Certified Master Trainer

Final Exam Master Copy

Correct Answers are listed at the bottom.

1. How many ounces of water should an active adult consume per day?
   1. 12
   2. 24
   3. 68
   4. 192
2. The human body contains how many bones?
   1. 192
   2. 300
   3. 206
   4. 220
3. Muscle fibers are composed of the following filaments except?
   1. Actin
   2. Myosin
   3. Titin
   4. Lactate
4. What is known as the “power house of the cell?
   1. Cell membrane
   2. Cell wall
   3. Mitochondria
   4. Sarcoplasmic reticulum
5. What contraction produces the most muscle damage?
   1. Concentric
   2. Isometric
   3. Eccentric
   4. Isotension
6. When a phosphate bond is broken in an ATP molecule what is produced?
   1. AMP
   2. CrP
   3. ADP
   4. H2O
7. What equation will give you cardiac output?
   1. Stroke volume X heart rate
   2. Stroke volume X lung volume
   3. Heart rate X lung volume
   4. Heart rate X VO2max
8. What pumps blood to the body?
   1. Right atrium
   2. Left ventricle
   3. Right ventricle
   4. Left atrium
9. What pumps blood to the left ventricle?
   1. Right atrium
   2. Left atrium
   3. Aorta
   4. Right ventricle
10. Deoxygenated blood is pumped to the lungs by what heart chamber?
    1. Left ventricle
    2. Left atrium
    3. Right atrium
    4. Right ventricle
11. The truest test of aerobic capacity is \_\_\_\_\_\_\_\_\_\_\_.
    1. 1-mile
    2. 3-mile
    3. VO2max
    4. ½ marathon
12. A sarcomere unit runs from \_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_.
    1. Z line / Z line
    2. Z line / M zone
    3. A band / A band
    4. M zone / M zone
13. Pull ups work all of the following except?
    1. Lats
    2. Biceps
    3. Abs
    4. Hamstrings
14. The rate limiting enzyme in glycolysis is \_\_\_\_\_\_\_\_\_.
    1. Isocitrate dehydrogenase
    2. PFK
    3. Pyruvate
    4. Lactic acid
15. All of the following are primary aerobic metabolic pathways except?
    1. Electron transport chain
    2. Krebs cycle
    3. Citric acid cycle
    4. Glycolysis
16. All of the following are enzymes within the Krebs cycle except?
    1. Alpha-ketoglutarate dehydrogenase
    2. Citrate synthase
    3. Isocitrate dehydrogenase
    4. Latate dehydrogenase
17. The Krebs cycle occurs in the \_\_\_\_\_\_\_\_\_\_\_.
    1. Cytoplasmic reticulum
    2. Mitochondria
    3. Cell membrane
    4. Cytosol
18. Glycolysis is \_\_\_\_\_\_\_\_\_\_\_.
    1. Anaerobic
    2. Aerobic
    3. For marathons
    4. Best for swimming
19. Glycolysis takes place in the \_\_\_\_\_\_\_\_\_\_\_.
    1. Mitochondria
    2. Cytosol
    3. Cell membrane
    4. Cell wall
20. Hypertrophy occurs in all of the follow mechanisms except?
    1. Mechanical tension
    2. Metabolic stress
    3. Muscle damage
    4. Muscle pump
21. Training should mimic movements used in an athlete’s sport is derived from what principle?
    1. Progressive overload
    2. Specificity
    3. Sport training
    4. Athletic training
22. Gradual increase of stress placed on the body during exercise is the \_\_\_\_\_\_\_\_\_\_ principle.
    1. Mass building
    2. Progressive overload
    3. Specificity
    4. Hypertrophy
23. What is the safest form of cardio for clients with knee injuries?
    1. Swimming
    2. Running
    3. Jumping
    4. Hiking
24. All of the following are upper back muscles except?
    1. Rhomboids
    2. Lats
    3. Trapezius
    4. Semitendinosus
25. All of the following are muscles in the leg except?
    1. Vastus lateralus
    2. Vastus medialus
    3. Seratus anterior
    4. Semimembranosus
26. All of the following are primarily used for chest press except?
