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**Exam Code: 010-111**

**Exam Name: ACSM certified Personal Trainer**



**Exam A**

**QUESTION 1**

What is a result of resistance training in adolescents?

- A. It promotes muscular strength.
- B. It increases muscular bulk.
- C. It increases the risk of osteoporosis.
- D. It causes permanent musculoskeletal damage.

**Correct Answer: A**

**Section:**

**QUESTION 2**

A 35 year-old male client has a goal of completing a sprint distance triathlon. The certified Personal Trainer prescribes an exercise regimen of swimming 2 days per week, running 3 days per week, and bicycling 2 days per week. What training principle is being used?

- A. Reversibility
- B. Overload
- C. Progression
- D. Specificity

**Correct Answer: D**

**Section:**

**QUESTION 3**

Which of the following is a result of chronic aerobic training?

- A. Increased lipid production.
- B. Decreased plasma triglyceride levels.
- C. Decreased high-density lipoprotein (HDL) levels.
- D. Increased low-density lipoprotein (LDL) levels.

**Correct Answer: B**

**Section:**

**QUESTION 4**

Mitral valve prolapse is a condition which primarily affects the .

- A. Sino-atrial node.
- B. Bicuspid valve.
- C. Tricuspid valve.
- D. Descending aorta.



**Correct Answer: B**

**Section:**

**QUESTION 5**

What action is involved in the concentric phase of the biceps curl?

- A. Flexion at the elbow.
- B. Extension at the elbow.
- C. Pronation of the forearm.
- D. Supination of the forearm.

**Correct Answer: A**

**Section:**

**QUESTION 6**

Cardiac output is a product of heart rate multiplied by \_\_\_\_\_.

- A. peripheral resistance.
- B. blood pressure.
- C. blood volume.
- D. stroke volume.

**Correct Answer: D**

**Section:**

**QUESTION 7**

Which of the following best describes the symptoms that occur at 24-48 hours after a single bout of intensive exercise?

- A. Delayed onset muscle strain.
- B. Acute onset muscle strain.
- C. Delayed onset muscle soreness.
- D. Acute onset muscle soreness.

**Correct Answer: C**

**Section:**

**QUESTION 8**

Which principle of training best describes a previously active client, who has been ill and bed-ridden for a prolonged period of time?

- A. Overload
- B. Specificity
- C. Reversibility
- D. Progression

**Correct Answer: C**

**Section:**



**QUESTION 9**

If you are palpating the thumb side of the forearm in the wrist area, what pulse are you checking?

- A. Humeral
- B. Ulnar
- C. Brachial
- D. Radial

**Correct Answer: D**

**Section:**

**QUESTION 10**

What is the correct order of the regions of the spinal column, from superior to inferior?

- A. Cervical, lumbar, thoracic, sacral and coccyx.
- B. Coccyx, sacral, lumbar, thoracic, and cervical.
- C. Cervical, thoracic, lumbar, coccyx, and sacral.
- D. Cervical, thoracic, lumbar, sacral, and coccyx.

**Correct Answer: D**

**Section:**

**QUESTION 11**

Which muscle is an antagonist of the hamstrings?

- A. Gastrocnemius
- B. Iliopsoas
- C. Gracilis
- D. Sartorius

**Correct Answer: B**

**Section:**

**QUESTION 12**

From a seated position, with dumbbells to the sides, raising the dumbbells laterally to shoulder level with elbows slightly flexed, exercises primarily the \_\_\_\_\_:

- A. bicep brachii and latissimus dorsi
- B. posterior deltoid
- C. anterior deltoid and triceps brachii
- D. middle deltoid.

**Correct Answer: D**

**Section:**

**QUESTION 13**

What is the major muscle used to flex the hip joint?



