Principles of the ESSENTRICS® Program

Level 1 Aging Backwards® Certification
Written Evaluation Package
Short Answer & Mutliple Choice

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ESSENTRICS® ACADEMY

LEVEL 1 WRITTEN EVALUATION **REQUIREMENTS**

The contents of this Evaluation Package provide you with everything you need for the short answer and multiple choice portions of your Level 1 exam. Combined, they contribute to 30% of your overall Level 1 grade. The remaining portion is attributed to the practical teaching portion. A minimum total grade of 80% is required to obtain the Essentrics Level 1 Certificate of Completion and become a Certified Level 1 Essentrics® Instructor.

1. WRITTEN EVALUATION **10%**

Submission of the completed short-answer written evaluation detailing objectives, techniques, and muscle groups related to exercise sequences from PCW1.

2. L1 MULTIPLE CHOICE EVALUATION **10%**

Submission of the completed multiple-choice questionnaire based on the theory from the Level 1 Manual (80 questions).

3. AB MULTIPLE CHOICE EVALUATION **10%**

Submission of the completed multiple-choice questionnaire based on the content of Miranda Esmonde-White's book Aging Backwards (50 questions).

WRITTEN EVALUATION **GUIDELINE**

For each question, you will be asked to:

1. Illustrate the exercise and explain the movement
2. List the primary objective
3. List the techniques that are required to achieve your primary objective
4. List the secondary objectives
5. List the techniques that are required to achieve your secondary objectives
6. List the primary muscle groups targeted

Each question is marked out of a grade of 6.

NOTE: There are many potential correct answers to each question. As you know, each Essentrics exercise delivers many objectives through a variety of applied techniques that target many muscles. Once you choose your primary and secondary objectives, make sure that the techniques you choose relate directly to what *you* have written. Choose techniques that drive home the objectives you list in order to receive full marks and use this written portion as an opportunity to reflect and apply critical thinking to the program.

To "explain the movement," use imagery and verbal cues you would use to teach the exercise to your students in class. The purpose of this requirement is to help you break down the movement. We are not asking for every single step and instruction, just the main ones. See the example provided for an idea of what we are looking for.

When you choose your techniques, we ask that you outline the specific category from which they are from:

- Positional Techniques
- Joint Movement Techniques
- Neuromuscular Techniques

You will have marks deducted if this is omitted.

EXAMPLE: Lifting Buckets of Water (not featured in PCW1)

Illustrate and explain the movement:

- Start with your legs slightly wider than your hips, bend both knees and tuck your tailbone under into a Neutral C. Round your upper back, relax your shoulders and lower your upper body towards the floor, letting your arms hang heavy.
- Spinal roll up: Slowly straighten your spine, one vertebra at a time, imagine you are lifting heavy buckets of water *(this imagery will help students achieve the desired muscle contraction)*.
- As your hands arrive at shoulder height, do a full shoulder rotation to finish with your shoulders down, elbows bent by your side, palms up.
- Finish: Push something heavy towards the ceiling as you straighten your elbows, arriving in Neutral Elongation.

What is the primary objective of this exercise?

- Improving posture

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

- Neutral C & Neutral Elongation (Positional Techniques)
- Pulling Up (Joint Movement Technique)
- Resistance & Imagery (Neuromuscular Techniques)

What are your secondary objectives? (Minimum 2)

- Flexibility of the spine
- Flattening the stomach

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

- Movement of and within the Joint (Joint Movement)
- Resistance (Neuromuscular)
- Isotonic Contraction (Neuromuscular)
- Pulling Up (Joint Movement)

What primary muscle groups are being targeted? (Name 3)

- Trapezius
- Latissimus dorsi
- Erector spinae muscles

1. WRITTEN **EVALUATION**

1. Shoulder Blast

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

2. Pliés

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

3. Arm Pumps

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

4. Windmills

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

5. Side Leg Lifts

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

6. **Lever Stretch. Choose one of the following three options:**

Lever Stretch with Side Lunge ____ Baby Stretch ____ Figure 4 Stretch ____

Illustrate & explain the movement:

What is the primary objective?

