



Preparation Manual

Physical Education EC–12 (158)

Overview and Exam Framework
Sample Selected-Response Questions
Sample Selected-Response Answers and Rationales

Preparation Manual

Section 3: Overview and Exam Framework Physical Education EC–12 (158)

Exam Overview

Exam Name	Physical Education EC–12
Exam Code	158
Time	5 hours
Number of Questions	100 selected-response questions
Format	Computer-administered test (CAT)

The TExES Physical Education EC–12 (158) exam is designed to assess whether an examinee has the requisite knowledge and skills that an entry-level educator in this field in Texas public schools must possess. The 100 multiple-choice questions are based on the Physical Education EC–12 exam framework, and range from grades EC through 12. The exam may contain questions that do not count toward the score.

The number of questions that are not scored may vary in the actual exam. Your final scaled score will be based only on scored questions.

The Standards

Standard I

The physical education teacher demonstrates competency in a variety of movement skills and helps students develop these skills.

Standard II

The physical education teacher understands principles and benefits of a healthy, physically active lifestyle and motivates students to participate in activities that promote this lifestyle.

Standard III

The physical education teacher uses knowledge of individual and group motivation and behavior to create and manage a safe, productive learning environment and promotes students' self-management, self-motivation and social skills through participation in physical activities.

Standard IV

The physical education teacher uses knowledge of how students learn and develop to provide opportunities that support students' physical, cognitive, social and emotional development.

Standard V

The physical education teacher provides equitable and appropriate instruction for all students in a diverse society.

Standard VI The physical education teacher uses effective, developmentally appropriate instructional strategies and communication techniques to prepare physically educated individuals.

Standard VII The physical education teacher understands and uses formal and informal assessment to promote students’ physical, cognitive, social and emotional development in physical education contexts.

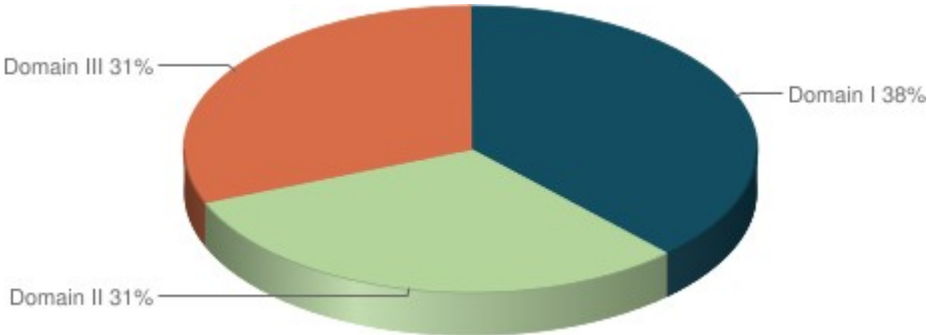
Standard VIII The physical education teacher is a reflective practitioner who evaluates the effects of his/her actions on others (e.g., students, parents/caregivers, other professionals in the learning environment) and seeks opportunities to grow professionally.

Standard IX The physical education teacher collaborates with colleagues, parents/caregivers and community agencies to support students’ growth and well-being.

Standard X The physical education teacher understands the legal issues and responsibilities of physical education teachers in relation to supervision, planning and instruction, matching participants, safety, first aid and risk management.

Domains and Competencies

Domain	Domain Title	Approx. Percentage of Exam	Standards Assessed
I	Movement Skills and Knowledge	38%	Physical Education EC–12 I, III
II	Health-Related Physical Fitness	31%	Physical Education EC–12 II
III	The Physical Education Program	31%	Physical Education EC–12 III, IV–X



The content covered by this exam is organized into broad areas of content called **domains**. Each domain covers one or more of the educator standards for this field. Within each domain, the content is further defined by a set of **competencies**. Each competency is composed of two major parts:

- The **competency statement**, which broadly defines what an entry-level educator in this field in Texas public schools should know and be able to do.
- The **descriptive statements**, which describe in greater detail the knowledge and skills eligible for testing.

Domain I—Movement Skills and Knowledge

Competency 001—The teacher understands and applies principles of motor development and motor learning.

The beginning teacher:

- Demonstrates knowledge of principles and stages of motor development.
- Knows motor learning principles, processes and concepts (e.g., positive transfer of learning, practice, feedback, observational learning) and uses this knowledge to promote students' acquisition and refinement of motor skills.
- Demonstrates knowledge of principles and components of perceptual-motor development (e.g., body awareness; auditory, visual and kinesthetic discrimination) and their relationship to motor performance.
- Analyzes the impact of various factors (e.g., social, emotional, environmental, health) on motor development and relates developmental changes to motor performance.
- Applies knowledge of techniques for evaluating motor skills, detecting errors in motor performance and providing positive corrective feedback.

Competency 002—The teacher understands principles and practices for developing, combining and integrating motor skills.

The beginning teacher:

- Recognizes characteristics and elements of locomotor, nonlocomotor, body control, manipulative and rhythmic skills.
- Demonstrates knowledge of characteristics and elements of manipulative skills (e.g., kick, strike, dribble) and mature motor patterns (e.g., throw, jump).
- Demonstrates knowledge of activities, strategies, safety practices and equipment for promoting students' development of locomotor, nonlocomotor, body control, manipulative and rhythmic skills (e.g., animal walks, partner activities, chase and flee games).
- Knows how to select and use developmentally appropriate techniques and activities to promote students' integration and refinement of locomotor, nonlocomotor, body control, manipulative and rhythmic skills.
- Recognizes and analyzes key elements in combinations of motor skills, demonstrations of agility and balance and dance steps and sequences (e.g., pivot and throw; movement sequences that combine traveling, rolling, balancing and weight transfer).
- Demonstrates knowledge of techniques and activities for refining and improving motor skills in games, sports and dance activities and for adjusting movements, techniques and tactics based on feedback and critical evaluation (e.g., kinesthetic feedback, verbal cues, videotaped analysis).

Competency 003—The teacher understands and applies knowledge of movement concepts and biomechanical principles.

The beginning teacher:

- Applies knowledge of movement concepts related to time, space, direction, level, force and flow and kinesthetic awareness concepts such as direction (e.g., backward, forward, changes in direction) and relationships to objects (e.g., over, under, behind, through).

- B. Relates biomechanical principles (e.g., center of gravity, inertia, stability, balance, force projection and absorption, buoyancy, acceleration) to various movement activities.
- C. Identifies techniques and activities for promoting students' understanding and application of movement concepts and biomechanical principles (e.g., moving in pathways or at different levels, adjusting throw using principles of rotation and force application).
- D. Knows how to use movement concepts and biomechanical principles to analyze movement skills, promote the acquisition and refinement of specific movements and sports skills, improve body mechanics for safe and efficient movement and appreciate the aesthetics of creative and skilled movement.
- E. Recognizes and analyzes similar movement concepts and elements in various movement patterns and sports skills.

Competency 004—The teacher understands and applies knowledge of individual, dual and team sports and activities.

The beginning teacher:

- A. Demonstrates knowledge of techniques, skills progressions, conditioning programs, rules, safety practices, offensive and defensive strategies and types and uses of equipment for individual, dual and team sports and activities (e.g., golf, archery, combatives, racquet activities, volleyball, basketball, softball, soccer, flag football, speed-away, disc sports, team handball, field hockey).
- B. Analyzes the importance of rules, discipline, etiquette, teamwork and appropriate participant and spectator behavior in individual, dual and team sports and activities.
- C. Knows key elements of successful performance in individual, dual and team sports and activities and strategies for improving students' performance, teamwork and skill combinations.
- D. Applies knowledge of principles and techniques for selecting, adapting and modifying sports activities to improve performance, promote the use of combinations of motor skills and provide practice in specific sports skills in game-like situations.

Competency 005—The teacher understands principles, techniques, skills and safety practices for dance, personal performance activities, cooperative and nontraditional games, recreational activities and outdoor pursuits.

The beginning teacher:

- A. Demonstrates knowledge of techniques, sequences, skills, steps, conditioning programs, safety practices and types and uses of equipment for creative movement, dance and personal performance activities (e.g., folk, square, ethnic, jazz, modern, social and aerobic dance; circus arts).
- B. Demonstrates knowledge of strategies, techniques, skills progressions, conditioning programs and types and uses of equipment for recreational activities and outdoor pursuits (e.g., walking, jogging, aquatics, bowling, cycling, inline skating, orienteering, hiking).
- C. Analyzes the importance of rules, discipline, cooperation, etiquette and safety practices in personal performance and other activities.
- D. Applies knowledge of issues and procedures (e.g., supervision; transitions; logistics related to the use of facilities, outdoor spaces, materials, staff and technology) involved in engaging students in personal performance activities, fitness and outdoor activities and nontraditional and cooperative games.
- E. Applies knowledge of principles and procedures for selecting, adapting and modifying activities and games based on student characteristics, instructional goals, skill levels, range of individual variation and exceptional needs.

Domain II—Health-Related Physical Fitness

Competency 006—The teacher understands major body systems, principles of physical fitness development and training and the benefits of a healthy, active lifestyle.

