CUET-UG Physical Education Sample Paper - 15

Duration: 1 Hour **Maximum Marks: 250**

Instructions

- This paper contains a total of 50 Multiple Choice Questions.
- Each correct answer carries **+5 marks**.
- Each incorrect answer carries **-1 mark**.
- No negative marking for unattempted questions.

Passage I

Read the passage below carefully. The questions that follow (Questions 1 to 5) are based on the information provided in this text. Choose the one best answer for each question.

"The government's commitment to public health is reflected in various targeted interventions. Beyond the National Rural Health Mission, specific attention is given to the 'Accessible India' campaign, which aims to create a barrier-free environment for persons with disabilities, including Children with Special Needs (CWSN). In schools, health monitoring extends to identifying both communicable diseases, which are spread through vectors or direct contact, and non-communicable diseases (NCDs) like Asthma and Obesity, which are often linked to sedentary lifestyles. To combat nutritional deficiencies, the Mid-Day Meal scheme serves as a critical safety net. For physical educators, the challenge lies in implementing 'Inclusive Physical Education', where rules are modified to allow all children to play together regardless of their physical or intellectual capabilities. This approach not only improves physical health but also fosters social integration and psychological resilience among the youth."

Q1. Which disease mentioned in the passage is specifically linked to a sedentary lifestyle?

(A) Malaria

(B) Obesity

(C) Tuberculosis

(D) Typhoid

Q2. What is the primary goal of the 'Accessible India' campaign in the context of the passage?

(A) To provide free sports equipment to all citizens

(B) To create a barrier-free environment for persons with disabilities

(C) To increase the number of physical education teachers

(D) To build international-standard stadiums

Q3. According to the text, 'Inclusive Physical Education' involves:

(A) Creating separate sports events for CWSN only

(B) Modifying rules to allow all children to participate together

(C) Focusing only on elite athletes for school teams

(D) Removing physical education from the school curriculum

Q4. Which of the following is described as a 'safety net' against nutritional deficiencies?

(A) Accessible India Campaign

(B) Fit India Movement

(C) Mid-Day Meal Scheme

(D) Khelo India Program

Q5. Based on the passage, the social benefit of inclusive education is:

(A) Reducing the cost of sports equipment

(B) Fostering social integration and psychological resilience

(C) Improving school grades in mathematics

(D) Eliminating the need for doctors in schools

Passage II

Read the passage below carefully. The questions that follow (Questions 6 to 10) are based on the information provided in this text. Choose the one best answer for each question.

"The integration of psychology into sports training has revolutionized performance analysis. Coaches now use the Big Five model to assess traits like 'Agreeableness' and 'Neuroticism'. While an athlete with high agreeableness might be a great team player, high neuroticism might require specialized stress-management interventions. Motivation remains a key driver; while extrinsic factors like trophies and fame are common, long-term success is often rooted in 'Intrinsic Motivation', where the athlete finds purpose in the mastery of a skill. Furthermore, the management of 'Aggression' is vital. Coaches distinguish between 'Hostile Aggression', driven by anger, and 'Assertive Behavior', which is the use of legitimate physical force within the rules of the game without intent to harm. Sheldon's Somatotypes also play a role in talent identification; an Ectomorph, with a lean and light frame, is often steered toward endurance sports like marathon running, whereas a Mesomorph is favored for strength-based disciplines."

Q6. According to the passage, an athlete who is lean and light-framed belongs to which Somatotype?

(A) Endomorph

(B) Mesomorph

(C) Ectomorph

(D) Ambivert

Q7. How does the passage define 'Assertive Behavior' in sports?

(A) Forceful behavior with the intent to injure

(B) Legitimate physical force within the rules without intent to harm

(C) Verbal abuse directed at the coach

(D) Avoiding all physical contact during a match

Q8. According to the text, what is the prerequisite for long-term success in sports?

(A) High Hostile Aggression

(B) Intrinsic Motivation and mastery of skill

(C) High level of Neuroticism

(D) Exclusively extrinsic rewards

Q9. Which Big Five trait is associated with being a "great team player" according to the passage?

(A) Openness

(B) Neuroticism

(C) Agreeableness

(D) Conscientiousness

Q10. The passage suggests that an athlete with high 'Neuroticism' would likely need:

(A) More physical strength training

(B) Stress-management interventions

(C) Nutritional supplements

(D) More extrinsic rewards

Q11. According to Jung's classification, an 'Extrovert' is a person who:

(A) Avoids social gatherings

(B) Is outgoing and gains energy from being around others

(C) Prefers individual sports like solo hiking

(D) Is highly anxious and emotionally unstable

Q12. Which of the 'Big Five' traits describes an athlete who is creative, curious, and willing to experiment with new tactics?