What techniques are needed to achieve your primary objective? (Minimum 2) + technique category

What are the secondary objectives? (Minimum 2)

What techniques are needed to achieve your secondary objectives? (Minimum 2) + technique category

Which primary muscle groups are being targeted? (Name 3)

2. LEVEL 1 MULTIPLE CHOICE **EVALUATION**

Based on the Principles of Essentrics Level 1 Manual

Circle one letter that best answers each question

1. Essentrics _____.
   a. Increases the flexibility of your muscles through eccentric strength training
   b. Is a strengthening program
   c. Simultaneously stretches and strengthens your muscles
   d. All of the above

2. The philosophy behind Essentrics is to _____ the entire body.
   a. Stretch
   b. Rebalance
   c. Strengthen
   d. Release

3. _____ helps explain how a foot injury can cause hip problems, or an arm injury can cause shoulder problems.
   a. Body awareness
   b. Muscle chains
   c. Dynamic movement
   d. Levers

4. To rebalance the full-body you must _____.
   a. Work agonist & antagonist muscle groups
   b. Stretch & strengthen all 650 muscles
   c. Work the Short & Long Levers equally
   d. All of the above

5. Strength without_____inevitably leads to immobility, atrophy, and poor posture.
   a. Flexibility
   b. Power
   c. Endurance
   d. Massage

6. Essentrics uses _____.
    a. Static stretching
    b. Active stretching
    c. Passive stretching
    d. Ballistic stretching

7. _____ is essential to be able to fully stretch and strengthen your muscles.
    a. Passive stretching
    b. Relaxation
    c. Ballistic movement
    d. Weight training

8. This category of Essentrics techniques is designed to ensure a safe load path and clean alignment of your joints:
    a. Joint Movement Techniques
    b. Neuromuscular Techniques
    c. Positional Techniques
    d. All of the above

9. Poor alignment leads to muscular imbalance, atrophy of un-recruited muscles and inefficient results when training.
    a. True
    b. False

10. _____ relieves pressure on your joints, protects them from impact and accelerates the healing process by permitting synovial fluid to enter joint capsule.
    a. Pulling Up
    b. Deep Breathing
    c. Resistance
    d. Isolation

11. What do Neutral C, Neutral Elongation, Alignment and Turnout have in common?
    a. They are all Positional Techniques
    b. They all ensure correct load path
    c. They are all necessary to teach a safe class
    d. All of the above

12. _____ are techniques that apply the basic philosophy of an eccentric movement: lengthening and strengthening.
    a. Neutral C and Neutral Elongation
    b. Pulling Up and Pulling Out
    c. Short Lever / Long Lever
    d. Agonist / Antagonist

13. _____ releases tension, allows for a deeper stretch, and catches peripheral muscles in addition to the primary targeted ones.
    a. Isolation
    b. Pulling Out
    c. Movement Within a Stretch
    d. Overextension

14. The primary purpose of all Joint Movement Techniques is to:
    a. Trigger a response in the nerves and muscles
    b. Increase the full mobility of every joint and to maintain their full function
    c. Position the body to ensure correct load path
    d. Burn more calories

15. Pulling Up helps us achieve the following benefit(s):
    a. Good posture
    b. Improved digestive health
    c. Increased energy
    d. All the above

16. Correct alignment starts with proper placement of the _____.
    a. Feet
    b. Hips
    c. Knees
    d. Head

17. Correct alignment _____.
    a. Protects your joints
    b. Recruits 100% of the targeted muscles
    c. Increases energy
    d. All of the above

18. Turnout, or Turning Out, is a technique that _____.
    a. Increases range of motion
    b. Improves balance
    c. Reverses atrophy and loosens scar tissue
    d. All of the above

19. Everyone has the same Turnout angle.
    a. True
    b. False

20. Which technique involves moving the limb in a rotational fashion while the joint remains stabilized and isolated?
    a. Rotation within a Joint
    b. Movement of the Joint
    c. Deep Breathing
    d. PNF

21. _____ is one of the most valuable and effective tools to help your students properly execute various exercises without spending too much time explaining details.
    a. Imagery
    b. PNF
    c. Alignment
    d. Myotatic reflex

22. The use of _____ as a technique has several beneficial objectives which include relaxing your muscles, assisting in blood flow and transporting oxygen and nutrients.
    a. Pulling Out
    b. Resistance
    c. Deep Breathing
    d. Lever Stretches

23. Ballistic movement _____.
    a. Is a very safe flexibility technique
    b. Does not increase flexibility because the speed contracts and shortens the muscle
    c. Helps to relax the muscles
    d. Is considered a Joint Movement Technique

24. What is PNF?
    a. Propriocentric Neurological Facilitation
    b. Propriometric Neuroactive Facilitation
    c. Proprioception Neurological Facility
    d. Proprioceptive Neuromuscular Facilitation

