack of an athletes flexibility.
5. ___ There are two basic types of helmets used in football: padded and silicone-filled.
6. ___ Shoulder pads should cover the sternum.
7. ___ Face masks differ from position to position
8. ___ One criteria of an acute injury assessment is obtaining the information needed for required documentation.
9. ___ A functional test requires the athlete to move the injured limb through normal range of motion.
- 10 ___ An athletic trainer has the legal right to assess, produce a diagnosis and treat athletic injuries.
11. ___ The diabetic athlete is more prone to suffer from dehydration and heat illnesses.
12. ___ Exercise is a therapeutic modality.
13. ___ Ultrasound uses acoustic energy.
14. ___ Isometric exercises are very useful in increasing muscle size.
15. ___ Stress fractures always occur due to weight bearing impact forces, such as jumping.
16. ___ The strength of collagen is due to its triple helix, cross linkage configuration.
17. ___ A distal epiphysis is more likely to be injured than proximal epiphysis.
18. ___ A hematoma of the pinna is commonly known as "cauliflower ear".
19. ___ The bones of the nose are the most frequently fractured face bones.
20. ___ The acromioclavicular joint is very stable and rarely injured.
21. ___ A shoulder pointer is another name for a contusion to the outer end of the clavicle.
22. ___ There are only two types of movement in the elbow.
23. ___ The superior radioulnar joint allows for supination and pronation of the elbow.
24. ___ Overuse cannot cause a sprain of a ligament.
25. ___ The Phalen's test and the Tinel's Sign are used in diagnosing carpal tunnel syndrome.
26. ___ Poor running style can result in an acute strain of the hamstring.
27. ___ A normal Q angle for females is less than 16 degrees.
28. ___ Blisters heal faster if immediately broken open.
29. ___ Good physical conditioning can compensate for inadequate nutrition.
30. ___ The vitamin requirement of an athlete is much greater than that of a sedentary person.

Multiple Choice

1. How many sport significant problems can be determined with a complete history?
 - a. 80%
 - b. 54%
 - c. 74%
 - d. 35%
2. Exercising daily for ___ while maintaining the pulse at target heart rate will increase cardiovascular endurance.
 - a. 15 minutes
 - b. 30 minutes
 - c. 45 minutes
 - d. 1 hour
3. An isometric exercise is best described as:
 - a. muscle contraction with no movement
 - b. fixed resistance
 - c. a contraction with muscle shortening
 - d. fixed speed, resistance accommodates to force applied.
4. How high above the eyebrow should the frontal rim of the helmet fit?
 - a. In line with the eyebrow
 - b. Just above
 - c. One inch
 - d. Two inches
5. When testing the passive range of motion in an athlete, the athletic trainer can:
 - a. Establish an endpoint of the range of motion
 - b. Observe the athlete's ability to control his/her muscle.
 - c. Determine the strength of the muscle being tested.
 - d. Compare to the uninjured body part
 - e. All of the above
6. A sprain refers to:
 - a. injury to muscle tissue
 - b. injury to a tendon
 - c. injury to a ligament
 - d. a bruise
7. Concentric and eccentric contractions are important components of which of the following exercises?
 - a. isometric
 - b. isotonic
 - c. isokinetic
 - d. isoelectric
8. Pain that becomes worse at night is highly suggestive of what?
 - a. phase I micotrauma
 - b. muscle/tendon junction pain
 - c. microscopic lesions
 - d. bone pain

9. Visually seeing one image as two is known as:
- hypoesthesia
 - acuity
 - illusion
 - diplopia
10. The apprehension test is performed by _____ the arm.
- extension and internal rotation
 - flexion and internal rotation
 - adduction and external rotation
 - abduction and external rotation
11. Most elbow dislocations occur _____ and is a result of _____.
- posteriorly, hyperextension
 - anteriorly, hyperflexion
 - laterally, varus stress
 - medially, valgus stress
12. "Handlebar Palsy" occurs most frequently in:
- weightlifters
 - crewmembers
 - motorcross riders
 - cyclists
13. Which of the following nerves does not originate from the brachial plexus?
- ulnar nerve
 - radial nerve
 - median nerve
 - phrenic nerve
14. Which of the four muscles in the quadriceps plays an important role in stabilizing the patella?
- Vastus Medialis
 - Vastus Intermedius
 - Vastus Lateralis
 - Rectus Femoris
15. While performing the Thompson Test, a negative sign will cause the foot to:
- plantar flex
 - dorsi flex
 - invert
 - evert

Instructions: For question 16-21 place the correct letter that corresponds with the proper statement in muscle grading on the blank line.

A= Normal (5)	D= Poor (2)
B= Good (4)	E= Trace (1)
C= Fair (3)	F= Zero (0)

16. _____ A joint has no evidence of contractility.
17. _____ A joint with complete range of motion against gravity with some resistance.