(A) Conscientiousness

(B) Openness to Experience

(C) Agreeableness

(D) Extraversion

Q13. When a basketball player uses their body to shield the ball from a defender (forceful but within rules), this is an example of:

(A) Hostile Aggression

(B) Instrumental Aggression

(C) Neuroticism

(D) Introversion

Q14. A student participating in a sport purely to receive a grade or a certificate is an example of:

(A) Intrinsic Motivation

(B) Extrinsic Motivation

(C) Self-Actualization

(D) Achievement Motivation

Q15. Sheldon's 'Endomorph' somatotype is characterized by which physical trait?

(A) Long, thin limbs and low body fat

(B) Broad shoulders and a narrow waist

(C) A round body shape and high body fat percentage

(D) High muscular density and low height

Q16. What is the total duration of a professional Men's Kabaddi match (excluding half-time)?

(A) 30 minutes

(B) 40 minutes

(C) 60 minutes

(D) 90 minutes

Q17. In Cricket, the distance between the two sets of wickets is:

(A) 20 yards

(B) 22 yards

(C) 24 yards

(D) 25 yards

Q18. The 'Lona' is a scoring term used in which of the following games?

(A) Hockey

(B) Football

(C) Kabaddi

(D) Handball

Q19. In the 12 stages of Suryanamaskar, which pose follows 'Ashtanga Namaskara'?

(A) Tadasana

(B) Bhujangasana

(C) Ashwa Sanchalanasana

(D) Padahastasana

Q20. Which Asana is recommended specifically to correct the postural deformity of 'Kyphosis'?

(A) Chakrasana (Wheel Pose)

(B) Vajrasana

(C) Shavasana

(D) Gomukhasana

Q21. The Yogic Kriya 'Trataka' is primarily used to improve:

(A) Digestion

(B) Concentration and Eye Health

(C) Lung Capacity

(D) Flexibility of the spine

Q22. Which type of Pranayama involves making a sound like a humming bee?

(A) Ujjayi

(B) Bhramari

(C) Sheetkari

(D) Anulom Vilom

Q23. The practice of 'Nauli' Kriya involves the movement of which body part?

(A) The tongue

(B) The abdominal muscles

(C) The eyes The nasal passage

Q24. Which vitamin is fat-soluble and essential for blood clotting?

(A) Vitamin C

(B) Vitamin B12

(C) Vitamin K

(D) Vitamin A

Q25. 'Flat Foot' is a deformity where which part of the foot is missing?

(A) The heel

(B) The longitudinal arch

(C) The toes

(D) The ankle bone

Q26. An 'Oblique Fracture' is characterized by a break that is:

(A) Vertical

(B) Diagonal/Slanted

(C) Horizontal

(D) Shattered into many pieces

Q27. Which mineral is essential for the formation of Hemoglobin in the blood?

(A) Calcium

(B) Phosphorus

(C) Iron

(D) Magnesium

Q28. 'Bow Legs' is a postural deformity clinically known as:

(A) Genu Valgum

(B) Genu Varum

(C) Scoliosis

(D) Lordosis

Q29. A 'Stress Fracture' is most likely to be caused by:

(A) A single heavy blow to the bone

(B) Repetitive impact and overuse

(C) Lack of Vitamin C

(D) Genetic factors from birth

Q30. The 'Dronacharya Award' carries a cash prize and a bronze statuette of which historical figure?

(A) Arjuna

(B) Dronacharya

(C) Lord Krishna

(D) Eklavya

Q31. Which award is the highest honor for a university's sports performance in India?

(A) Arjuna Award

(B) Major Dhyan Chand Khel Ratna

(C) Maulana Abul Kalam Azad (MAKA) Trophy

(D) Dronacharya Award

Q32. What is the primary role of a 'Sports Biomechanist'?

(A) To treat psychological disorders

(B) To analyze human movement and improve sports technique using physics

(C) To manage the finances of a sports club

(D) To prescribe diets for athletes

Q33. The 'National Sports Day' in India is celebrated on 29th August to honor the birth anniversary of:

(A) Milkha Singh

(B) Major Dhyan Chand

(C) Sachin Tendulkar

(D) PT Usha

Q34. Which training method involves alternating periods of high-intensity work with periods of low-intensity recovery?

(A) Continuous Training

(B) Interval Training

(C) Isometric Training

(D) Static Stretching

Q35. The 'Pliometric' training method is most effective for developing:

(A) Maximum Flexibility

(B) Explosive Power

(C) Aerobic Endurance

(D) Static Balance

Q36. Which type of stretching is performed with a bounce or jerky movement (and is generally discouraged for beginners)?