The beginning teacher:

- A. Demonstrates knowledge of the principles and benefits of a physically active lifestyle and ways to provide students with learning opportunities that promote participation in and enjoyment of physical activities.
- B. Demonstrates knowledge of the structures, functions, components and actions of major body systems and how various body systems produce movement, adapt to physical activity and contribute to fitness.
- C. Analyzes the physiological effects of moderate and vigorous physical activity during and after exercise and knows the risks associated with inactivity and the health benefits of regular participation in physical activity (e.g., decreased risk of illness, lowered resting heart rate).
- D. Applies knowledge of the basic components of health-related fitness (i.e., cardiovascular endurance, muscular strength and endurance, flexibility and body composition) and their significance in relation to physical activity, health and fitness.
- E. Demonstrates an understanding of basic principles of physical fitness training (e.g., frequency, intensity, type, duration, progressive overload, specificity), and knows principles and benefits of warm-up and cool-down exercise procedures.
- F. Analyzes individual variation in levels of health and fitness and knows principles and techniques for designing, implementing and maintaining individualized health and fitness plans (e.g., setting realistic short-term goals, evaluating and selecting activities to achieve goals).
- G. Knows how to promote students' ability to assess their own fitness levels, interests and skill levels in order to encourage participation in lifelong physical activity.

Competency 007—The teacher understands principles and activities for developing and maintaining cardiovascular endurance.

The beginning teacher:

- A. Demonstrates knowledge of principles, skills, exercises and physiological processes involved in aerobic conditioning.
- B. Evaluates and selects appropriate cardiovascular endurance activities for various developmental levels and purposes.
- C. Demonstrates knowledge of techniques for monitoring intensity, duration and endurance levels during aerobic activities (e.g., perceived exertion, heart rate monitor).
- D. Applies knowledge of techniques for student self-assessment of cardio-respiratory health and fitness (e.g., frequent monitoring of pulse rate to reach and maintain target heart rate for an appropriate amount of time).
- E. Analyzes potential health risks involved in cardiovascular endurance training (e.g., effects of environmental conditions on circulatory and respiratory systems) and knows risk reduction techniques.
- F. Applies knowledge of anatomy, kinesiology and physiological principles to design, adapt and modify activities that promote cardiovascular endurance.

Competency 008—The teacher understands principles and activities for developing and maintaining flexibility, posture and muscular strength and endurance.

The beginning teacher:

- A. Demonstrates knowledge of principles, skills, exercises and proper form for promoting strength and endurance of the muscles of the abdomen, lower back, upper body, trunk and legs.
- B. Demonstrates knowledge of principles, skills, exercises and proper form for promoting good posture and flexibility of major joints and areas of the body (e.g., hip, lower back, shoulder, neck, ankle, knee, trunk).
- C. Demonstrates knowledge of procedures for evaluating muscular strength and endurance and flexibility.
- D. Applies knowledge of anatomy, kinesiology and physiological principles to design, adapt, modify, evaluate and select appropriate activities for improving muscular strength and endurance (e.g., body support activities, free weights, jumping rope), flexibility and posture.
- E. Applies knowledge of principles, safety practices and equipment for progressive-resistance exercise (e.g., partner-resistance exercises, weight training, circuit training).
- F. Knows how to determine appropriate intensity, duration and frequency of training.
- G. Evaluates the safety and effectiveness of various exercises and types of training for promoting muscular strength and endurance, flexibility and good posture, including contraindicated exercises and body positions.

Competency 009—The teacher understands health and wellness concepts, including those related to nutrition, weight control and stress management, and analyses ways in which personal behaviors influence health and wellness.

The beginning teacher:

- A. Demonstrates knowledge of basic principles of nutrition and weight management and ways in which diet and exercise patterns affect physical performance and personal health and well-being.
- B. Knows principles and techniques for evaluating body composition and identifies appropriate activities and strategies for developing and maintaining a healthy body composition.
- C. Analyzes the effects of various factors (e.g., rest, nutrition, tobacco use, alcohol use, heredity) on physical performance and on health and demonstrates knowledge of techniques and principles for evaluating personal health-risk factors.
- D. Applies knowledge of positive health behaviors and strategies for promoting students' understanding of relationships between behavior choices and personal health.
- E. Knows the effects of stress on the body, techniques for managing stress and the physiological and psychological benefits of stress management.
- F. Demonstrates knowledge of common student misconceptions and faulty practices related to physical activity, health, exercise and diet and knows how to educate students about these misconceptions and faulty practices.
- G. Knows how to evaluate information related to health and fitness products, programs, facilities and services (e.g., fitness and sports equipment, weight control products and programs, fitness facilities).

Domain III—The Physical Education Program

Competency 010—The teacher knows how to use effective, developmentally appropriate instruction and assessment to prepare physically educated individuals.

The beginning teacher:

- A. Demonstrates knowledge of how students differ in their approaches to learning and physical performance and uses this knowledge to provide equitable and appropriate instruction that draws upon student strengths as a basis for growth.
- B. Knows how to design and implement instruction that is based on the Texas Essential Knowledge and Skills (TEKS) for physical education and that is safe, achieves goals and ensures student progress, motivation and safety.
- C. Knows how to use a variety of instructional models, strategies, materials and technologies to address specific purposes, objectives, learning needs and program goals.
- D. Applies knowledge of contemporary physical education models and best practice guidelines to plan and implement learning opportunities that are appropriate for students' developmental characteristics and needs.
- E. Knows how to create, modify and adapt physical education activities, games, rules, equipment and settings to ensure that all students have an equal opportunity to participate, learn, be successful and enjoy physical activity.
- F. Knows how to provide appropriate verbal and nonverbal teaching cues and positive feedback to students in physical education settings and how to communicate to students the importance of physical activity, health and fitness.
- G. Demonstrates an understanding of the characteristics, advantages, limitations and applications of assessment methods used in physical education (e.g., observational checklist, performance assessment, physical fitness test, journal, peer coaching) and knows how to select, construct, adapt and implement assessments for various purposes.
- H. Knows how to use available technology to analyze student progress, fitness and performance.
- I. Applies skills for interpreting student performance and fitness data and skills for using data to analyze progress, provide feedback about strengths and areas of need and recommend prescriptive exercise.

Competency 011—The teacher understands factors relevant to learning and performance in physical education and uses this knowledge to create learning environments and opportunities that promote students' development in various domains (e.g., cognitive, social, emotional).

The beginning teacher:

- A. Analyzes ways in which developmental and other factors (e.g., peers; media messages; cultural background; community settings; family circumstances; expectations related to gender, body image and skill level) influence student attitudes toward and engagement in physical activity.
- B. Demonstrates knowledge of strategies for motivating and encouraging students to participate in lifelong physical activity and for helping students become self-motivated.
- C. Identifies principles, benefits and limitations of various classroom management approaches in physical activity settings and knows techniques for organizing, allocating, scheduling and managing resources in the physical education environment to provide active and equitable learning experiences.
- D. Demonstrates knowledge of strategies for creating a positive climate for individual and group activities and for organizing and managing heterogeneous physical education classes in ways that promote positive interactions and active engagement in learning by all students.

- E. Analyzes how participation in physical education activities (e.g., games, dance, outdoor pursuits, sports) can promote students' development of positive personal traits and abilities (e.g., confidence, fairness, respect for diversity, conflict management).
- F. Analyzes how participation in physical education activities (e.g., games, dance, outdoor pursuits, sports) can promote students' development of positive social behaviors and traits (e.g., turn taking, treating opponents with respect, teamwork, leadership, loyalty).
- G. Applies knowledge of methods for promoting students' development of self-management skills in relation to physical activity and health-related lifestyle decisions (e.g., self-assessment; self-monitoring; responsibility; self-control; perseverance; the ability to manage success, failure and challenge).
- H. Demonstrates knowledge of principles and techniques for promoting students' goal-setting, analysis, problem-solving and decision-making skills in physical education contexts.

Competency 012—The teacher understands the structure, organization, goals and purposes of physical education programs.

The beginning teacher:

- A. Demonstrates knowledge of the structure, organization, goals and purposes of physical education programs.
- B. Analyzes philosophies, trends and issues in physical education and their effects on the goals, scope and components of physical education programs.
- C. Demonstrates knowledge of characteristics of an effective physical education program and important state and national initiatives that influence physical education content and practices.
- D. Applies knowledge of principles and techniques for evaluating the effectiveness of the physical education program and for adapting and modifying practices and programs based on reflection, assessment data, observation of students and program evaluation results.
- E. Demonstrates knowledge of strategies for advocating for physical education and for identifying and publicizing opportunities and resources for physical activity in the school and community (e.g., after-school programs, recreation departments, parks, pools, health clubs).
- F. Understands relationships between physical education and other subject areas and knows strategies for integrating physical education concepts across the curriculum.

Competency 013—The teacher understands legal issues and responsibilities of physical education teachers in relation to supervision, planning and instruction, safety, first aid and risk management.

The beginning teacher:

- A. Applies knowledge of legal and ethical issues and responsibilities relevant to physical education (e.g., confidentiality, supervision, standard of care, professional liability, negligence).
- B. Demonstrates knowledge of state and federal laws and guidelines regarding student rights and teacher responsibilities in physical education contexts (e.g., in relation to gender equity, inclusion and privacy).
- C. Demonstrates an understanding of the development and use of safety rules, risk-management plans, emergency plans and injury reports.
- D. Demonstrates knowledge of inherent risks, physical and environmental dangers (e.g., heat, wind), potential safety hazards and potential liabilities associated with participation in physical activities and techniques for informing students, families and staff of potential risks.