- A. Vastus lateralis
- B. Iliopsoas
- C. Biceps femoris
- D. Gluteus maximus

**Correct Answer: B**

**Section:**

**QUESTION 14**

A subject with elbows held at 90 degrees of flexion is handed a 150 lb (68.1kg) barbell. Even though he exerts maximal tension, the barbell causes the joint angle to increase to 170 degrees. Which one of the following describes the muscle action during the extension?

- A. Isotonic concentric
- B. Isotonic eccentric
- C. Isokinetic concentric
- D. Isokinetic eccentric

**Correct Answer: B**

**Section:**

**QUESTION 15**

Type II muscle fibers:

- A. Have a high capacity to generate energy through the electron transport system.
- B. Have a high capacity to generate energy from fat.
- C. Are recruited at a higher percentage of maximum force than Type I fibers.
- D. Have high endurance capabilities.

**Correct Answer: C**

**Section:**

**QUESTION 16**

Which of the following is a normal blood pressure (BP) response to aerobic exercise?

- A. Both systolic and diastolic BP increase proportionately to increases in workload.
- B. Systolic BP increases and diastolic BP decreases.
- C. Systolic BP increases proportionately to increases in workload and diastolic BP remains unchanged or decreases slightly.
- D. Systolic and diastolic BP both decrease at the onset of exercise, then increase in proportion to the increase in intensity.

**Correct Answer: C**

**Section:**

**QUESTION 17**

Which rotator cuff muscle abducts the arm?

- A. Infraspinatus
- B. Supraspinatus



- C. Subscapularis
- D. Medial deltoid

**Correct Answer: B**

**Section:**

**QUESTION 18**

Which energy system has the highest capacity for ATP production?

- A. ATP-CP
- B. Rapid glycolysis
- C. Slow glycolysis
- D. Oxidative phosphorylation

**Correct Answer: D**

**Section:**

**QUESTION 19**

What plane divides the body into upper and lower sections?

- A. Sagittal
- B. Frontal
- C. Transverse
- D. Median

**Correct Answer: C**

**Section:**

**QUESTION 20**

When performing neck flexion in the sagittal plane, which of the following exercises best mimics that movement?

- A. Cartwheel
- B. Somersault
- C. Bicep curl
- D. Leg curl

**Correct Answer: B**

**Section:**

**QUESTION 21**

Under which of the following circumstances would you expect to see the highest rise in blood lactate?

- A. During maximal exercise lasting between 60 and 180 seconds in the untrained client
- B. Prior to treadmill walking in the cardiac patient
- C. During maximal exercise lasting between 60 and 180 seconds in the athlete
- D. After moderate intensity cycling exercise in the client with Type 2 diabetes



**Correct Answer: C**

**Section:**

**QUESTION 22**

Typical movements in the weight room such as a biceps curl using free weights and leg press actions using a machine are best described as \_\_\_\_\_ muscle actions.

- A. plyometric
- B. isokinetic
- C. ballistic
- D. isotonic

**Correct Answer: D**

**Section:**

**QUESTION 23**

The latissimus dorsi acts as the prime mover during the concentric phase of which of the following exercises?

- A. lat pulldown
- B. flat bench press
- C. lateral raise
- D. incline bench press

**Correct Answer: A**

**Section:**

**QUESTION 24**

Which of the following bones facilitate movement of the chest during both inspiration and expiration?

- A. clavicle
- B. scapula
- C. carpal
- D. scalene

**Correct Answer: A**

**Section:**

**QUESTION 25**

Which of the following is characterized as a plane (uniaxial) joint?

- A. Coxal (hip)
- B. Atlantooccipital
- C. Radiocarpal (wrist)
- D. Sacroiliac

**Correct Answer: D**

**Section:**



**QUESTION 26**

Which of the following indicates the reason why a female who is pregnant should avoid exercise in the supine position after the first trimester?