(A) Static Stretching

(B) PNF Stretching

(C) Ballistic Stretching

(D) Dynamic Stretching

Q37. Strength training using free weights (dumbbells) where the muscle shortens and lengthens is called:

(A) Isotonic Exercise

(B) Isometric Exercise

(C) Isokinetic Exercise

(D) Flexibility Exercise

Q38. The 'Sit and Reach Test' is the most common way to measure the flexibility of which body part?

(A) Shoulders and Neck

(B) Lower back and Hamstrings

(C) Wrists and Fingers

(D) Ankles

Q39. The 'Harvard Step Test' is used to measure:

(A) Cardiovascular Fitness/Endurance

(B) Agility

(C) Reaction Time

(D) Upper body strength

Q40. In the 'Rikli & Jones' battery, the 'Arm Curl Test' measures:

(A) Lower body strength

(B) Upper body strength and endurance

(C) Aerobic capacity

(D) Balance

Q41. Which class of lever is represented by a person standing on their tiptoes (where the ball of the foot is the fulcrum)?

(A) First Class Lever

(B) Second Class Lever

(C) Third Class Lever

(D) Fourth Class Lever

Q42. Newton's Second Law is also known as the Law of:

(A) Inertia

(B) Acceleration

(C) Action-Reaction

(D) Gravity

Q43. Tidal Volume is defined as the:

(A) Total capacity of the lungs

(B) Amount of air inhaled or exhaled during a normal breath

(C) Maximum amount of air that can be exhaled after a deep breath

(D) Air remaining in the lungs after forceful exhalation

Q44. Regular exercise leads to an increase in 'Stroke Volume'. This means the heart:

(A) Beats faster at rest

(B) Pumps more blood per single beat

(C) Pumps less blood to the muscles

(D) Stops beating for short intervals

Q45. Which of the following is a symptom of 'Scoliosis'?

(A) A rounded upper back

(B) An inward curve of the lower back

(C) A sideways (lateral) curvature of the spine

(D) Knees touching each other

Q46. What is the main source of energy for high-intensity, short-duration activities like a 100 m sprint?

(A) Fats

(B) Carbohydrates (Glucose)

(C) Vitamins

(D) Fiber

Q47. The 'Big Five' trait 'Extraversion' is characterized by:

(A) Self-discipline

(B) Sociability and assertiveness

(C) Anxiety and moodiness

(D) Creativity and imagination

Q48. Which Kriya is used specifically for cleansing the stomach using lukewarm saline water (often called the 'tiger action')?

(A) Jala Neti

(B) Vaman Dhauti (Kunjal)

(C) Kapalbhati

(D) Trataka

Q49. Which of the following is a micronutrient that prevents 'Rickets'?

(A) Vitamin C

(B) Vitamin D

(C) Protein

(D) Iron

Q50. The 'Deaflympics' are organized for athletes with:

(A) Visual impairment

(B) Hearing impairment

(C) Intellectual disability

(D) Physical disability

Detailed Solutions

Q1.

Solution

Concept:

Non-communicable diseases (NCDs) are health conditions that are not transmissible directly from one person to another. They are often referred to as "lifestyle diseases" because their onset is frequently linked to behavioral factors such as physical inactivity (sedentary behavior), poor diet, and tobacco use. In the context of school health and physical education, identifying these early is crucial for long-term wellness.

Solution:

1. According to the passage, health monitoring in schools helps in identifying diseases linked to "sedentary lifestyles."
2. The text explicitly mentions 'Asthma' and 'Obesity' as examples of non-communicable diseases (NCDs) associated with this lack of movement.
3. Obesity occurs when there is an energy imbalance—calories consumed exceed calories expended through physical activity. A sedentary lifestyle (sitting for long periods, lack of exercise) is a primary driver of this condition in the modern student population.
4. Malaria (A), Tuberculosis (C), and Typhoid (D) are all communicable diseases. Malaria is spread by mosquitoes, Tuberculosis by airborne bacteria, and Typhoid through contaminated food and water.
5. These three require medical intervention to stop the spread of pathogens, whereas Obesity primarily requires lifestyle changes, including increased physical activity and dietary management.
6. Therefore, based on the text's classification, Obesity is the correct answer linked to sedentary habits.

Final Answer: Obesity is the disease linked to a sedentary lifestyle.

Answer: (B)

Q2.

Solution

Concept:

The 'Accessible India' Campaign (Sugamya Bharat Abhiyan) is a nationwide flagship campaign launched by the Department of Empowerment of Persons with Disabilities. Its core philosophy is that "accessibility" is a prerequisite for persons with disabilities to live independently and participate fully in all aspects of life.