- E. Demonstrates an understanding of methods for minimizing risk and liability (e.g., routine inspections of facilities and equipment) and for ensuring the safety of participants in games, sports and other physical activities (e.g., matching participants according to characteristics such as age, maturity, physical size, skill and experience).
- F. Demonstrates knowledge of injury prevention techniques and of first aid, cardiopulmonary resuscitation (CPR) and emergency procedures.

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Section 4: Sample Selected-Response Questions Physical Education EC–12 (158)

This section presents some sample exam questions for you to review as part of your preparation for the exam. To demonstrate how each competency may be assessed, sample questions are accompanied by the competency that they measure. While studying, you may wish to read the competency before and after you consider each sample question. Please note that the competency statements do not appear on the actual exam.

For each sample exam question, there is a correct answer and a rationale for each answer option. The sample questions are included to illustrate the formats and types of questions you will see on the exam; however, your performance on the sample questions should not be viewed as a predictor of your performance on the actual exam.

Domain I—Movement Skills and Knowledge

Competency 001—The teacher understands and applies principles of motor development and motor learning.

1. Milestones of refined finger control can be expected at which of the following ages?

- A. 4 years old
- B. 8 years old
- C. 12 years old
- D. 16 years old

Answer _____

2. The relationship between personal-social skills and physical education is most accurately described by which of the following statements?

- A. Personal-social skills should be addressed in the physical education class through direct instruction.
- B. The physical education class reinforces the personal-social skills learned at home.
- C. In the physical education class, personal-social skills are typically addressed after fitness and motor skills are developed
- D. Personal-social skills typically develop concurrently with fitness and motor skills, given a physical education class with the proper environment.

Answer _____

3. Which of the following terms best explains why a young student has greater control of his or her upper torso than of his or her legs and feet?

- A. Component stages
- B. Proximodistal development
- C. Developmental biodynamics
- D. Cephalocaudal development

Answer _____

4. Delayed-onset muscle soreness (DOMS) is typically associated with which of the following types of muscle contractions?

- A. Isometric
- B. Concentric
- C. Eccentric
- D. Co-contraction

Answer _____

5. To best provide students with positive corrective feedback, a physical education teacher should do which of the following?

- A. Take visual observation notes on each student's performance
- B. Provide students with verbal cues as they practice skills
- C. Offer students written critiques after they demonstrate their ability
- D. Record students executing the skill using slow-motion video

Answer _____

Competency 002—The teacher understands principles and practices for developing, combining and integrating motor skills.

6. Which of the following forms of movement most clearly demonstrates basic skill in nonlocomotor body management?

- A. Hopping up and down
- B. Standing on a balance beam
- C. Leaping with variation in distance
- D. Throwing an object various distances

Answer _____

7. Which of the following activities is considered an open skill?

- A. Bowling
- B. Putting a golf ball
- C. Batting in a softball game
- D. Shooting a basketball free throw

Answer _____

8. In the assessment of running form, which of the following should be the same for long-distance running and sprinting?

- A. The amount of arm swing
- B. The amount of upper-body lean
- C. The part of the foot used to push off
- D. The degree of foreleg extension

Answer _____

9. In swimming, which of the following sequences is correct for the breaststroke?

- A. Pull, kick, inhale, glide
- B. Pull, inhale, kick, glide
- C. Glide, pull, inhale, kick
- D. Kick, glide, inhale, pull

Answer _____

Competency 003—The teacher understands and applies knowledge of movement concepts and biomechanical principles.

10. A first-grade teacher is having students march to the sound of a drumbeat. Which of the following instructions is most appropriate for teaching the movement concepts of spatial awareness and relationship awareness?

- A. Follow the person in front of you but keep a comfortable distance between you.
- B. Stomp your foot on the fourth beat of each measure, and turn to your right.
- C. March faster as the drumbeat gets faster but freeze when the drumbeat stops.
- D. Time your steps so your foot touches the ground at the same time as the drumbeat.

Answer _____

11. Which of the following biomechanical principles must be applied prior to a leap to achieve the greatest height possible?

- A. Using rotational inertia with a leg extension
- B. Maintaining a steady center of gravity
- C. Establishing balance and pointing the feet
- D. Creating speed and applying force from the legs

Answer _____

12. Which of the following activities best represents a way in which a student can help to extend his or her shooting range in basketball to make a three-point shot?

- A. Facing the basket after catching a basketball at the three-point line and preparing to release the ball while aiming for the shooter's square
- B. Keeping the palms facing the basket and protecting the ball with two hands on the same side before using a finger roll while shooting
- C. Shooting five feet from the basket until an all-net shot is made, then moving back one step and repeating the process
- D. Aligning the feet comfortably on the free throw line with bent knees before releasing the ball with the shooting hand

Answer _____

Competency 004—The teacher understands and applies knowledge of individual, dual and team sports and activities.

13. Several students in a physical education class are having difficulty reaching the basket with their shots, even while using a youth-sized ball. Which of the following options is most appropriate for the teacher to introduce to increase the students' success?

- A. Allowing students to use a balloon instead of a basketball
- B. Lowering the height of the basketball goal
- C. Raising the height of the basketball goal
- D. Allowing students to use a bouncy playground ball

Answer _____

14. When teaching a new skill for a particular sport, which of the following should the teacher do first?

- A. Provide drills to lead up to the skill
- B. Have students practice the skill
- C. Introduce the skill
- D. Provide feedback to correct errors

Answer _____

15. Which of the following refers to the soccer ball size that is most appropriate for students 13 years or older?

- A. 1
- B. 3
- C. 4
- D. 5

Answer _____

16. A physical education teacher is introducing students to the game of lacrosse. Which of the following adaptations is most likely to increase the success of students playing lacrosse for the first time?

- A. Expanding the size of the goal
- B. Playing without keeping score
- C. Creating large teams
- D. Using unlimited field space

Answer _____

Competency 005—The teacher understands principles, techniques, skills and safety practices for dance, personal performance activities, cooperative and nontraditional games, recreational activities and outdoor pursuits.

17. A community golf course is located next to the high school. A physical education teacher has a golf unit planned and makes arrangements with the course to use its practice facilities during class. Students will be able to practice putting, chipping and driving. Which of the following is most important for the teacher to do to ensure the lessons run smoothly during the unit?

- A. Tell students they must dress in appropriate golf attire
- B. Ensure that the course has an adequate inventory of practice equipment
- C. Require students to take golf lessons before the unit
- D. Have students study the different types of turf on the course

Answer _____

18. Which of the following skills should be learned first in the skill progression for a heel stop during a lesson on in-line skating?

- A. Shifting the weight to the left leg and rolling the right leg forward
- B. Aligning the body in the ready position with the arms out in front and bending slightly forward at the waist
- C. Tilting the right toe up to engage the heel brake and pressing down on the gymnasium floor
- D. Dragging one skate behind and perpendicular to the other

Answer _____

19. Students in a physical education class are about to begin a warm-up jog. Which of the following is the most appropriate advice for the teacher to give them regarding proper jogging technique?

- A. Moving hands and arms across the body's midline
- B. Limiting movement at the knees and ankles
- C. Maintaining an upright and stable body posture
- D. Lowering the chest and lunging forward

Answer _____

Domain II—Health-Related Physical Fitness

Competency 006—The teacher understands major body systems, principles of physical fitness development and training and the benefits of a healthy, active lifestyle.

20. Which of the following is an uncontrollable factor that can affect a person's health?

- A. Diet
- B. Heredity
- C. Smoking
- D. Stress

Answer _____

21. Which of the following are the four components, or principles, of training and exercise?

- A. Health, skill, body composition, and flexibility
- B. Speed, power, balance, and coordination
- C. Frequency, intensity, time, and type of activity
- D. Agility, reaction time, endurance, and strength

Answer _____

22. Which of the following best describes how regular exercise is beneficial to the brain?

- A. Increased levels of endorphins are released into the brain, boosting a person's mood.
- B. Decreased levels of proteins are released, hindering the ability of the person to develop new brain cells.
- C. Increased levels of lactic acid are produced, stimulating the person's energy level and allowing for sustained exercise.
- D. Decreased blood flow to the brain occurs both during and after the workout, allowing the person to worry less about weight gain.

Answer _____

Competency 007—The teacher understands principles and activities for developing and maintaining cardiovascular endurance.

23. Which of the following best describes VO_2 max?

- A. The system that provides most of the oxygen needed for long-duration or endurance exercises
- B. The maximum amount of oxygen that an individual can use during maximal or exhaustive exercise
- C. The method by which the body supplies energy for short, high-intensity bursts of activity lasting several minutes
- D. The way the circulatory and respiratory systems supply energy to the working muscles for sustained activity

Answer _____

24. Which of the following best explains why age-predicted maximal heart rate is used to regulate the intensity of aerobic exercise?

- A. Perceived exertion and exercise duration are inversely correlated.
- B. Exercise intensity and exercise duration are inversely correlated.
- C. Exercise velocity and exercise intensity are directly correlated.
- D. Heart rate and oxygen consumption are closely related.