    1. Pectoralis minor
    2. Pectoralis major
    3. Levator scapulae
    4. External intercostals
27. Athletes should consume at least \_\_\_\_ grams of protein per day to maintain and/or gain muscle.
    1. 0.5 / kg bodyweight
    2. 1.8 / kg bodyweight
    3. 50
    4. 85
28. The vertical jump tests \_\_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. Flexibility
    4. Endurance
29. The following are common aerobic tests except?
    1. 1-mile
    2. 3-mile
    3. VO2max
    4. Sit-n-reach
30. Running at varied speeds and inclines is \_\_\_\_\_\_\_.
    1. Military training
    2. Cross country training
    3. Fartlek training
    4. Crossfit
31. A 1-RM bench press test is testing \_\_\_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. Endurance
    4. Flexibility
32. The maximal amount of force that can be produced by a muscle or group of muscles is \_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. ROM
    4. Endurance
33. The time that it takes to produce a given amount of force is \_\_\_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. Acceleration
    4. Momentum
34. The sit and reach test is commonly used to test \_\_\_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. Flexibility
    4. Endurance
35. Bench pressing 225 pounds for as many reps as possible is testing \_\_\_\_\_\_\_\_\_\_\_\_.
    1. Strength
    2. Power
    3. Endurance
    4. Flexibility
36. Type I fibers can be fully converted into Type IIb fibers if trained properly.
    1. True
    2. False
37. \_\_\_\_\_\_\_\_ fatigue the fastest.
    1. Type I
    2. Type Ia
    3. Type IIa
    4. Type IIb
38. \_\_\_\_\_\_\_\_ fatigue the slowest.
    1. Type I
    2. Type Ib
    3. Type IIa
    4. Type IIb
39. \_\_\_\_\_\_\_\_ are capable of producing the greatest force.
    1. Type I
    2. Type Ia
    3. Type IIa
    4. Type IIb
40. \_\_\_\_\_\_\_\_ are used primarily for marathons.
    1. Type I
    2. Type Ibx
    3. Type IIa
    4. Type IIb
41. 4 grams of protein contains less calories than 2 grams of fat.
    1. True
    2. False
42. All of the following phosphate containing molecules can bond the form ATP except?
    1. ATP
    2. ADP
    3. AMP
    4. CrP
43. BMI isn’t a good indicator of health risk in athletic populations because \_\_\_\_\_\_\_\_.
    1. All athletes are healthy
    2. BMI increases with added lean muscle weight
    3. BMI isn’t accurate
    4. The BMI scale doesn’t go high enough
44. \_\_\_\_\_\_\_\_\_ is the bone in the upper arm.
    1. Humerus
    2. Biceps
    3. Acromion
    4. Radius
45. \_\_\_\_\_\_\_\_\_ is the bone in the upper leg.
    1. Humerus
    2. Quadriceps
    3. Femur
    4. Tibia
46. \_\_\_\_\_\_\_\_\_ connects bone to bone.
    1. Tendons
    2. Bone tendons
    3. Ligaments
    4. Cartilage
47. \_\_\_\_\_\_\_\_\_ connects muscle to bone.
    1. Tendons
    2. Ligaments
    3. Cartilage
    4. Nerves
48. The 1st adaptation that occurs when a sedentary individual begins a cardio program is \_\_\_\_\_\_\_.
    1. Increase RBC
    2. Decreased RBC
    3. Increased plasma volume
    4. Increased WBC
49. \_\_\_\_\_\_\_\_\_\_\_\_ is pressure exerted against the arterial walls when blood is ejected from the ventricles.
    1. Diastolic
    2. Systolic
    3. Heart pressure
    4. Ejection fraction pressure
50. A nerve is composed of all of the following except?
    1. Axon
    2. Dendrite
    3. Cell body
    4. Red blood cells
51. During fast glycolysis, the end product is converted into \_\_\_\_\_\_\_\_\_\_.
    1. Lactate
    2. AMP
    3. Fatty acids
    4. CrP
52. \_\_\_\_\_\_\_\_ is the acronym used to describe muscle soreness.