25. What is a simplified explanation of PNF?
    a. Contract – Release – Stretch
    b. Contract – Release – Relax – Stretch
    c. Contract – Rotate – Stretch
    d. Stretch – Relax – Stretch

26. PNF requires special equipment.
    a. True
    b. False

27. The relationship between muscles that explains for the fact that when a muscle contracts and shortens its opposing muscle relaxes and lengthens is _____.
    a. Myosin / Actin
    b. Concentric / Eccentric
    c. Agonist / Antagonist
    d. None of the above

28. _____ is a Neuromuscular Technique that triggers our muscles to relax in order to release tension and safely increase flexibility.
    a. PNF
    b. Turnout
    c. Two-Directional Stretch
    d. Long Lever

29. Which one of the following is not a Neuromuscular Technique?
    a. Relaxation
    b. PNF
    c. End of the Stretch
    d. Rotation of a Joint

30. A(n) _____ contraction occurs when a muscle shortens, bringing its attachment points closer together.

    a. Eccentric
    b. Concentric
    c. Isometric
    d. Involuntary

31. A movement in which resistance or weight remains the same as your muscles change length is known as what kind of muscle contraction?

    a. Isometric
    b. Resistance
    c. Isotonic
    d. PNF

32. In Essentrics we only use eccentric strengthening.

    a. True
    b. False

33. An _____ contraction is one in which no change in muscle length occurs. In Essentrics, an example can be found in _____.

    a. Isometric, the kicking leg during kicks
    b. Isometric, the standing leg during kicks
    c. Isotonic, the standing leg during kicks
    d. Isotonic, the kicking leg during kicks

34. What defines an eccentric contraction?

    a. Muscle fibres lengthening as they contract
    b. Muscle fibres shortening as they contract
    c. Stretching a muscle
    d. No change in the length of the muscle fibre

35. Reflex intelligence _____.

    a. Is voluntary
    b. Is an objective
    c. Is your body's natural safety mechanism to avoid muscle and tendon injury
    d. Moves the bones

36. The Golgi tendon reflex _____.
    a. Relaxes muscles
    b. Is triggered by a muscle contraction
    c. Is involuntary
    d. All of the above

37. What does the myotatic reflex do?
    a. Inhibits movements when you are strengthening
    b. Inhibits the muscle from lengthening when you are stretching
    c. Inhibits movements when you try to contract
    d. Inhibits movements when your muscles are cold

38. Your myotatic reflex, or stretch reflex, _____.
    a. Triggers a muscle contraction
    b. Is a response to stretching
    c. Protects muscles from being torn
    d. All of the above

39. Doing the splits triggers the myotatic reflex.
    a. True
    b. False

40. Catching a ball triggers the Golgi tendon reflex.
    a. True
    b. False

41. Lack of movement leads to _____.
    a. Hardening of the body's lubricating oil
    b. Cell atrophy
    c. Stiffness in surrounding areas
    d. All of the above

42. _____ is a form of connective tissue that can be considered like a protective web, enveloping all muscles, nerves, bones and blood vessels.
    a. Fascia
    b. Blood
    c. Synovial fluid
    d. Tendons

43. Mitochondria are considered the_____ of a cell.
    a. Vacuum
    b. Calorie burning units
    c. Fat storage units
    d. Waste units

44. Our mitochondria are effected when we stop using our muscles.
    a. True
    b. False

45. The cardiovascular system consists of _____.
    a. The cardiac muscle (heart) and veins
    b. The aortas and ventricles of the heart
    c. The cardiac muscle (heart), blood vessels and lungs
    d. The cardiac muscle (heart), blood, and the blood vessels

46. Essentrics helps increase our circulation and eases the workload of the heart by involving the full musculature of the body.
    a. True
    b. False

47. A muscle is made up of tens of thousands of muscle cells called _____.
    a. Myofilaments
    b. Sarcomeres
    c. Myosin
    d. Actin

48. _____ are controlled by the conscious brain.
    a. Skeletal muscles
    b. Involuntary muscles
    c. Smooth muscles
    d. Cardiac muscles

49. A joint is only as flexible as its _____.
    a. Strongest muscle
    b. Smallest muscle
    c. Tightest muscle
    d. Loosest muscle

50. A typical spine follows a natural _____ which _____ every person.
    a. C curve; is the same for
    b. C curve; varies for
    c. Double S curve; varies for
    d. Double S curve, is the same for