Answer _____

25. To prepare his class for a unit on aerobic exercise, Mr. Peal taught his students the Karvonen formula to calculate their heart rate (HR) for a specific training intensity. One of the components of this calculation is the heart rate reserve (HRR). The HRR is used to determine the HR to be attained during exercise, which is calculated by doing which of the following?

- A. Adding the resting HR to the blood pressure reading
- B. Subtracting the resting HR from the maximal HR

- C. Dividing the maximal HR by the resting HR
- D. Multiplying the resting HR by the maximal HR

Answer _____

26. A few days ago, a distance runner increased his running mileage. Since then he has noticed that his muscles are much more sore than usual and his times have not improved. Which of the following is the athlete most likely experiencing?

- A. Overtraining
- B. Overreaching
- C. Hyperplasia
- D. Cross-training

Answer _____

Competency 008—The teacher understands principles and activities for developing and maintaining flexibility, posture and muscular strength and endurance.

27. An exaggerated curvature of the vertebral column involving an excessive bending of the thoracic area toward the anterior is called

- A. kyphosis.
- B. lordosis.
- C. scoliosis.
- D. spondylosis.

Answer _____

28. Which of the following is the best activity to increase muscular endurance?

- A. Resistance training using high repetitions and light weight
- B. Resistance training using low repetitions and heavy weight
- C. Isotonic resistance training
- D. Plyometric resistance training

Answer _____

29. Which of the following abdominal-strength exercises benefits the rectus abdominis muscle while protecting the lower back?

- A. Keeping the knees straight while doing half sit-ups
- B. Keeping the knees straight while doing full sit-ups
- C. Bending the knees at a 90-degree angle while doing half sit-ups
- D. Bending the knees at a 90-degree angle while doing full sit-ups

Answer _____

30. Which of the following tests is used to determine muscular strength?

- A. Twelve-minute walk/run test
- B. One-repetition max test
- C. Sit-and-reach test
- D. Twenty-meter shuttle run test

Answer _____

Competency 009—The teacher understands health and wellness concepts, including those related to nutrition, weight control and stress management, and analyses ways in which personal behaviors influence health and wellness.

31. Which of the following most accurately represents the number of pounds a person would lose if 3,500 more calories were burned rather than taken in over a span of time?

- A. 1
- B. 2
- C. 3
- D. 5

Answer _____

32. The use of anabolic-androgenic steroids is known to deepen the voice and increase the growth of body hair, muscle size, and aggression. Which TWO of the following are the main reasons for the changes?

- A. The substances are nearly identical to male sex hormones
- B. The substances function in the human body as testosterone
- C. The substances are nearly identical to carbohydrates
- D. The substances speed up cell metabolism

Answer _____

33. According to the United States Department of Health and Human Services *Physical Activity Guidelines for Americans*, children and adolescents should engage in muscle- and bone-strengthening activities at least

- A. four days per week.
- B. three days per week.
- C. two days per week.
- D. one day per week.

Answer _____

34. Which of the following groups of athletes has the greatest risk of developing early osteoporosis because of insufficient calcium intake?

- A. Female basketball players
- B. Male track-and-field sprinters
- C. Male swimming sprinters
- D. Female gymnasts

Answer _____

Domain III—The Physical Education Program

Competency 010—The teacher knows how to use effective, developmentally appropriate instruction and assessment to prepare physically educated individuals.

35. When preparing lesson plan objectives, the physical education teacher should refer to which THREE of the following?

- A. National standards
- B. Local curriculums
- C. State standards
- D. United States Bill of Rights

Answer _____

36. Which of the following methods best demonstrates effective teaching behavior using nonverbal communication during physical education class?

- A. Pointing to the next station to direct students to a new activity
- B. Telling the class that they are spending too much time changing their clothes for gym
- C. Looking students in the eye while giving individual feedback on a skill they are performing
- D. Asking students to respond to feedback from their peers during an activity

Answer _____

37. In a certain kindergarten class, about half of the students use an immature form when jumping, and the remaining students use a mature form. Which of the following statements best explains the difference in ability?

- A. The students jumping with mature form may have started school a year early.
- B. The students jumping with mature form have developed at a faster rate.
- C. Females develop physical abilities at a much slower rate than males.
- D. Motor ability is directly related to parental involvement.

Answer _____

Competency 011—The teacher understands factors relevant to learning and performance in physical education and uses this knowledge to create learning environments and opportunities that promote students' development in various domains (e.g., cognitive, social, emotional).

38. A student is most likely to be self-motivated and engage in physical activities long term when the student

- A. participates in physical activities several times a week at school.
- B. understands the effects of physical activity versus the effects of nonactivity.
- C. knows the rules and understands a wide variety of team sports.
- D. possesses the knowledge, skills, and attitude to lead a healthy lifestyle.

Answer _____

39. In a problem-solving classroom culture, which TWO of the following are the primary responsibilities of the physical education teacher?

- A. To foster and promote decision making among learners
- B. To maintain an overall emphasis on inquiry
- C. To serve as the ultimate decision maker
- D. To ensure that students follow classroom rules

Answer _____

40. According to current research in the field of physical education, which of the following best promotes student participation in lifelong physical activity?

- A. Learning how to play popular sports and games
- B. Playing for a team that wins games regularly
- C. Acquiring basic skills needed to participate in a variety of activities
- D. Becoming familiar with common gymnasium equipment

Answer _____

41. Which of the following is the best plan for a student who wants to begin a personal fitness program?

- A. Joining a gym that offers only group activities and exercises
- B. Focusing specifically on one type of activity or exercise
- C. Allotting time for extended sessions of high-intensity exercise
- D. Choosing a variety of activities in which to participate

Answer _____

42. Outdoor education, such as rock climbing, hiking, and kayaking classes, promotes lifelong physical activity and builds self-esteem because these activities provide students with opportunities to do which of the following?

- A. Mentally block out problems and distractions by meditating
- B. Achieve goals and experience a sense of accomplishment
- C. Enjoy time in nature while competing against peers
- D. Attempt to break personal fitness records each time they participate

Answer _____

Competency 012—The teacher understands the structure, organization, goals and purposes of physical education programs.

43. In the 1980s, among students who participated in high-visibility intercollegiate sports (e.g., Division I football, baseball, and basketball) which of the following was the postcollegiate experience of those who had received full athletic scholarships?

- A. Fewer than 5 percent of men and women went on to play their sport at a professional level.

- B. About 50 percent of men and women went on to play their sport at a professional level.
- C. About 75 percent of men and women had careers in sports management, ownership, or professional or college coaching.
- D. The majority of men but not of women went on to play their sport at a professional level.

Answer _____

44. Which of the following factors is most highly correlated with positive gains in motor learning and achievement in a physical education classroom setting?

- A. Provision of feedback that is mainly linked to results or outcomes rather than performance
- B. The amount of time students are physically active and having fun, regardless of the activity
- C. The amount of time students spend engaged successfully in activities related to lesson objectives
- D. Provision of feedback that is primarily nonverbal rather than verbal in nature

Answer _____

45. In addition to teaching students movement skills, physical education programs should incorporate cooperative group activities that provide students with natural and valuable opportunities. The physical education teacher can best achieve this through which of the following strategies?

- A. Ensuring students understand the superior benefits of competing against oneself rather than against others
- B. Developing students' familiarity with and use of effective organizational and leadership traits and styles
- C. Ensuring students understand the structure and dynamics of groups and how to best work within that setting
- D. Developing in students a variety of positive social skills, attitudes, and behaviors

Answer _____

46. A high school administrator has decided to focus on incorporating physical education across all academic disciplines for the upcoming school year. Which of the following is the most appropriate strategy for executing the plan?

- A. Having physical education teachers give fifteen-minute presentations during planning periods about the benefits of physical activity and academic success
- B. Asking outstanding senior athletes to explain to teachers how being physically fit has helped them throughout their high school years
- C. Using planning periods as a time for teachers to co-plan units incorporating physical activity throughout the disciplines
- D. Showing a presentation during back-to-school night that encourages students and parents to become aware of the benefits of physical education

Answer _____

Competency 013—The teacher understands legal issues and responsibilities of physical education teachers in relation to supervision, planning and instruction, safety, first aid and risk management.

47. A portion of Texas Senate Bill 530 mandates that all students in Texas take a fitness test. How often must each student take a fitness test?

- A. Once every six weeks
- B. Once every nine weeks
- C. Twice a semester
- D. Once a year

Answer _____

48. Which of the following teaching practices is most likely to ensure that a physical education teacher receives legal protection against a lawsuit that might arise from a student who becomes injured in class?

- A. Using written lesson plans that feature curriculum activities appropriate for the age and skill level of the students
- B. Regularly attending in-service and staff development programs to learn about innovative physical activities and techniques
- C. Ensuring that the goals and objectives of the physical education program incorporate the educational mission and goals of the school
- D. Ensuring that general rules for student behavior and participation in physical activities are prominently posted

Answer _____

49. Which of the following statements is the most accurate interpretation of Title IX of the Education Amendments of 1972 as it pertains to sports and physical education?

- A. Physical education teachers are required to modify lesson plans to accommodate students with disabilities.
- B. Males and females must have an equal opportunity to participate in sports and physical education in any school or entity receiving federal financial assistance.
- C. The government must provide equal sports and physical education funding to all of the school districts within a state.
- D. Coaches must allow eligible players who are passing all academic subjects to participate in school sports.