Solution:

1. The passage introduces the 'Accessible India' campaign as a government intervention for public health and empowerment.
2. It specifically states the mission "aims to create a barrier-free environment for persons with disabilities, including Children with Special Needs (CWSN)."
3. A "barrier-free environment" refers to making public spaces, transport, and information/communication technologies reachable and usable for everyone, such as adding ramps, braille signs, or elevators.
4. Option (A) is incorrect as the mission is about infrastructure and access, not just distributing equipment.
5. Option (C) and (D) are related to the broader field of physical education and sports infrastructure but are not the specific primary goal of this particular campaign as described in the text.
6. This campaign ensures that a student with a physical disability can actually reach the playground or the classroom without physical hurdles.

Final Answer: To create a barrier-free environment for persons with disabilities.

Answer: (B)

Q3.

Solution

Concept:

Inclusive Physical Education (IPE) is an approach where students with and without disabilities learn and play together in the same environment. It moves away from "segregation" (putting CWSN in separate classes) toward "integration" and "inclusion," where the curriculum and environment are adapted to the needs of every learner.

Solution:

1. The passage defines the challenge for physical educators as "implementing 'Inclusive Physical Education', where rules are modified to allow all children to play together."
2. The core logic of inclusion is that a disability should not be a reason for exclusion from the general peer group.
3. By modifying rules (e.g., allowing a child in a wheelchair to have two bounces in tennis or reducing the size of the court), educators ensure that everyone can participate regardless of their capabilities.
4. Option (A) refers to 'Segregated' sports, which is the opposite of inclusion.
5. Option (C) focuses on 'Elite' performance, which is exclusionary in nature.
6. Option (D) is logically incorrect as the goal is to expand participation in PE, not remove it.
7. Therefore, the modification of rules for collective participation is the hallmark of Inclusive PE.

Final Answer: Modifying rules to allow all children to participate together.

Answer: (B)

Q4.

Solution

Concept:

Nutritional security is a significant concern in the Indian education system. A "safety net" refers to a social welfare program that prevents vulnerable sections of society from falling below a certain level of well-being—in this case, preventing malnutrition among school children.

Solution:

1. The passage discusses the need to combat "nutritional deficiencies" among the youth.
2. It explicitly names the "Mid-Day Meal scheme" as the "critical safety net" to address this issue.
3. The Mid-Day Meal (MDM) ensures that every child attending a government or government-aided school receives at least one nutritious, cooked meal a day.
4. This not only improves the child's health and ability to focus in class but also acts as an incentive for regular school attendance.
5. Options (A), (B), and (D) represent campaigns related to accessibility, fitness, and sports talent identification, respectively, but they do not primarily provide daily nutritional meals to students.
6. Thus, in the context of school-based health interventions for nutrition, the MDM scheme is the primary answer.

Final Answer: Mid-Day Meal Scheme.

Answer: (C)

Q5.

Solution

Concept:

The benefits of Physical Education are not limited to the body (physiological); they also extend to the mind (psychological) and the community (social). Inclusive education specifically targets these "soft" benefits to create a more empathetic and resilient society.

Solution:

1. Toward the end of the passage, the author describes the broader impacts of the inclusive approach.
2. It states that inclusive physical education "not only improves physical health but also fosters social integration and psychological resilience among the youth."
3. 'Social integration' means breaking down stigmas associated with disability and allowing children of all backgrounds to form bonds.
4. 'Psychological resilience' refers to the mental strength gained by overcoming challenges and participating in group activities.
5. Option (A) is a financial/logistical benefit, (C) is an academic side-effect, and (D) is an impossible outcome as medical professionals are always necessary.
6. Therefore, based on the text provided, the correct social benefits are integration and resilience.

Final Answer: Fostering social integration and psychological resilience.

Answer: (B)

Q6.

Solution

Concept:

William Sheldon's somatotyping system is a method of classifying the human physique into three categories: Endomorphy, Mesomorphy, and Ectomorphy. Each type is defined by specific physical characteristics. In the context of sports talent identification, these physical traits are often mapped to specific athletic disciplines where that particular body shape provides a mechanical or physiological advantage.