- A. obstruction of arterial blood flow
- B. risk of orthostatic hypotension due to obstructed venous return
- C. obstruction of the diaphragm
- D. risk of decreased oxygen consumption due to pressure on the uterus

**Correct Answer: B**

**Section:**

**QUESTION 27**

As a response to a progressive resistance training program, which of the following demonstrates the predominant contribution to an increase in cross-sectional area of a muscle?

- A. atrophy and possibly hypertrophy
- B. hyperplasia and possibly hypertrophy
- C. atrophy and possibly hyperplasia
- D. hypertrophy and possibly hyperplasia

**Correct Answer: D**

**Section:**

**QUESTION 28**

What is an appropriate precaution and/or modification for exercising in higher ambient temperatures?

- A. Take salt tablets.
- B. Drink eight ounces of water once per hour.
- C. Select proper loose fitting, lightweight clothing.
- D. Train in clothes designed to trap and hold body heat.

**Correct Answer: C**

**Section:**

**QUESTION 29**

What is the intensity recommendation for the initial conditioning stage of a cardiovascular program?

- A. 10% to 20% of heart rate reserve
- B. 20% to 30% of heart rate reserve
- C. 40% to 60% of heart rate reserve
- D. 60% to 85% of heart rate reserve

**Correct Answer: C**

**Section:**

**QUESTION 30**

Approximately how long is the initial conditioning phase of a cardiovascular training program?

- A. Four weeks
- B. Eight weeks
- C. Twelve weeks
- D. Sixteen weeks

**Correct Answer: A**  
**Section:**

**QUESTION 31**

What is the American College of Sports Medicine's recommendation regarding frequency to increase cardiorespiratory fitness?

- A. One to two days per week
- B. Two to three days per week
- C. Three to five days per week
- D. Four to six days per week

**Correct Answer: C**  
**Section:**

**QUESTION 32**

What is the variability for any given age, when estimating a client's age-predicted maximum heart rate?

- A. 2 to 4 beats per minute
- B. 10 to 12 beats per minute
- C. 18 to 20 beats per minute
- D. 22 to 24 beats per minute

**Correct Answer: B**  
**Section:**

**QUESTION 33**

What is the formula to determine 60% of heart rate reserve?

- A.  $220 - \text{age} \times 60\%$
- B.  $\text{Maximum heart rate} \times 60\%$
- C.  $\text{Maximum heart rate} - \text{resting heart rate} \times 60\%$
- D.  $\text{Maximum heart rate} - \text{resting heart rate} \times 60\% + \text{resting heart rate}$

**Correct Answer: D**  
**Section:**

**QUESTION 34**

A 50 year old client has a resting heart rate of 70 beats per minute. Calculate the exercise heart rate for this client using 50% of heart rate reserve.

- A. 85 beats per minute
- B. 100 beats per minute
- C. 110 beats per minute



D. 120 beats per minute

**Correct Answer: D**

**Section:**

**QUESTION 35**

When should a client exhale during performance of a bench press?

- A. Only after the movement ends.
- B. Immediately before the movement begins.
- C. During the eccentric phase of the movement.
- D. During the concentric phase of the movement.

**Correct Answer: D**

**Section:**

**QUESTION 36**

What health-related physical fitness component is primarily emphasized in a circuit training program that has 30 stations, 60 seconds per station, at 25% of one repetition maximum?

- A. Muscular Strength
- B. Muscular Flexibility
- C. Muscular Endurance
- D. Muscular Power

**Correct Answer: C**

**Section:**

**QUESTION 37**

What are the FITTE Factors?

- A. Frequency, injury, time, type, enjoyment
- B. Frequency, intensity, total, type, exercise
- C. Frequency, intensity, total, type, equipment
- D. Frequency, intensity, time, type, enjoyment

**Correct Answer: D**

**Section:**

**QUESTION 38**

Which of the following physiological changes does NOT occur when a client improves aerobic capacity?

- A. The muscles will be able to extract more oxygen from the blood.
- B. Total lung volume will increase in proportion to the total accumulated time of high-intensity exercise.
- C. The oxygen carrying capacity of the blood will increase.
- D. The amount of air the lungs can take in will increase because of increases in the rate and depth of breathing.