Answer _____

50. An elementary school has created a policy that prohibits students from using physical education or playground equipment unless a teacher is present. The primary reason for the policy is to reduce the risk of

- A. practice-restriction violations.
- B. curriculum deviations.
- C. equipment damage.
- D. student injury.

Answer _____

Preparation Manual

Section 4: Sample Selected-Response Answers and Rationales

Physical Education EC–12 (158)

This section presents some sample exam questions for you to review as part of your preparation for the exam. To demonstrate how each competency may be assessed, sample questions are accompanied by the competency that they measure. While studying, you may wish to read the competency before and after you consider each sample question. Please note that the competency statements do not appear on the actual exam.

For each sample exam question, there is a correct answer and a rationale for each answer option. The sample questions are included to illustrate the formats and types of questions you will see on the exam; however, your performance on the sample questions should not be viewed as a predictor of your performance on the actual exam.

Domain I—Movement Skills and Knowledge

Competency 001—The teacher understands and applies principles of motor development and motor learning.

1. Milestones of refined finger control can be expected at which of the following ages?
 - A. 4 years old
 - B. 8 years old
 - C. 12 years old
 - D. 16 years old

Answer

Option B is correct because finger control is generally quite refined at the 8-year-old milestone of fine-motor skill development. **Option A is incorrect** because at 4 years old, a child is progressing but not yet at a refined-level fine-motor skill development. Fine-motor skills typically develop in a reasonably consistent pattern, starting from birth and, with practice, can be refined throughout adulthood. However, **options C and D are incorrect** because a 12 year old and a 16 year old should have already reached the milestone of refinement in finger control by 8 years old.

2. The relationship between personal-social skills and physical education is most accurately described by which of the following statements?
 - A. Personal-social skills should be addressed in the physical education class through direct instruction.
 - B. The physical education class reinforces the personal-social skills learned at home.
 - C. In the physical education class, personal-social skills are typically addressed after fitness and motor skills are developed
 - D. Personal-social skills typically develop concurrently with fitness and motor skills, given a physical education class with the proper environment.

Answer

Option D is correct because physical education directly contributes to fitness, motor skill development, and personal-social development when instruction is given in a safe and supportive environment. **Options A and C are incorrect** because social skills should be incorporated into the physical education class instruction indirectly, accompanied with fitness and motor skill development. **Option B is incorrect** because social skills learned at home are generally unknown to the teacher and could possibly be inappropriate.

3. Which of the following terms best explains why a young student has greater control of his or her upper torso than of his or her legs and feet?
- A. Component stages
 - B. Proximodistal development
 - C. Developmental biodynamics
 - D. Cephalocaudal development

Answer

Option D is correct because cephalocaudal development describes physical development that starts from the head and then progresses to the lower parts of the body, such as the legs and feet. **Option A is incorrect** because component stages do not exist as part of physical development. **Option B is incorrect** because proximodistal development describes physical development from the center of the body, such as the spinal cord, with progression outward to the fingers and toes. **Option C is incorrect** because developmental biodynamics is a field that describes brain, body, and behavior connections as related to motor development.

4. Delayed-onset muscle soreness (DOMS) is typically associated with which of the following types of muscle contractions?
- A. Isometric
 - B. Concentric
 - C. Eccentric
 - D. Co-contraction

Answer

Option C is correct because delayed-onset muscle soreness (DOMS) is generally associated with activities that cause muscles to lengthen while force is applied. This is eccentric muscle contraction. **Options A and B are incorrect** because the muscles endure higher forces and more soreness after eccentric exercise than during isometric and concentric exercises. **Option D is incorrect** because co-contraction is the synergistic activation of a group of muscles, such as the core, that provides support to perform exercises correctly.

5. To best provide students with positive corrective feedback, a physical education teacher should do which of the following?
- A. Take visual observation notes on each student's performance
 - B. Provide students with verbal cues as they practice skills
 - C. Offer students written critiques after they demonstrate their ability
 - D. Record students executing the skill using slow-motion video

Answer

Option B is correct because verbal cuing enhances attention and provides information that visual observation alone cannot provide. **Option A is incorrect** because visual observation allows the teacher to evaluate the student and does not offer ways to fix any errors produced while performing the motor skill. **Option C is incorrect** because a written critique could provide unclear explanations for improvement and may not help the student improve in a positive manner because of the potential lack of clarity. Additionally, the feedback is delayed and cannot be applied to begin making correction immediately and the student may never read the feedback. **Option D is incorrect** because recording the students' movements in slow motion is a way to evaluate the students' performance. In order to provide them with feedback, the teacher would need to discuss the slow-motion video with the students individually.

Competency 002—The teacher understands principles and practices for developing, combining and integrating motor skills.

6. Which of the following forms of movement most clearly demonstrates basic skill in nonlocomotor body management?
- A. Hopping up and down
 - B. Standing on a balance beam
 - C. Leaping with variation in distance
 - D. Throwing an object various distances

Answer

Option B is correct because standing on a balance beam is a form of movement that demonstrates a student has the basic skill of nonlocomotor body management. **Options A and C are incorrect** because hopping and leaping are locomotor movement skills. **Option D is incorrect** because throwing is a manipulative movement skill.

7. Which of the following activities is considered an open skill?
- A. Bowling
 - B. Putting a golf ball
 - C. Batting in a softball game
 - D. Shooting a basketball free throw

Answer

Option C is correct because batting in a softball game is performed in a constantly changing environment and so is considered an open skill. **Options A, B, and D are incorrect** because bowling, putting a golf ball, and shooting a free throw are generally performed in an unchanging environment at the pace of the performer, making these closed skills.

8. In the assessment of running form, which of the following should be the same for long-distance running and sprinting?
- A. The amount of arm swing

- B. The amount of upper-body lean
- C. The part of the foot used to push off
- D. The degree of foreleg extension

Answer

Option C is correct because the part of the foot used to push off when doing either a sprint or a long-distance run should be the ball of the foot. **Option A is incorrect** because the amount of arm swing is generally greater during sprinting than during long-distance running. **Option B is incorrect** because the amount of upper-body lean is generally greater during the initial phases of sprinting than during long-distance running. **Option D is incorrect** because compared with long-distance running, sprinting requires greater power; therefore, the degree of foreleg extension in sprinting would be smaller.

9. In swimming, which of the following sequences is correct for the breaststroke?

- A. Pull, kick, inhale, glide
- B. Pull, inhale, kick, glide
- C. Glide, pull, inhale, kick
- D. Kick, glide, inhale, pull

Answer

Option B is correct because during the breaststroke, the arms pull out and back toward the body while the head and upper body lift for a breath and the knees bend to prepare for the kick. After the kick, the upper body and arms are in the glide position. Therefore, the sequence for the breaststroke is pull, inhale, kick, and glide.

Options A, C, and D are incorrect because they do not describe the proper sequence of the breaststroke.

Competency 003—The teacher understands and applies knowledge of movement concepts and biomechanical principles.

10. A first-grade teacher is having students march to the sound of a drumbeat. Which of the following instructions is most appropriate for teaching the movement concepts of spatial awareness and relationship awareness?

- A. Follow the person in front of you but keep a comfortable distance between you.
- B. Stomp your foot on the fourth beat of each measure, and turn to your right.
- C. March faster as the drumbeat gets faster but freeze when the drumbeat stops.
- D. Time your steps so your foot touches the ground at the same time as the drumbeat.

Answer

Option A is correct because the instruction to follow the person in front but keep a comfortable distance is focused on the movement concept of spatial awareness. Spatial awareness is the ability to see and understand objects in relation to each other and to oneself. **Options B, C, and D are incorrect** because the directions focus on how the body moves, not where the body moves.

11. Which of the following biomechanical principles must be applied prior to a leap to achieve the greatest height possible?

- A. Using rotational inertia with a leg extension
- B. Maintaining a steady center of gravity
- C. Establishing balance and pointing the feet
- D. Creating speed and applying force from the legs

Answer

Option D is correct because the height of a leap is affected by the force and speed. The more force that is placed on the legs, the more power is generated for the leap. **Option A is incorrect** because torque and rotational inertia are the physics principles that can affect the speed and balance of your spin. You slow down when the leg is extended and speed up when the leg is retracted. **Option B is incorrect** because timing the leap to raise your center of gravity at the peak of the parabola creates an illusion of maintaining center of gravity.

Option C is incorrect because when balancing on your toes, you are exerting a force against the floor that is equal to the force of gravity being exerted on you. This results in a zero-sum force acting on the body, placing you in your center of gravity.

12. Which of the following activities best represents a way in which a student can help to extend his or her shooting range in basketball to make a three-point shot?

- A. Facing the basket after catching a basketball at the three-point line and preparing to release the ball while aiming for the shooter's square
- B. Keeping the palms facing the basket and protecting the ball with two hands on the same side before using a finger roll while shooting
- C. Shooting five feet from the basket until an all-net shot is made, then moving back one step and repeating the process
- D. Aligning the feet comfortably on the free throw line with bent knees before releasing the ball with the shooting hand

Answer

Option C is correct because adjusting the distance from closer to farther as each distance is mastered helps to extend the shooting range and accuracy of the three-point shot in basketball. **Option A is incorrect** because the activities described are similar to those that help develop the triple-threat move in basketball. **Option B is incorrect** because the sequence of activities described helps with performing the lay-up shot in basketball.