Solution:

1. The passage identifies the 'Ectomorph' as having a "lean and light frame."
2. Physically, Ectomorphs are characterized by long limbs, narrow shoulders, and very low body fat and muscle mass. This "lightweight" build makes them naturally suited for endurance sports like marathon running or high jump, where a high power-to-weight ratio is less critical than aerobic efficiency and low body mass.
3. A 'Mesomorph' (B), as mentioned in the text, is favored for strength-based disciplines because they have a naturally muscular and athletic build with broad shoulders and a narrow waist.
4. An 'Endomorph' (A) is characterized by a rounder body shape with a higher percentage of body fat and is typically better suited for power sports like shot put or heavyweight wrestling.
5. 'Ambivert' (D) is a psychological term describing a balance between introversion and extroversion; it has no relation to physical body typing.
6. Therefore, according to the specific description provided in the passage, the lean and light-framed athlete is an Ectomorph.

Final Answer: An athlete who is lean and light-framed is an Ectomorph.

Answer: (C)

Q7.

Solution

Concept:

In sports psychology, it is crucial to differentiate between different types of forceful behaviors. While the general public often uses the word "aggression" for any hard play, professionals distinguish between 'Hostile Aggression', 'Instrumental Aggression', and 'Assertive Behavior'. Assertive behavior is often seen as the ideal state for a competitive athlete.

Solution:

1. The passage defines 'Assertive Behavior' as the "use of legitimate physical force within the rules of the game without intent to harm."
2. Key elements of assertion include: it is goal-directed, it follows the formal rules of the sport, it does not involve an intent to injure the opponent, and it is usually performed with high intensity and effort.
3. Option (A) describes 'Hostile Aggression', where the primary goal is to cause injury out of anger or frustration.
4. Option (C) refers to verbal aggression or lack of emotional control, which is unsportsmanlike.
5. Option (D) describes passive behavior, which is usually not effective in competitive sports.
6. Examples of assertive behavior include a clean but powerful shoulder charge in rugby or a forceful block in basketball; these are physically demanding and "aggressive" in appearance but are legally executed within the spirit of the game.

Final Answer: Assertive behavior is legitimate physical force within the rules without intent to harm.

Answer: (B)

Q8.

Solution

Concept:

Motivation is the "why" behind an athlete's behavior. Intrinsic motivation refers to doing an activity for its inherent satisfaction rather than for some separable consequence. When an athlete is intrinsically motivated, they are moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards.

Solution:

1. The passage states that while trophies and fame (extrinsic factors) are common, "long-term success is often rooted in 'Intrinsic Motivation'."
2. Intrinsic motivation is closely linked to the concept of "mastery of a skill." Athletes who are driven by the desire to improve their own performance and perfect their craft are more resilient to failure than those who only care about winning trophies.
3. Extrinsic rewards (D) can provide a short-term boost but often lead to burnout if the internal passion for the sport is missing.
4. High Hostile Aggression (A) and Neuroticism (C) are generally detrimental to long-term performance as they lead to penalties, loss of focus, and emotional instability.
5. Therefore, the passage highlights that finding purpose in the mastery of the skill itself is the foundation for a sustainable and successful sporting career.

Final Answer: Long-term success is rooted in Intrinsic Motivation and mastery of skill.

Answer: (B)

Q9.

Solution

Concept:

The Big Five model of personality (OCEAN) is used to predict how individuals will behave in team settings. 'Agreeableness' is a personality trait manifesting itself in individual behavioral characteristics that are perceived as kind, sympathetic, cooperative, warm, and considerate.

Solution:

1. The passage explicitly mentions that coaches use the Big Five model and identifies 'Agreeableness' as a trait where the athlete might be a "great team player."
2. Agreeable athletes are easier to coach because they are more likely to follow instructions and prioritize the team's goals over their individual glory. They contribute to a positive team climate and are effective at conflict resolution.
3. 'Neuroticism' (B) is associated with anxiety and would likely hinder team cohesion if not managed.
4. 'Openness' (A) relates to creativity, and 'Conscientiousness' (D) relates to discipline and organization. While both are valuable, they are not specifically highlighted in the text as the primary trait for being a "team player."
5. In high-performance team sports like Football or Hockey, having a core group of highly agreeable players is essential for maintaining chemistry during long, high-stress seasons.

Final Answer: Agreeableness is the trait associated with being a great team player.

Answer: (C)

Q10.

Solution

Concept:

Neuroticism is a long-term tendency to be in a negative or anxious emotional state. It is not a "flaw" but a personality dimension. In sports, high neuroticism can lead to "choking" under pressure, over-analyzing situations, or becoming overly distressed by minor setbacks.

Solution:

1. The passage notes that "high neuroticism might require specialized stress-management interventions."
2. Stress management for an athlete high in neuroticism might include techniques like cognitive-behavioral therapy (CBT), progressive muscle relaxation, visualization, or mindfulness.
3. These interventions help the athlete stay focused on the task rather than their internal emotional state.
4. Option (A) is incorrect because neuroticism is a psychological trait, not a physical deficiency that can be cured by strength training.
5. Option (C) and (D) are irrelevant to the management of emotional instability.
6. By providing these psychological tools, coaches can help highly sensitive or anxious athletes perform at their peak level, ensuring that their talent is not wasted due to pre-match nerves or in-game anxiety.