    1. DMOS
    2. DOMS
    3. MOMS
    4. PTSD
53. Lactate is used primarily in what metabolic pathway?
    1. Krebs cycle
    2. Glycolysis
    3. ETC
    4. Cori Cycle
54. \_\_\_\_\_\_\_\_\_\_\_ separates the body into right and left halves.
    1. Sagittal plane
    2. Frontal plane
    3. Transverse plane
    4. Midfrontal plane
55. \_\_\_\_\_\_\_\_\_\_ separates the body into upper and lower halves.
    1. Sagittal plane
    2. Frontal plane
    3. Transverse plane
    4. Midtransverse plane
56. Torso rotation occurs in what plane?
    1. Sagittal
    2. Frontal
    3. Transverse
    4. Midsagital
57. \_\_\_\_\_\_\_\_\_ is towards the front.
    1. Anterior
    2. Posterior
    3. Ventral
    4. Both A and C
58. \_\_\_ vertebrae make up the lumbar spine.
    1. 5
    2. 6
    3. 7
    4. 8
59. Which of the follow is a “ball and socket” joint?
    1. Hip
    2. Elbow
    3. Knee
    4. Ankle
60. Gases are exchanged through \_\_\_\_\_\_ in the pulmonary system.
    1. Bronchi
    2. Alveoli
    3. Left ventricle
    4. Blood vessels
61. \_\_\_\_\_\_\_\_\_ is used to test static strength.
    1. Dynamometer
    2. Fat grips
    3. Skin fold calipers
    4. Hydrostatic tank
62. Which of the following best describes what occurs in asthma?
    1. Jdfsa
    2. Narrowing of the bronchial airways
    3. Fd
    4. D
63. An imbalance in O2 demand and supply in the heart is known as \_\_\_\_\_\_\_\_.
    1. A
    2. Ischemia
    3. A
    4. A
64. “Hardening” of the arteries is known as \_\_\_\_\_\_\_\_\_
    1. arteriosclerosis
    2. A
    3. A
    4. A
65. The following lung condition is not fully reversible?
    1. A
    2. A
    3. Chronic obstructive pulmonary disease
    4. A
66. \_\_\_\_\_\_\_\_\_ is the preferred form of exercise for senior adults.
    1. A
    2. swimming
    3. A
    4. A
67. Sweating helps cool the body by \_\_\_\_\_\_\_\_.
    1. A
    2. Evaporation of sweat carries heat away from the body
    3. A
    4. A
68. \_\_\_\_\_\_\_\_ are commonly referred to as “white blood cells.”
    1. A
    2. leukocytes
    3. A
    4. A
69. During aerobic exercise, which would not be considered normal?
    1. A
    2. Increased diastolic blood pressure
    3. A
    4. A
70. ATPase that produces muscle fiber contractions is found \_\_\_\_\_\_\_\_\_.
    1. A
    2. A
    3. On the myosin cross-bridge heads
    4. A
71. Which of the following is composed on only one cell layer and functions to exchange waste and nutrients between the blood and tissues?
    1. Veins
    2. Arteries
    3. Capillaries
    4. Blood vessels
72. Which of the following is a common site for a skin fold measurement?
    1. A
    2. subscapular
    3. A
    4. A
73. Which of the following decreases joint angle and occurs in the sagittal plane around a mediolateral axis?
    1. A
    2. flexion
    3. A
    4. A
74. Which valve does blood flow through when moving from the right atrium to the right ventricle?
    1. A
    2. A
    3. tricuspid
    4. A
75. In a \_\_\_\_\_ class lever, the effort force lies closer to the axis of the lever than the resistance, and the force arm is smaller than the resistance arm.
    1. A
    2. 3rd
    3. A
    4. A
76. In a \_\_\_\_\_ class lever, the resistance lies between the effort force and the axis of rotation and the force arm is greater than the resistance arm.