51. _____ provide(s) a frictionless surface between bones, cushioning and preventing wear on articular surfaces.
    a. Cartilage
    b. Ligaments
    c. Synovial fluid
    d. Blood

52. _____ can inhibit the movements of our limbs and make us feel glued and stiff.
    a. Scar tissue
    b. Concentric training
    c. Atrophy
    d. All of the above

53. Ligaments and tendons are forms of connective tissue.
    a. True
    b. False

54. The rate of healing is _____ in tendons and ligaments compared to muscles because of their _____.
    a. Slower, range of movement
    b. Faster, high blood flow
    c. Slower, low blood flow
    d. Faster, range of movement

55. A strain is overstretching or tearing of a _____.
    a. Muscle
    b. Tendon
    c. Muscle or tendon
    d. Ligament

56. A sprain is _____.
    a. Overstretching or tearing of a ligament
    b. Overstretching or tearing of a muscle
    c. Overstretching or tearing of a tendon
    d. All of the above

57. A primary function of our ligaments is to _____.
    a. Move our joints
    b. Lubricate our joints
    c. Stabilize our joints
    d. Stretch our joints

58. When a ligament or tendon is stretched beyond its 6% capacity, it will never fully rebound or return to its original constitution.
    a. True
    b. False

59. There are roughly _____ skeletal muscles in our body.
    a. 560
    b. 650
    c. 360
    d. 206

60. All skeletal muscles cross at least one joint. If they did not cross a joint they would not be able to move our body parts.
    a. True
    b. False

61. You have _____ joints in your body.
    a. 320
    b. 360
    c. 650
    d. 206

62. Every movement, big or small, involves an agonist and antagonist muscle group.
    a. True
    b. False

63. What is the Sliding Filament Theory?
    a. An explanation of how protein filaments slide past each other during muscle contraction
    b. An explanation of how tendon filaments slide along the bones
    c. An explanation of how blood slides into a muscle filament
    d. A theory that explains blood circulation

64. The Sliding Filament Theory helps explain and account for _____.
    a. Cellular movement
    b. Large full-body movement
    c. Concentric and Eccentric Strengthening
    d. All of the above

65. The muscles of your Top Three include:
    a. The front of your torso
    b. The back of your torso
    c. The sides of your torso, including shoulders, arms and fingers
    d. All of the above

66. The muscles of your Big Four include:
    a. The front of your legs
    b. The back of your legs
    c. The inside and outside of your legs
    d. All of the above

67. Which of the following is not a section of the spine?
    a. Cervical
    b. Thoracic
    c. Femur
    d. Lumbar

68. Which one of the following applies to the skeletal system?
    a. Protects organs and soft tissues
    b. Provides support to the body
    c. Produces a lever system for body movements
    d. All of the above

69. The major building blocks of muscles are two thread-like protein strands called:
    a. Lactic & acid
    b. Myosin & actin
    c. Mitochondria & insulin
    d. The Krebs cycle

70. What does a tendon connect?
    a. A bone to a bone
    b. A muscle to a muscle
    c. A muscle to a bone
    d. A ligament to a muscle

71. What does a ligament connect?
    a. A muscle to a bone
    b. A bone to a bone
    c. A tendon to a bone
    d. A muscle to a tendon

72. How much flexibility does a tendon have?
    a. 4% to 6%
    b. 6% to 8%
    c. 8% to 10%
    d. 0%

73. What does Best Resting refer to?
    a. The muscles' starting point when you start training
    b. A good night's sleep for maximum performance
    c. The muscle's best state, after training
    d. The body's state after exercising for 30 minutes

74. A muscle has the ability to shorten _____ from its Best Resting. This is a concentric contraction.
    a. 4-6%
    b. 25%
    c. 75%
    d. Individually varies too much to say

75. A muscle has the ability to increase its length _____ from its Best Resting position.
    a. 4-6%
    b. 25%
    c. 75%
    d. Individually varies too much to say

76. Everyone has the same flexibility potential.
    a. True
    b. False

77. A person's potential flexibility depends on their _____.
    a. Genetic musculoskeletal makeup
    b. Age and degree of atrophy
    c. Type of frequent activities
    d. All of the above

78. In the musculoskeletal system, our _____ is a primary indicator of our potential flexibility. This ration is established by our _____.
    a. Ratio of tendon to muscle; genetic makeup
    b. Ratio of ligament to muscle; genetic makeup
    c. Ratio of tendon to muscle; lifestyle
    d. Ratio of ligament to muscle; lifestyle