**Correct Answer: B**



**Section:**

**QUESTION 39**

As the intensity of dynamic exercise increases, which of the following sets of responses occurs?

- A. Heart rate, systolic blood pressure, and diastolic blood pressure increase.
- B. Heart rate and systolic blood pressure increase, diastolic pressure remains unchanged.
- C. Heart rate and systolic blood pressure increase, stroke volume and cardiac output remain the same.
- D. Stroke volume decreases, heart rate and cardiac output increase.

**Correct Answer: B**

**Section:**

**QUESTION 40**

When reading the label on a new 'energy' bar, you notice that the bar is 'sweetened with fructose'. Based on this label, which of the following conclusions can you make about this product?

- A. The bar is sweetened with a disaccharide.
- B. Fructose in this bar would give it a high glycemic index.
- C. The bar is sweetened with a monosaccharide.
- D. Fructose is a type of organic micronutrient.

**Correct Answer: C**

**Section:**

**QUESTION 41**

According to the current (2005) Dietary Guidelines for Americans:

- A. people over the age of 50 better absorb vitamin B12 in comparison to children and other adults
- B. non-heme (plant) sources of iron are richer than heme (animal) sources of iron for women of childbearing age
- C. women of child-bearing age who may become pregnant require a higher daily intake of folic acid than the pregnant female
- D. the elderly and individuals with dark skin are at greater risk of low vitamin D concentrations than other populations

**Correct Answer: D**

**Section:**

**QUESTION 42**

Which of the following statements about dehydroepiandrosterone (DHEA) is correct?

- A. The body does not produce DHEA.
- B. DHEA has been shown to improve body composition and physical performance in most elderly men and women.
- C. The U.S. Food and Drug Administration has classified DHEA as a controlled drug.
- D. DHEA has no potential influence on testosterone production by both men and women.

**Correct Answer: C**

**Section:**

**QUESTION 43**



What term best describes accurate record keeping, a safe exercise environment, and proper supervision?

- A. Risk management
- B. Help management
- C. Legal management
- D. Assistance management

**Correct Answer: A**

**Section:**

**QUESTION 44**

A certified Personal Trainer fails to properly spot a client performing heavy incline dumbbell presses and the client injures himself. This is an example of what type of negligence?

- A. Casual
- B. Serious
- C. Omission
- D. Commission

**Correct Answer: C**

**Section:**

**QUESTION 45**

What is the correct order of an effective program planning model?

- A. Needs assessment, program implementation, program planning, program evaluation
- B. Program assessment, needs planning, program implementation, program evaluation
- C. Program assessment, program planning, program implementation, program evaluation
- D. Needs assessment, program planning, program implementation, program evaluation

**Correct Answer: D**

**Section:**

**QUESTION 46**

Which of the following is NOT true regarding a properly administered informed consent form?

- A. It provides an explanation of all procedures to be performed.
- B. It releases the facility and personnel from liability.
- C. It provides an opportunity for inquiries.
- D. It encourages and implies confidentiality.

**Correct Answer: B**

**Section:**

**QUESTION 47**

Which legal term is defined as 'failure to conform one's conduct to a generally accepted standard or duty'?

- A. Battery



- B. Neglect
- C. Abandonment
- D. Negligence

**Correct Answer: D**

**Section:**

**QUESTION 48**

Clients seeking nutritional meal planning from an ACSM certified Personal Trainer should be:

- A. Informed about their nutritional supplement needs.
- B. counseled on sport beverage intake only.
- C. referred to a Registered Dietician.
- D. counseled on macronutrients but not micronutrients.

**Correct Answer: C**

**Section:**

**QUESTION 49**

A routine pattern of adhering to and documenting compliance with fitness industry guidelines is often an effective guard against \_\_\_\_\_.