Option D is incorrect because the movement progress describes skills needed to develop a good free throw in basketball. A free throw does not help extend a student's shooting ability for a three-point throw.

Competency 004—The teacher understands and applies knowledge of individual, dual and team sports and activities.

13. Several students in a physical education class are having difficulty reaching the basket with their shots, even while using a youth-sized ball. Which of the following options is most appropriate for the teacher to introduce to increase the students' success?

- A. Allowing students to use a balloon instead of a basketball

- B. Lowering the height of the basketball goal
- C. Raising the height of the basketball goal
- D. Allowing students to use a bouncy playground ball

Answer

Option B is correct because by lowering the height of the basketball goal, the teacher is decreasing the distance the students need to throw and increasing the likelihood that they will successfully make a basket. **Options A and D are incorrect** because changing the ball will not make it easier for the students to reach the goal. **Option C is incorrect** because increasing the height of the basketball goal will increase the distance the ball must travel and make the task more challenging for students.

14. When teaching a new skill for a particular sport, which of the following should the teacher do first?
- A. Provide drills to lead up to the skill
 - B. Have students practice the skill
 - C. Introduce the skill
 - D. Provide feedback to correct errors

Answer

Option C is correct because when teaching a new skill to students for any sport, the teacher should always introduce the skill first to the students. **Option A is incorrect** because providing drills to lead up to the skill should occur after the skill has been introduced. **Option B is incorrect** because having students practice the skill should occur after the skill has been introduced and lead-up drills have been performed. **Option D is incorrect** because feedback should be provided after the skill has been introduced, lead-up drills have been performed, and students have had an opportunity to practice the newly learned skill.

15. Which of the following refers to the soccer ball size that is most appropriate for students 13 years or older?
- A. 1
 - B. 3
 - C. 4
 - D. 5

Answer

Option D is correct because the largest size soccer ball is an adult ball that is considered a size 5. **Option A is incorrect** because a size 1 ball is a peewee ball that is used for skills and small children. **Option B is incorrect** because a size 3 ball is a junior ball that is used for children 8 and under. **Option C is incorrect** because a size 4 ball is a youth ball that is used for children ages 8 to 12.

16. A physical education teacher is introducing students to the game of lacrosse. Which of the following adaptations is most likely to increase the success of students playing lacrosse for the first time?
- A. Expanding the size of the goal

- B. Playing without keeping score
- C. Creating large teams
- D. Using unlimited field space

Answer

Option A is correct because expanding the size of the goal allows for success for all students, including those who are new to this sport. **Option B is incorrect** because keeping score or not keeping score doesn't necessarily change how people play a game. **Option C is incorrect** because creating larger teams can lead to crowded areas in the playing space and safety issues. **Option D is incorrect** because using unlimited space can cause confusion with rules and boundaries.

Competency 005—The teacher understands principles, techniques, skills and safety practices for dance, personal performance activities, cooperative and nontraditional games, recreational activities and outdoor pursuits.

17. A community golf course is located next to the high school. A physical education teacher has a golf unit planned and makes arrangements with the course to use its practice facilities during class. Students will be able to practice putting, chipping and driving. Which of the following is most important for the teacher to do to ensure the lessons run smoothly during the unit?

- A. Tell students they must dress in appropriate golf attire
- B. Ensure that the course has an adequate inventory of practice equipment
- C. Require students to take golf lessons before the unit
- D. Have students study the different types of turf on the course

Answer

Option B is correct because in order for the teacher to effectively instruct students, enough practice equipment must be available for all students. **Option A is incorrect** because proper golf attire is not required in a physical education setting. **Option C is incorrect** because the teacher is responsible for developing students' golf skills and should assume that students have not had prior golf lessons. **Option D is incorrect** because having students study the different types of turf surfaces will not ensure that the lesson will run smoothly.

18. Which of the following skills should be learned first in the skill progression for a heel stop during a lesson on in-line skating?

- A. Shifting the weight to the left leg and rolling the right leg forward
- B. Aligning the body in the ready position with the arms out in front and bending slightly forward at the waist
- C. Tilting the right toe up to engage the heel brake and pressing down on the gymnasium floor
- D. Dragging one skate behind and perpendicular to the other

Answer

Option B is correct because students should be instructed to achieve proper balance for skating before beginning to stop. **Options A, C, and D are incorrect** because students should learn how to position the body

correctly for balance before learning the brake steps. When learning progression in skating, students should learn proper movement progression, balance, and body positioning before learning brake steps.

19. Students in a physical education class are about to begin a warm-up jog. Which of the following is the most appropriate advice for the teacher to give them regarding proper jogging technique?

- A. Moving hands and arms across the body's midline
- B. Limiting movement at the knees and ankles
- C. Maintaining an upright and stable body posture
- D. Lowering the chest and lunging forward

Answer

Option C is correct because of the choices listed, the most important in jogging would be to maintain an upright and stable body posture. **Option A is incorrect** because moving the hands and arms across the body's midline has no impact on proper jogging technique. **Option B is incorrect** because a person should actually have good flexibility in the knees and ankles during jogging. **Option D is incorrect** because lowering the chest and lunging forward would be the opposite of an upright and stable posture.

Domain II—Health-Related Physical Fitness

Competency 006—The teacher understands major body systems, principles of physical fitness development and training and the benefits of a healthy, active lifestyle.

20. Which of the following is an uncontrollable factor that can affect a person's health?

- A. Diet
- B. Heredity
- C. Smoking
- D. Stress

Answer

Option B is correct because heredity is inherited and uncontrollable, causing people to be predisposed to certain health-related advantages and disadvantages. **Options A, C, and D are incorrect** because they include factors affecting health that can be controlled by oneself.

21. Which of the following are the four components, or principles, of training and exercise?

- A. Health, skill, body composition, and flexibility
- B. Speed, power, balance, and coordination
- C. Frequency, intensity, time, and type of activity
- D. Agility, reaction time, endurance, and strength

Answer

Option C is correct because the four components of fitness and exercise are frequency, intensity, time, and type of activity. **Options A, B, and D are incorrect** because they are combinations of health- and skill-related components.

22. Which of the following best describes how regular exercise is beneficial to the brain?

- A. Increased levels of endorphins are released into the brain, boosting a person's mood.
- B. Decreased levels of proteins are released, hindering the ability of the person to develop new brain cells.
- C. Increased levels of lactic acid are produced, stimulating the person's energy level and allowing for sustained exercise.
- D. Decreased blood flow to the brain occurs both during and after the workout, allowing the person to worry less about weight gain.

Answer

Option A is correct because exercise produces endorphins in the brain resulting in an elevated mood and feelings of euphoria. **Option B is incorrect** because exercise activates proteins to help form new brain cells. **Option C is incorrect** because lactic acid is a side-effect of exercise and will lead to reducing activity. **Option D is incorrect** because during exercise, there is an increase in blood flow to the brain.

Competency 007—The teacher understands principles and activities for developing and maintaining cardiovascular endurance.

23. Which of the following best describes VO₂ max?

- A. The system that provides most of the oxygen needed for long-duration or endurance exercises
- B. The maximum amount of oxygen that an individual can use during maximal or exhaustive exercise
- C. The method by which the body supplies energy for short, high-intensity bursts of activity lasting several minutes
- D. The way the circulatory and respiratory systems supply energy to the working muscles for sustained activity

Answer

Option B is correct because the definition of VO₂ max is the maximum rate of oxygen consumption measured during incremental exercise. **Option A is incorrect** because the system that provides most of the oxygen needed for long-duration or endurance exercises refers to aerobic metabolism, or the set of metabolic reactions that convert biochemical energy from nutrients into adenosine triphosphate (ATP). **Option C is incorrect** because the method by which the body supplies energy for short, high-intensity bursts of activity refers to anaerobic metabolism, where the system uses respiration without oxygen. **Option D is incorrect** because the manner in which energy is supplied from the circulatory and respiratory systems to the muscles for sustained activity is a definition of endurance.

24. Which of the following best explains why age-predicted maximal heart rate is used to regulate the intensity of aerobic exercise?

- A. Perceived exertion and exercise duration are inversely correlated.
- B. Exercise intensity and exercise duration are inversely correlated.
- C. Exercise velocity and exercise intensity are directly correlated.
- D. Heart rate and oxygen consumption are closely related.

Answer

Option D is correct because as the body moves from rest to exercise, the heart rate begins to increase steadily. This allows for faster oxygen delivery to the working tissues and muscles, which allows for an increase in oxygen consumption. The age-predicted maximal heart rate method is simple and objective in that it uses age alone to predict maximal heart rate during activity. **Options A, B, and C are incorrect** because age-predicted maximal heart rate does not take into consideration perceived exertion, exercise duration, exercise intensity, or exercise velocity.

25. To prepare his class for a unit on aerobic exercise, Mr. Peal taught his students the Karvonen formula to calculate their heart rate (HR) for a specific training intensity. One of the components of this calculation is the heart rate reserve (HRR). The HRR is used to determine the HR to be attained during exercise, which is calculated by doing which of the following?

- A. Adding the resting HR to the blood pressure reading
- B. Subtracting the resting HR from the maximal HR
- C. Dividing the maximal HR by the resting HR
- D. Multiplying the resting HR by the maximal HR

Answer

Option B is correct because this is the proper way to utilize the Karvonen formula in calculating the heart rate reserve by subtracting the resting HR from the maximal HR. **Options A, C, and D are incorrect** because the Karvonen formula requires the participant to subtract their resting HR from the maximal HR to calculate the heart rate reserve.