Final Answer: An athlete with high Neuroticism would need stress-management interventions.

Answer: (B)

Q11.

Solution

Concept:

Carl Jung's theory of personality types is centered on the concept of 'Psychological Orientation'. He proposed that people generally fall into two categories—Introverts and Extroverts—based on where they direct their energy and how they interact with their environment. In sports, these orientations often dictate an athlete's preference for team dynamics versus individual preparation.

Solution:

1. According to Jung, an 'Extrovert' is an individual whose psyche is oriented toward the external world.
2. They are characterized by being outgoing, talkative, and social. They tend to gain energy from being around other people and participating in group activities.
3. In a sporting context, extroverts often thrive in team sports like Football, Basketball, or Cricket, where constant communication and social interaction are part of the game.
4. Option (A) and (C) describe 'Introverts', who prefer solitude, internal reflection, and individual tasks.
5. Option (D) describes 'Neuroticism', which is a trait from the Big Five model and is not the defining characteristic of an extrovert in Jung's system.
6. Therefore, the hallmark of an extrovert is being outgoing and energized by social environments.

Final Answer: An extrovert is outgoing and gains energy from others.

Answer: (B)

Q12.

Solution

Concept:

The 'Big Five' personality trait of 'Openness to Experience' (often simply called Openness) measures an individual's level of creativity and desire for knowledge. In physical education and high-performance coaching, identifying athletes high in openness can be beneficial for tactical innovation and psychological adaptability.

Solution:

1. 'Openness to Experience' involves traits such as active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, and intellectual curiosity.
2. An athlete who is high in openness is generally more "coachable" when it comes to learning complex new skills or trying out non-traditional strategies because they lack a rigid adherence to "the old way" of doing things.
3. Conscientiousness (A) is about being disciplined and organized, but not necessarily creative.
4. Agreeableness (C) is about being cooperative and kind.
5. Extraversion (D) is about sociability.
6. Because the question specifically highlights being "creative," "curious," and "willing to experiment," Openness is the correct psychological trait.

Final Answer: Openness to Experience describes a creative and curious athlete.

Answer: (B)

Q13.

Solution

Concept:

Instrumental Aggression is a learned behavior where the primary goal is not to cause pain, but to achieve a non-aggressive goal, such as gaining possession of a ball or preventing a score. While it involves physical force and can be intense, the intent is functional and tied to the objectives of the game.

Solution:

1. In the scenario of a basketball player shielding the ball, the "force" used is directed toward maintaining possession—a tactical goal.
2. Since the player is using their body within the framework of the rules and the primary intent is not to injure the defender but to protect the ball, it falls under 'Instrumental Aggression'.
3. Hostile Aggression (A) would be if the player intentionally elbowed the defender in the face out of anger.
4. Neuroticism (C) and Introversion (D) are personality traits, not behavioral categories of aggression.
5. Instrumental aggression is common in contact sports and is often encouraged by coaches as "playing hard" or "being physical," provided it remains within the legal limits of the sport.

Final Answer: Shielding the ball forcefully but legally is Instrumental Aggression.

Answer: (B)

Q14.

Solution

Concept:

Extrinsic Motivation occurs when an individual is driven to perform a behavior or engage in an activity to earn a reward or avoid punishment. In this case, the activity is a means to an end, rather than the end itself. In school environments, extrinsic factors are powerful tools but must be balanced with intrinsic interest.

Solution:

1. When a student participates in a sport specifically to "receive a grade or a certificate," the motivation is coming from an external source—the tangible reward.
2. The student is not playing because they find the sport inherently fun or satisfying (which would be intrinsic), but because they value the external outcome.
3. Intrinsic Motivation (A) involves internal satisfaction.
4. Self-Actualization (C) is the highest level of Maslow's hierarchy, referring to reaching one's full potential.
5. Achievement Motivation (D) is a general drive to succeed but is usually categorized into intrinsic or extrinsic based on the source of the reward.
6. Therefore, a grade or certificate is a classic example of an extrinsic motivator.

Final Answer: Participating for a grade is an example of Extrinsic Motivation.

Answer: (B)

Q15.

Solution

Concept:

Sheldon's Somatotypes are based on the embryonic development of different layers of the body. The 'Endomorph' type is named after the 'endoderm' (the inner layer of the embryo), which develops into the digestive tract. Consequently, the physical build is centered on the digestive system and body mass.