Multiple Choice

1. How many sport significant problems can be determined with a complete history?
 - a. 80%
 - b. 54%
 - c. 74%
 - d. 35%
2. Exercising daily for ___ while maintaining the pulse at target heart rate will increase cardiovascular endurance.
 - a. 15 minutes
 - b. 30 minutes
 - c. 45 minutes
 - d. 1 hour
3. An isometric exercise is best described as:
 - a. muscle contraction with no movement
 - b. fixed resistance
 - c. a contraction with muscle shortening
 - d. fixed speed, resistance accommodates to force applied.
4. How high above the eyebrow should the frontal rim of the helmet fit?
 - a. In line with the eyebrow
 - b. Just above
 - c. One inch
 - d. Two inches
5. When testing the passive range of motion in an athlete, the athletic trainer can:
 - a. Establish an endpoint of the range of motion
 - b. Observe the athlete's ability to control his/her muscle.
 - c. Determine the strength of the muscle being tested.
 - d. Compare to the uninjured body part
 - e. All of the above
6. A sprain refers to:
 - a. injury to muscle tissue
 - b. injury to a tendon
 - c. injury to a ligament
 - d. a bruise
7. Concentric and eccentric contractions are important components of which of the following exercises?
 - a. isometric
 - b. isotonic
 - c. isokinetic
 - d. isoelectric
8. Pain that becomes worse at night is highly suggestive of what?
 - a. phase I micotrauma
 - b. muscle/tendon junction pain
 - c. microscopic lesions
 - d. bone pain

9. Visually seeing one image as two is known as:
- hypoesthesia
 - acuity
 - illusion
 - diplopia
10. The apprehension test is performed by _____ the arm.
- extension and internal rotation
 - flexion and internal rotation
 - adduction and external rotation
 - abduction and external rotation
11. Most elbow dislocations occur _____ and is a result of _____:
- posteriorly, hyperextension
 - anteriorly, hyperflexion
 - laterally, varus stress
 - medially, valgus stress
12. "Handlebar Palsy" occurs most frequently in:
- weightlifters
 - crewmembers
 - motorcross riders
 - cyclists
13. Which of the following nerves does not originate from the brachial plexus?
- ulnar nerve
 - radial nerve
 - median nerve
 - phrenic nerve
14. Which of the four muscles in the quadriceps plays an important role in stabilizing the patella?
- Vastus Medialis
 - Vastus Intermedius
 - Vastus Lateralis
 - Rectus Femoris
15. While performing the Thompson Test, a negative sign will cause the foot to:
- plantar flex
 - dorsi flex
 - invert
 - evert

Instructions: For question 16-21 place the correct letter that corresponds with the proper statement in muscle grading on the blank line.

A= Normal (5)	D= Poor (2)
B= Good (4)	E= Trace (1)
C= Fair (3)	F= Zero (0)

16. _____ A joint has no evidence of contractility.
17. _____ A joint with complete range of motion against gravity with some resistance.

18. _____ A joint has complete range of motion against gravity with full resistance, no pain persists.

19. _____ A joint has evidence of slight contractility, no joint motion observed.

20. _____ A joint has complete range of motion against gravity with no resistance.

21. _____ A joint has complete range of motion with gravity eliminated.

Essay Questions

1. List the factors involved in immediately managing a head injury.

2. List six symptoms, signs and/or tests used to evaluate the seriousness of a head injury.

3. List the muscles of the rotator cuff and name the tests used to determine shoulder stability.

4. How many movements is the thumb capable of? What are they?

Answer Key

True/False

- | | |
|-------|-------|
| 1. F | 16. T |
| 2. T | 17. T |
| 3. F | 18. T |
| 4. T | 19. T |
| 5. F | 20. F |
| 6. T | 21. T |
| 7. T | 22. T |
| 8. T | 23. T |
| 9. F | 24. F |
| 10. F | 25. T |
| 11. T | 26. T |
| 12. T | 27. T |
| 13. T | 28. F |
| 14. F | 29. F |
| 15. F | 30. F |

Multiple Choice

1. C
2. B
3. A
4. D
4. A
6. C
7. B
8. D
9. D
10. D
11. A
12. D
13. D
14. A
15. A
16. F
17. B
18. A
19. E
20. C
21. D

Essay Questions

1. First, assess the athlete's state of consciousness. Then assess and observe the athlete's breathing and circulation. Next make a decision as to the appropriate form of management (i.e. 911, Special Tests, concussion card). Last, the athletic trainer should always assume that a neck injury is present until proven otherwise.
2. Headache, Nausea and vomiting, Amnesia, Tinnitus, Pupils, Eye movements (nystagmus), Finger/nose coordination test, Romberg's test, Heel/toe walking, Pulse, Respiratory difficulty, fluid leaking from ears, and loss of emotional control.
3. Supraspinatus, Infraspinatus, Teres Minor, Subscapularis, Tests: Apprehension test, Pressure displacement test
4. Six movements, they include:
 - Abduction
 - Adduction
 - Opposition
 - Circumduction
 - Flexion
 - Extension