79. When an individual has long muscles and proportionately shorter tendons, they will naturally be more _____.
    a. Flexible
    b. Strong
    c. Athletic
    d. Energetic

80. When an individual has longer tendons and proportionately shorter muscles, the potential for increasing their flexibility will be _____.
    a. Increased
    b. Limited
    c. Unaffected
    d. Greater

3. AGING BACKWARDS® MULTIPLE CHOICE **EVALUATION**

Based on the content from Miranda Esmonde-White's book Aging Backwards®

Circle one letter that best answers each question

1. Essentrics is an optimal age-reversing program because it is a _____.

a. Zero impact workout
b. Gentle full-body workout that helps reverse atrophy
c. Workout that improves mobility
d. All of the above

2. Range of motion is controlled by the muscle function of a joint.

a. True
b. False

3. A lack of movement puts us on a trajectory that leads to _____.

a. Hardening of the body's fascia
b. Cell atrophy
c. Joint stiffness
d. All of the above

4. Through _____ we can rebalance our body by employing the full range of motion of all our joints which helps release tension through our connective tissue.

a. Turnout
b. Dynamic stretching
c. Ballistic movement
d. Running

5. Unlocking the ligaments of the _____ is so important as it begins a positive chain reaction that leads to increased mobility throughout the entire body.

a. Shoulders
b. Hips
c. Foot and ankle
d. Knees

6. _____ is the best way to keep your fascia healthy and functioning at an optimal level.

a. Massage
b. Full body movement
c. Rest
d. All are important factors and dependent on individual variables

7. Healthy fascia enables our _____ to move effortlessly.

a. Muscles
b. Tendons and ligaments
c. Nerves
d. All of the above

8. Scar tissue disrupts the flow of a muscle chain and can make us feel glued and stiff.

a. True
b. False

9. Anytime there is interference with the ability to move, there is a risk of muscle atrophy, which speeds up the aging process.

a. True
b. False

10. The force of gravity is constantly pulling us downward, which contributes towards shrinking and sagging muscles of the spine and trunk. We can simply and effectively reverse that effect and regain muscle length by _____.

a. Pulling Up
b. Lifting our arms above our head
c. Essentrics Trademark exercises
d. All of the above

11. If you are _____, your fascia's will naturally harden – effectively securing ligaments, nerves, or tendons inside their sheath, leaving you feeling tight, stiff, and old.

a. Over 50
b. Over 60
c. Sedentary
d. Inflexible

12. Compression from _____ can impact your joints' natural cushions, which increases the chances of bone-on-bone grinding and joint damage to varying degrees.
a. Excess body weight
b. Lifting weights
c. Sitting too much
d. All of the above

13. _____ can contribute(s) towards ligament immobility in our feet.
a. A sedentary lifestyle
b. High-end running shoes
c. Orthopedic footwear
d. All of the above

14. The simple task of learning to be light on your feet through the technique of Pulling Up will help prevent joint damage.
a. True
b. False

15. Pain is a natural part of the aging process.
a. True
b. False

16. When ankle ligaments are tight they restrict movement in the calf muscles which leads to a stiff gait, likely causing aches and pains in the _____.
a. Knees
b. Hips
c. Lower back
d. All of the above

17. _____ and _____ are two of the most efficient techniques to help readjust congealed fascia and help relieve pain.
a. Resistance; Isolation
b. Movement Within a Stretch; Rotation of a Joint
c. Pulling-up; Pulling-out
d. PNF; End of the Stretch

18. Dynamic eccentric stretching protects joints by _____.
a. Pulling the joints apart while strengthening them, thus helping to prevent joint damage
b. Pulling the joints apart, creating a space for lubricating and healing synovial fluid to enter
c. Preventing the grinding of your bones
d. All of the above

19. One of the reasons congealed fascia can be very painful is because it's the entry point of many nerves.
a. True
b. False

20. Connective tissue surrounds _____.
a. Individual muscle cells
b. Whole muscle groups
c. Nerves
d. All of the above

21. A healthy level of endurance is _____.
a. Having the energy to complete life's daily tasks & not tiring after your favourite activities
b. Only important if you're very active or a professional athlete
c. The ability to run up the stairs
d. Limited to cardiovascular activities such as running, cycling, swimming, hiking, etc.