26. A few days ago, a distance runner increased his running mileage. Since then he has noticed that his muscles are much more sore than usual and his times have not improved. Which of the following is the athlete most likely experiencing?

- A. Overtraining
- B. Overreaching
- C. Hyperplasia
- D. Cross-training

Answer

Option B is correct because overreaching is a short-term increase in training volume that can eventually turn into overtraining. **Option A is incorrect** because overtraining is a longer-term increase; with overtraining, the body requires a period of rest to recover. **Option C is incorrect** because hyperplasia is an increase in the amount of

organic tissue that results from cell proliferation. **Option D is incorrect** because in cross-training, an athlete trains in a variety of sports, usually to overcome imbalances caused by only doing one type of training.

Competency 008—The teacher understands principles and activities for developing and maintaining flexibility, posture and muscular strength and endurance.

27. An exaggerated curvature of the vertebral column involving an excessive bending of the thoracic area toward the anterior is called

- A. kyphosis.
- B. lordosis.
- C. scoliosis.
- D. spondylosis.

Answer

Option A is correct because exaggerated upper back curvature of the vertebral column, generally involving an excessive bending of the thoracic area, is known as kyphosis. **Option B is incorrect** because lordosis is exaggerated lower back curvature of the vertebral column. **Option C is incorrect** because scoliosis is a sideways curvature of the vertebral column. **Option D is incorrect** because spondylosis refers to osteoarthritis of the cervical spine.

28. Which of the following is the best activity to increase muscular endurance?

- A. Resistance training using high repetitions and light weight
- B. Resistance training using low repetitions and heavy weight
- C. Isotonic resistance training
- D. Plyometric resistance training

Answer

Option C is correct because during isotonic resistance training, the muscles shorten while lifting a constant load, increasing blood flow to muscles and muscular endurance. **Options A and B are incorrect** because using high repetitions and light weights or low repetitions and heavy weights describes resistance training that develops muscular strength. **Option D is incorrect** because plyometric resistance training is designed to increase muscular power and explosiveness.

29. Which of the following abdominal-strength exercises benefits the rectus abdominis muscle while protecting the lower back?

- A. Keeping the knees straight while doing half sit-ups
- B. Keeping the knees straight while doing full sit-ups
- C. Bending the knees at a 90-degree angle while doing half sit-ups
- D. Bending the knees at a 90-degree angle while doing full sit-ups

Answer

Option C is correct because performing half sit-ups with the knees bent at a 90-degree angle is the optimal way to strengthen the abdominal muscles without placing stress on the lower back. **Options A, B, and D are incorrect** because performing full sit-ups or half sit-ups with the knees straight creates a high-compression force that places strain on lower back muscles.

30. Which of the following tests is used to determine muscular strength?

- A. Twelve-minute walk/run test
- B. One-repetition max test
- C. Sit-and-reach test
- D. Twenty-meter shuttle run test

Answer

Option B is correct because the one-repetition max test is a standard test for muscular strength. **Option A is incorrect** because the twelve-minute walk/run test is a cardiovascular fitness test. **Option C is incorrect** because the sit-and-reach test is a flexibility test. **Option D is incorrect** because the twenty-meter shuttle run test is an agility test.

Competency 009—The teacher understands health and wellness concepts, including those related to nutrition, weight control and stress management, and analyses ways in which personal behaviors influence health and wellness.

31. Which of the following most accurately represents the number of pounds a person would lose if 3,500 more calories were burned rather than taken in over a span of time?

- A. 1
- B. 2
- C. 3
- D. 5

Answer

Option A is correct because creating a 3,500-calorie deficit through diet and exercise will result in a weight loss of 1 pound over time. **Option B is incorrect** because a person would need to burn 7,000 calories to lose 2 pounds over time. **Option C is incorrect** because a person would need to burn 10,500 calories to lose 3 pounds over time. **Option D is incorrect** because a person would need to burn 17,500 calories to lose 5 pounds over time.

32. The use of anabolic-androgenic steroids is known to deepen the voice and increase the growth of body hair, muscle size, and aggression. Which TWO of the following are the main reasons for the changes?

- A. The substances are nearly identical to male sex hormones
- B. The substances function in the human body as testosterone
- C. The substances are nearly identical to carbohydrates
- D. The substances speed up cell metabolism

Answer

Options A and B are correct because anabolic-androgenic steroids are the synthetic variants of the male sex hormone testosterone and function in the human body to increase male sexual characteristics such as a deepened voice and increased growth of body hair, muscle size, and aggression. **Option C is incorrect** because the substances in anabolic-androgenic steroids are nearly identical to male sex hormones. **Option D is incorrect** because the use of anabolic-androgenic steroids to speed up cell metabolism could increase the risk of liver damage and increase a person's chance of having a heart attack or a stroke.

33. According to the United States Department of Health and Human Services *Physical Activity Guidelines for Americans*, children and adolescents should engage in muscle- and bone-strengthening activities at least

- A. four days per week.
- B. three days per week.
- C. two days per week.
- D. one day per week.

Answer

Option B is correct because the United States Department of Health and Human Services recommends that children and adolescents should engage in muscle- and bone-strengthening physical activity at least three days of the week. **Options A, C, and D are incorrect** because they do not exist as appropriate recommendations for bone-strengthening physical activity.

34. Which of the following groups of athletes has the greatest risk of developing early osteoporosis because of insufficient calcium intake?

- A. Female basketball players
- B. Male track-and-field sprinters
- C. Male swimming sprinters
- D. Female gymnasts

Answer

Option D is correct because, in addition to gymnastics being a weight-centric sport, females are predisposed toward osteoporosis, thus putting female gymnasts at high risk for early onset of the condition. **Option A is incorrect** because, although females in general are predisposed toward osteoporosis, the condition is not determined by participation in a particular sport. **Options B and C are incorrect** because males in general do not have a high risk for osteoporosis, nor is the condition determined by participation in a particular sport.

Domain III—The Physical Education Program

Competency 010—The teacher knows how to use effective, developmentally appropriate instruction and assessment to prepare physically educated individuals.

35. When preparing lesson plan objectives, the physical education teacher should refer to which THREE of the following?

- A. National standards
- B. Local curriculums
- C. State standards
- D. United States Bill of Rights

Answer

Options A, B, and C are correct because when a physical education teacher is writing lesson plan objectives, he or she should refer to the national standards, state standards, and local curriculums. **Option D is incorrect** because the United States Bill of Rights is not a useful reference document for teachers writing lesson plan objectives.

36. Which of the following methods best demonstrates effective teaching behavior using nonverbal communication during physical education class?

- A. Pointing to the next station to direct students to a new activity
- B. Telling the class that they are spending too much time changing their clothes for gym
- C. Looking students in the eye while giving individual feedback on a skill they are performing
- D. Asking students to respond to feedback from their peers during an activity

Answer

Option C is correct because looking directly at the students provides them with a clear nonverbal cue to reinforce specific feedback about skill performance. **Option A is incorrect** because pointing does not provide students with information on what they are supposed to do when they get to a new activity. **Options B and D are incorrect** because they are verbal cues that do not provide specific feedback to students.

37. In a certain kindergarten class, about half of the students use an immature form when jumping, and the remaining students use a mature form. Which of the following statements best explains the difference in ability?

- A. The students jumping with mature form may have started school a year early.
- B. The students jumping with mature form have developed at a faster rate.
- C. Females develop physical abilities at a much slower rate than males.
- D. Motor ability is directly related to parental involvement.

Answer

Option B is correct because while there are age-related guidelines as to when students achieve milestones of development, some mature at a faster rate than others. **Option A is incorrect** because it is unlikely that all the students with mature jumps started school a year early. **Option C is incorrect** because the question did not differentiate between males and females. Some girls may be mature jumpers at this stage, and some boys may not be. **Option D is incorrect** because while parental involvement may have some impact on students' jumping ability, overall development and natural ability have the biggest impact.

Competency 011—The teacher understands factors relevant to learning and performance in physical education and uses this knowledge to create learning environments and opportunities that promote students' development in various domains (e.g., cognitive, social, emotional).

38. A student is most likely to be self-motivated and engage in physical activities long term when the student
- A. participates in physical activities several times a week at school.
 - B. understands the effects of physical activity versus the effects of nonactivity.
 - C. knows the rules and understands a wide variety of team sports.
 - D. possesses the knowledge, skills, and attitude to lead a healthy lifestyle.

Answer

Option D is correct because by educating students with the knowledge, skills, and attitudes to lead a healthy lifestyle, students will be more self-motivated to do so for a lifetime. **Option A is incorrect** because a physical education teacher's main goal is for all students to be physically active, not only in the classroom but for a lifetime. **Option B is incorrect** because although it is important to know the effects of physical activity and nonactivity, it will not necessarily incline students to participate in physical activity. **Option C is incorrect** because knowing the rules and understanding a particular sport will not necessarily lead students to participate in the sport or activity.