Solution:

1. An Endomorph is characterized by a "round body shape and high body fat percentage."
2. Physically, they tend to have shorter limbs, a large stomach area, and a lack of muscle definition. They find it very easy to gain weight but difficult to lose fat.
3. Option (A) describes 'Ectomorphs' (thin/lean).
4. Option (B) describes 'Mesomorphs' (athletic/muscular).
5. Option (D) describes a specific muscular build but doesn't capture the essence of the endomorph classification.
6. In sports, endomorphs often excel in power-based activities where a low center of gravity and sheer mass are beneficial, such as sumo wrestling or the center position in certain field sports.

Final Answer: An Endomorph has a round body and high body fat.

Answer: (C)

Q16.

Solution

Concept:

The duration of a sports match is governed by international federations to ensure fairness and standard physical demands. For Kabaddi, the International Kabaddi Federation (IKF) sets the timing based on the gender and age category of the participants. A match is divided into two halves with a break in between.

Solution:

1. A professional Men's Kabaddi match consists of two halves, each lasting 20 minutes.
2. Therefore, the total playing time, excluding the half-time break, is 20 + 20 = 40 minutes.
3. For Women and Juniors, the duration is slightly shorter, consisting of two halves of 15 minutes each (total 30 minutes).
4. The half-time interval for men is usually 5 minutes, though this is not counted in the "playing duration."
5. If the score is tied at the end of 40 minutes in a knockout match, "Golden Raid" or extra time rules may apply.
6. Option (A) 30 minutes is for the Women's category, and Option (C) 60 minutes is more common in sports like Football or Hockey.
7. Since the question asks for professional Men's Kabaddi, 40 minutes is the accurate regulatory duration.

Final Answer: The total duration of a professional Men's Kabaddi match is 40 minutes.

Answer: (B)

Q17.

Solution

Concept:

Field measurements in Cricket are highly standardized. The central strip of the cricket field between the wickets is known as the "pitch." The length of the pitch is defined by the distance between the two sets of wickets (stumps), which determines the bowling and running distance.

Solution:

1. According to the Laws of Cricket maintained by the MCC, the length of the pitch is exactly 22 yards (20.12 meters).
2. This measurement is taken from one set of stumps to the opposite set of stumps.
3. The width of the pitch is 10 feet (3.05 meters).
4. It is important to distinguish this from the distance between the "popping creases" or the total length of the mown area.
5. Options (A), (C), and (D) are incorrect as they do not align with the international standard for pitch length.
6. This 22-yard distance is a fundamental constant in the game, influencing everything from bowling speed to the timing of a batsman's run.

Final Answer: The distance between the two sets of wickets in Cricket is 22 yards.

Answer: (B)

Q18.

Solution

Concept:

Scoring in Kabaddi involves not just individual points for touches and catches, but also "bonus" points for collective team performance. The 'Lona' is a specific high-value point system awarded when an entire opposing team is declared "out."

Solution:

1. In Kabaddi, when a team manages to put the entire opposing team out, they earn a 'Lona'.
2. A 'Lona' awards 2 extra points to the scoring team in addition to the points earned for the individual touches or catches that led to the "all-out."
3. After a Lona is scored, the opposing team is revived and returns to the court to continue the game.
4. In Hockey (A) and Football (B), points are scored only through goals.
5. In Handball (D), points are also scored through goals, and there is no concept of a "Lona."
6. Therefore, the term 'Lona' is unique and fundamental to the scoring structure of Kabaddi.

Final Answer: 'Lona' is a scoring term used in Kabaddi.

Answer: (C)

Q19.

Solution

Concept:

Suryanamaskar is a fluid sequence of 12 postures performed in a specific, rhythmic order coordinated with the breath. Each posture acts as a transition to the next, ensuring a full-body stretch and strengthening. Understanding the sequence is essential for both practice and academic evaluation.

Solution:

1. The 6th stage of Suryanamaskar is 'Ashtanga Namaskara' (Salute with eight parts).
2. The 7th stage, which immediately follows it, is 'Bhujangasana' (Cobra Pose).
3. In this transition, the practitioner slides the chest forward and raises it, mimicking the hood of a cobra while keeping the lower body on the floor.
4. Tadasana (A) is the starting/ending pose.
5. Ashwa Sanchalanasana (C) is the 4th and 9th stage.
6. Padahastasana (D) is the 3rd and 10th stage.
7. Moving from the "eight-limbed salute" (6th) into the "cobra pose" (7th) is the standard progression in the traditional Hatha Yoga sequence.

Final Answer: Bhujangasana follows Ashtanga Namaskara in Suryanamaskar.

Answer: (B)

Q20.