22. Power is measured by the ability to _____.
a. Lift a heavy object
b. Lift your own body
c. Execute movements requiring bursts of strength (ex: skiing, tennis, golf, carpentry, etc.)
d. All of the above

23. By keeping your muscles strong, active and healthy you are assisting _____.
a. Other systems in your body from breaking down prematurely
b. Your overall health which can lessen how likely you are to get sick
c. Recovery time from injuries
d. All of the above

24. Healthy muscles help maintain a healthy cardiovascular system and reduce the risk of heart disease.
a. True
b. False

25. It is within our power to prevent, delay, minimize, and reverse the symptoms of poor balance.
a. True
b. False

26. A poor circulatory system means that _____.
a. Our cells are not receiving life-giving nutrients efficiently
b. Toxins are not being flushed out of our system
c. We will most likely feel and look exhausted
d. All of the above

27. The digestive system is housed in the torso, therefore _____ are especially helpful in keeping a healthy digestive system.
a. Ceiling Reaches
b. Windmills
c. Pulling Weeds
d. All Trademark sequences

28. Poor posture collapses the spine and shortens the space required to comfortably house the digestive system and can contribute towards digestive issues such as heartburn, gas, bloating and constipation.
a. True
b. False

29. To keep good balance as you age you must _____.
a. Safely challenge your balance reflexes to prevent atrophy of nerve cells
b. Do isometric training
c. Wear supportive footwear
d. Balance will dramatically decline with age no matter what methods you take

30. _____ has many anti-aging benefits, from increasing your energy to improving the quality of your skin and maintaining healthy muscles.
a. Isometric training
b. Weight training
c. Good circulation
d. Running

31. Strength conditioning focuses on challenging the muscles, while rehabilitation workouts focus on _____.

a. Rest
b. Passive treatments
c. Blood circulation and relaxation
d. Deep breathing

32. Essentrics helps increase our circulation and eases the workload of the heart by involving the full musculature of the body.

a. True
b. False

33. When you let your muscular system become weak, all other systems that keep you alive are directly affected.

a. True
b. False

34. When you are looking to encourage blood flow and circulation during an exercise, focus on _____.

a. Concentric training
b. Relaxation and Deep Breathing
c. Resistance
d. End of the Stretch

35. When someone becomes accustomed to poor posture, correct posture will feel uncomfortable, effortful, and wrong at first.

a. True
b. False

36. When you overprotect an injured area, you will _____.

a. Heal faster
b. Atrophy
c. Develop arthritis
d. Keep injuring yourself

37. Essentrics is a bone strengthening program.

a. True
b. False

38. _____ is a degenerative bone disease involving a wearing down of joint cartilage which causes bones to rub together, leading to joint damage.
a. Osteoporosis
b. Osteoarthritis
c. Scoliosis
d. Neuropathy

39. _____ is a condition in which bones weaken and soften due to progressive loss of calcium.
a. Osteoporosis
b. Arthritis
c. Bursitis
d. Osteoarthritis

40. To deliver calcium to the bones you must _____.
a. Lift weights
b. Deep breathe
c. Exercise
d. Drink milk

41. Lifting weights is the only way to keep your bones strong.
a. True
b. False

42. _____ can lead to joint damage and possible need for joint replacement.
a. Repetitive strength training
b. High impact activities
c. Underused muscles
d. All of the above

43. Declining muscle mass is a part of aging that we have absolutely no control over.
a. True
b. False

44. To reverse atrophy and regain mobility you must _____.
a. Work with a trained professional
b. Work vigorously
c. Work gently
d. You cannot reverse atrophy

45. Poor posture can make us feel chronically tired and sluggish because it affects the ability of our lungs to inhale adequate quantities of oxygen.

a. True
b. False

46. A loss of mitochondrial quality and activity makes it more difficult to burn the calories we consume.

a. True
b. False

47. Ligaments attach bones together. When they shrink, they _____.

a. Pull the bones together, squeezing the joints
b. Can become a pre-cursor to arthritis
c. Decrease joint mobility and contribute to stiffness and pain
d. All of the above

48. _____ is a reduction in muscles size (muscle wasting) due to inactivity or immobilization.

a. Arthritis
b. Atrophy
c. Congealing
d. None of the above

49. _____ reduces friction between bones, cushioning and preventing wear on articular surfaces.

a. Ligaments
b. Synovial fluid
c. Cartilage
d. Blood

50. A person's potential flexibility depends on their _____.

a. Genetic musculoskeletal makeup
b. Age and degree of atrophy
c. Type of frequent activities
d. All of the above