    1. A
    2. 2nd
    3. A
    4. A
77. In a \_\_\_\_\_ class lever, the axis is between the force and the resistance arm, and the force arm may be greater than, smaller than, or equal to the resistance arm.
    1. A
    2. A
    3. 1st
    4. A
78. Nerve transmissions occur by neurotransmitters crossing a synaptic cleft. What is the neurotransmitter that makes this possible?
    1. A
    2. ACh
    3. A
    4. A
79. All of the following are hip bones except?
    1. A
    2. Patella
    3. A
    4. A
80. \_\_\_\_ vertebrae make up the thoracic spine.
    1. A
    2. A
    3. 12
    4. A
81. \_\_\_\_ vertebrae make up the cervical spine.
    1. A
    2. 7
    3. A
    4. A
82. \_\_\_\_\_\_\_\_\_ is extension of the ankle joint.
    1. A
    2. A
    3. plantarflexion
    4. A
83. \_\_\_\_\_\_\_\_\_ is flexion of the ankle joint.
    1. A
    2. dorsiflexion
    3. A
    4. A
84. Posterior, or dorsal, is towards the \_\_\_\_\_\_\_\_\_\_.
    1. A
    2. A
    3. rear
    4. A
85. Anterior, or ventral, is towards the \_\_\_\_\_\_\_\_\_\_.
    1. A
    2. front
    3. A
    4. A
86. The \_\_\_\_\_\_\_\_\_ separates the body into superior and inferior divisions.
    1. A
    2. Transverse plane
    3. A
    4. A
87. The \_\_\_\_\_\_\_\_\_ separates the body anteriorly and posteriorly.
    1. A
    2. A
    3. Frontal plane
    4. A
88. The \_\_\_\_\_\_\_\_\_ separates the body into right and left divisions.
    1. A
    2. A
    3. Sagittal plane
    4. A
89. The Appendicular skeleton includes all of the following except?
    1. A
    2. A
    3. ribs
    4. A
90. All of the following are part of the Axial skeleton except?
    1. A
    2. arms
    3. A
    4. A
91. The rating of perceived exertion is a \_\_\_\_\_\_\_\_\_.
    1. A
    2. Subjective form of measuring intensity
    3. A
    4. A
92. The lactate threshold represents \_\_\_\_\_\_\_\_\_\_.
    1. A
    2. increased reliance on anaerobic metabolism
    3. A
    4. A
93. The end product of slow glycolysis is used in the \_\_\_\_\_\_\_\_.
    1. A
    2. A
    3. Krebs cycle
    4. A
94. During fast glycolysis, pyruvate is converted into \_\_\_\_\_\_\_\_.
    1. A
    2. A
    3. lactate
    4. A
95. When an individual trains with cardiovascular activities \_\_\_\_\_\_\_\_.
    1. A
    2. RBC increase
    3. A
    4. A
96. \_\_\_\_\_\_\_\_\_\_ is the blood pressure when no blood is being ejected from the ventricles.
    1. A
    2. diastolic
    3. A
    4. A
97. What covers the axon that allows faster nerve conduction?
    1. RBC
    2. protein
    3. Myelin sheath
    4. Creatine
98. \_\_\_\_\_\_\_\_\_\_ is an oxygen transport through the body?
    1. Lactic acid
    2. RBC
    3. WBC
    4. proteins
99. Quickly squatting before performing a vertical jump results in a higher jump compared to a static squat jump due to?
    1. Stretch reflex
    2. More tempo
    3. Faster tempo
    4. Longer fibers

Correct Answers:

1. C
2. C
3. D
4. C
5. C
6. C
7. A
8. B
9. B
10. D
11. C
12. A
13. D
14. B
15. D
16. D
17. B
18. A
19. B
20. D
21. B
22. B
23. A
24. D
25. C
26. C
27. B
28. B
29. D
30. C
31. A
32. A
33. B
34. C
35. C
36. B
37. D
38. A
39. D
40. A
41. A
42. A
43. B
44. A
45. C
46. C
47. A
48. C
49. B
50. D
51. A
52. B
53. D
54. A
55. C
56. C
57. D
58. A
59. A
60. B