- A. Breach of contract
- B. Malfeasance
- C. Negligence
- D. Malpractice

**Correct Answer: C**

**Section:**

**QUESTION 50**

What is the heart's predominant pacemaker?

- A. Sinoatrial node
- B. Left bundle branch
- C. Right bundle branch
- D. Atrioventricular node

**Correct Answer: A**

**Section:**

**QUESTION 51**

Your client is a 59 year old sedentary female with a body mass index of 33 kg/m<sup>2</sup>. She has no history of heart disease herself, but her mother had a myocardial infarction at the age of 66. She is an ex-smoker who quit 15 years ago, blood pressure is consistently 135/85 mm Hg, total cholesterol is 180 mg/dL (4.6 mmol/L) with an HDL level of 30 mg/dL (0.8 mmol/L), and blood glucose is 100 mg/dL (5.6 mmol/L). She has come to you for advice because she wishes to improve her overall health and fitness.

How many risk factor thresholds for coronary artery disease does this client possess?

- A. Two



- B. Three
- C. Four
- D. Five

**Correct Answer: B**

**Section:**

**QUESTION 52**

Your client is a 59 year old sedentary female with a body mass index of 33 kg/m<sup>2</sup>. She has no history of heart disease herself, but her mother had a myocardial infarction at the age of 66. She is an ex-smoker who quit 15 years ago, blood pressure is consistently 135/85 mm Hg, total cholesterol is 180 mg/dL (4.6 mmol/L) with an HDL level of 30 mg/dL (0.8 mmol/L), and blood glucose is 100 mg/dL (5.6 mmol/L). She has come to you for advice because she wishes to improve her overall health and fitness.

What are the risk factors according to the American College of Sports Medicine?

- A. Family history, cigarette smoking
- B. Obesity, sedentary lifestyle, hypercholesterolemia
- C. Hypercholesterolemia, impaired fasting glucose, obesity, hypertension
- D. Family history, obesity, sedentary lifestyle, hypertension, cigarette smoking

**Correct Answer: B**

**Section:**

**QUESTION 53**

Your client is a 59 year old sedentary female with a body mass index of 33 kg/m<sup>2</sup>. She has no history of heart disease herself, but her mother had a myocardial infarction at the age of 66. She is an ex-smoker who quit 15 years ago, blood pressure is consistently 135/85 mm Hg, total cholesterol is 180 mg/dL (4.6 mmol/L) with an HDL level of 30 mg/dL (0.8 mmol/L), and blood glucose is 100 mg/dL (5.6 mmol/L). She has come to you for advice because she wishes to improve her overall health and fitness.

What initial American College of Sports Medicine risk stratification does this client fall into?

- A. Low risk
- B. Moderate risk
- C. High risk
- D. Very high risk

**Correct Answer: B**

**Section:**

**QUESTION 54**

Your client reports ankle edema. What would a certified Personal Trainer look for?

- A. Pain
- B. Atrophy
- C. Swelling
- D. Red coloration

**Correct Answer: C**

**Section:**

**QUESTION 55**

What is the role of High Density Lipoprotein in the blood?

- A. Transports cholesterol
- B. Increases anaerobic enzymes
- C. Increases triglycerides
- D. Decreases total cholesterol

**Correct Answer: A**

**Section:**

**QUESTION 56**

What is the definition of arteriosclerosis?

- A. Death of cardiac tissue
- B. Accumulation of plaque
- C. Hardening of the arteries
- D. Widening of the arteries

**Correct Answer: C**

**Section:**

**QUESTION 57**

What are three non-modifiable conditions that place someone at increased risk for the development of coronary artery disease?

- A. Advanced age, gender, family history
- B. Family history, obesity, diabetes mellitus
- C. Gender, family history, dyslipidemia
- D. Post-menopausal status, excessive alcohol consumption, advanced age

**Correct Answer: A**

**Section:**