39. In a problem-solving classroom culture, which TWO of the following are the primary responsibilities of the physical education teacher?
- A. To foster and promote decision making among learners
 - B. To maintain an overall emphasis on inquiry
 - C. To serve as the ultimate decision maker
 - D. To ensure that students follow classroom rules

Answer

Options A and B are correct because a classroom culture that supports problem solving fosters and promotes decision making among learners and maintains an emphasis on student inquiry. **Option C is incorrect** because the teacher serves as a guide, while students are encouraged to reach decisions on their own. **Option D is incorrect** because students can work out the rules together, through discussion, rather than the teacher setting and enforcing the rules.

40. According to current research in the field of physical education, which of the following best promotes student participation in lifelong physical activity?
- A. Learning how to play popular sports and games
 - B. Playing for a team that wins games regularly
 - C. Acquiring basic skills needed to participate in a variety of activities
 - D. Becoming familiar with common gymnasium equipment

Answer

Option C is correct because current research indicates that when students acquire the basic skills needed to participate in a variety of activities, they will be more willing and confident in their ability to do so. **Option A is incorrect** because not all popular sports and games will appeal to some students. **Option B is incorrect** because it is unlikely that students will always be on a winning team and it is important for a teacher to educate students on how to win and lose gracefully. **Option D is incorrect** because becoming familiar with common gymnasium equipment will not teach students how to use the equipment to participate in lifelong physical activity.

41. Which of the following is the best plan for a student who wants to begin a personal fitness program?

- A. Joining a gym that offers only group activities and exercises
- B. Focusing specifically on one type of activity or exercise
- C. Allotting time for extended sessions of high-intensity exercise
- D. Choosing a variety of activities in which to participate

Answer

Option D is correct because before beginning any personal fitness program a student should decide which activities he or she enjoys. In setting goals and developing a personal fitness plan, a student should consider different activities but should choose an activity that he or she enjoys enough to do on a regular basis. **Option A is incorrect** because a student may not have access to a gym or may prefer individual activities over group activities. **Option B is incorrect** because a common mistake when starting an exercise program is focusing on only one activity or exercise. **Option C is incorrect** because a student should not exercise for too long or with too much intensity. Children and adolescents should do 60 minutes (one hour) or more of physical activity each day, which should be incorporated throughout the day.

42. Outdoor education, such as rock climbing, hiking, and kayaking classes, promotes lifelong physical activity and builds self-esteem because these activities provide students with opportunities to do which of the following?

- A. Mentally block out problems and distractions by meditating
- B. Achieve goals and experience a sense of accomplishment
- C. Enjoy time in nature while competing against peers
- D. Attempt to break personal fitness records each time they participate

Answer

Option B is correct because outdoor education courses give students the opportunity to challenge themselves as well as develop self-esteem, self-confidence, and self-efficacy. **Option A is incorrect** because the benefits of outdoor education classes do not necessarily include the ability to block out distractions and meditate. **Option C is incorrect** because while outdoor education courses do increase students' exposure to nature and environmental resources, there should not be competition involved. **Option D is incorrect** because outdoor education courses can increase one's physical fitness level, however, breaking personal fitness records is not the most important benefit of participation in outdoor education courses.

Competency 012—The teacher understands the structure, organization, goals and purposes of physical education programs.

43. In the 1980s, among students who participated in high-visibility intercollegiate sports (e.g., Division I football, baseball, and basketball) which of the following was the postcollegiate experience of those who had received full athletic scholarships?

- A. Fewer than 5 percent of men and women went on to play their sport at a professional level.
- B. About 50 percent of men and women went on to play their sport at a professional level.
- C. About 75 percent of men and women had careers in sports management, ownership, or professional or college coaching.
- D. The majority of men but not of women went on to play their sport at a professional level.

Answer

Option A is correct because only a small percentage of intercollegiate athletes go on to play their sport at a professional level. **Options B and D are incorrect** because, although men are more likely than women to make it to the professional level, only a minority of men move on to pursue professional sports careers, and even fewer women do. **Option C is incorrect** because only a small percentage of men and women have careers in college or professional coaching, management, or ownership.

44. Which of the following factors is most highly correlated with positive gains in motor learning and achievement in a physical education classroom setting?

- A. Provision of feedback that is mainly linked to results or outcomes rather than performance
- B. The amount of time students are physically active and having fun, regardless of the activity
- C. The amount of time students spend engaged successfully in activities related to lesson objectives
- D. Provision of feedback that is primarily nonverbal rather than verbal in nature

Answer

Option C is correct because active student learning time in which students are engaged in activities directly related to the lesson's objective is highly correlated with a positive gain in motor learning in a physical education setting. **Option A is incorrect** because the feedback on the performance of the skill is more important than the outcome. **Option B is incorrect** because all activities should be taught and performed with a lesson objective in mind. **Option D is incorrect** because verbal feedback is more successful in a physical education setting.

45. In addition to teaching students movement skills, physical education programs should incorporate cooperative group activities that provide students with natural and valuable opportunities. The physical education teacher can best achieve this through which of the following strategies?

- A. Ensuring students understand the superior benefits of competing against oneself rather than against others
- B. Developing students' familiarity with and use of effective organizational and leadership traits and styles
- C. Ensuring students understand the structure and dynamics of groups and how to best work within that setting
- D. Developing in students a variety of positive social skills, attitudes, and behaviors

Answer

Option D is correct because developing a variety of positive social skills, attitudes, and behaviors in a physical education setting best embodies cooperative learning among students. **Options A, B, and C are incorrect** because they do not reflect or help to achieve appropriate cooperative learning strategies within a physical education setting.

46. A high school administrator has decided to focus on incorporating physical education across all academic disciplines for the upcoming school year. Which of the following is the most appropriate strategy for executing the plan?

- A. Having physical education teachers give fifteen-minute presentations during planning periods about the benefits of physical activity and academic success
- B. Asking outstanding senior athletes to explain to teachers how being physically fit has helped them throughout their high school years
- C. Using planning periods as a time for teachers to co-plan units incorporating physical activity throughout the disciplines
- D. Showing a presentation during back-to-school night that encourages students and parents to become aware of the benefits of physical education

Answer

Option C is correct because representatives from each discipline can best work together during planning periods to integrate units across curriculums. **Option A is incorrect** because it does not establish a relationship between subjects. **Option B is incorrect** because student athletes speaking about fitness has nothing to do with cross-curricular teaching strategies. **Option D is incorrect** because a presentation about the awareness of physical education does not achieve cross-curriculum integration.

Competency 013—The teacher understands legal issues and responsibilities of physical education teachers in relation to supervision, planning and instruction, safety, first aid and risk management.

47. A portion of Texas Senate Bill 530 mandates that all students in Texas take a fitness test. How often must each student take a fitness test?

- A. Once every six weeks
- B. Once every nine weeks
- C. Twice a semester
- D. Once a year

Answer

Option D is correct because according to Texas Senate Bill 530, students in grades 3–12 are required to undergo a yearly fitness test. **Options A, B, and C are incorrect** because Texas Senate Bill 530 only requires fitness testing once a year.

48. Which of the following teaching practices is most likely to ensure that a physical education teacher receives legal protection against a lawsuit that might arise from a student who becomes injured in class?

- A. Using written lesson plans that feature curriculum activities appropriate for the age and skill level of the students
- B. Regularly attending in-service and staff development programs to learn about innovative physical activities and techniques
- C. Ensuring that the goals and objectives of the physical education program incorporate the educational mission and goals of the school
- D. Ensuring that general rules for student behavior and participation in physical activities are prominently posted

Answer

Option A is correct because by using written lesson plans that feature curriculum activities appropriate for the age and skill level of the students, the teacher has a documented reference of appropriate and safe practices that are being followed during class if a student becomes injured in class. **Option B is incorrect** because professional development does not document safe and appropriate learning. **Options C and D are incorrect** because incorporating the mission and goals of the school into goals and objectives of a program or posting general participation and behavior rules does not legally protect the teacher in the event a student is injured during class.

49. Which of the following statements is the most accurate interpretation of Title IX of the Education Amendments of 1972 as it pertains to sports and physical education?

- A. Physical education teachers are required to modify lesson plans to accommodate students with disabilities.
- B. Males and females must have an equal opportunity to participate in sports and physical education in any school or entity receiving federal financial assistance.
- C. The government must provide equal sports and physical education funding to all of the school districts within a state.
- D. Coaches must allow eligible players who are passing all academic subjects to participate in school sports.

Answer

Option B is correct because Title IX of the Education Amendments of 1972 states that males and females must have an equal opportunity to participate in sports and physical education in any school or entity receiving federal financial assistance. **Option A is incorrect** because accommodating students with disabilities is covered in Section 504 of the Rehabilitation Act of 1973. **Option C is incorrect** because funding of sports and physical education comes from state, local and federal government, which may vary between school districts. **Option D is incorrect** because rules and regulations for participation in school sports are established by the school district.

50. An elementary school has created a policy that prohibits students from using physical education or playground equipment unless a teacher is present. The primary reason for the policy is to reduce the risk of

- A. practice-restriction violations.
- B. curriculum deviations.
- C. equipment damage.
- D. student injury.

Answer

Option D is correct because the school wants to limit liability of injury because of misuse of the equipment.
Options A and B are incorrect because the school would not have any problems with either of these issues.
Option C is incorrect because the school is less concerned with the damage to the equipment than it is with a student being injured and a potential lawsuit stemming from the injury.