Solution

Concept:

Postural deformities like 'Kyphosis' (Hunchback) are characterized by an excessive outward curvature of the thoracic spine (upper back). Corrective Asanas for this condition focus on "counter-stretching"—opening the chest and arching the back in the opposite direction.

Solution:

1. Chakrasana, or the Wheel Pose, is a deep back-bending posture.
2. In this pose, the practitioner lies on their back and pushes the body upward into an arch supported by the hands and feet.
3. This position drastically stretches the thoracic region and the chest muscles (pectorals), which are usually tight in people with Kyphosis.
4. By strengthening the spinal extensors and opening the front of the body, it helps pull the shoulders back and reduce the "hump" associated with Kyphosis.
5. Vajrasana (B) and Shavasana (C) are meditative/relaxation poses and do not provide the necessary spinal extension.
6. Gomukhasana (D) is excellent for shoulder flexibility but is less effective than Chakrasana for total thoracic correction.
7. Therefore, Chakrasana is the most powerful corrective asana for Kyphosis.

Final Answer: Chakrasana is recommended to correct Kyphosis.

Answer: (A)

Q21.

Solution

Concept: Trataka is one of the *Shatkarmas* (six purification techniques) mentioned in Hatha Yoga. Unlike other Kriyas that focus on internal physical cleansing (like Neti or Dhauti), Trataka is a "mental-physical" cleansing technique that bridges the gap between physical purification and meditation (*Dhyana*).

Solution: 1. Trataka involves the practice of steady gazing at a particular point or object without blinking. The most common form is 'Jyoti Trataka', where one gazes at a candle flame in a dark room.

2. Physically, this practice strengthens the eye muscles and cleanses the tear ducts, which is believed to improve eyesight and resolve certain minor vision issues.

3. Mentally, the primary benefit is the development of intense concentration (*Ekagrata*). By fixing the gaze, the fluctuations of the mind are reduced, leading to mental clarity and stillness.

4. Digestion (A) is the focus of Dhauti or Nauli. Lung capacity (C) is the domain of Pranayama. Flexibility (D) is achieved through Asanas.

5. Therefore, Trataka is uniquely identified with improving concentration and eye health.

Final Answer: Trataka is primarily used to improve Concentration and Eye Health.

Answer: (B)

Q22.

Solution

Concept: Pranayama is the formal practice of controlling the breath, which is the source of our *prana*, or vital life force. Different Pranayamas use specific sounds, patterns, and nasal channels to achieve varying physiological and psychological effects on the nervous system.

Solution: 1. Bhramari Pranayama is derived from the Sanskrit word 'Bhramar', which means a black Indian bee.

2. During this practice, the practitioner closes their ears with their thumbs and eyes with their fingers (Shanmukhi Mudra) and exhales while producing a deep, steady "mmm" sound.

3. This sound creates a resonance or vibration in the brain and the skull, which has a deeply soothing effect on the nervous system. It is highly recommended for reducing stress, anxiety, and high blood pressure.

4. Ujjayi (A) involves a constriction of the throat to make an "ocean" sound. Sheetkari (C) is a cooling breath taken through the teeth. Anulom Vilom (D) is alternate nostril breathing without specific sound production.

5. Thus, the "humming bee" sound is the definitive characteristic of Bhramari.

Final Answer: Bhramari Pranayama involves making a sound like a humming bee.

Answer: (B)

Q23.

Solution

Concept: Nauli is considered one of the most difficult and powerful cleansing techniques in Hatha Yoga. It involves the isolation and churning of the abdominal muscles, specifically the *Rectus Abdominis*. It is used to stimulate the digestive fire (*Jatharagni*) and massage the internal organs.

Solution: 1. The practice of Nauli requires the practitioner to stand with knees bent, lean forward, and perform a full exhalation (*Bahya Kumbhaka*).

2. The abdominal muscles are then drawn in and up. The 'Nauli' itself involves isolating the central abdominal muscles and moving them from side to side in a wave-like or churning motion.

3. This technique provides a deep internal massage to the stomach, liver, spleen, and intestines, aiding in detoxification and relieving constipation.

4. The tongue (A) is used in 'Jihva Dhauti'. The eyes (C) are used in 'Trataka'. The nasal passage (D) is the focus of 'Neti'.

5. Since Nauli is strictly an abdominal exercise, the movement of abdominal muscles is the correct answer.

Final Answer: Nauli Kriya involves the movement of the Abdominal Muscles.

Answer: (B)

Q24.

Solution

Concept: Vitamins are organic compounds required in small amounts for various metabolic functions. They are classified into two groups: Water-soluble (B-complex and C) and Fat-soluble (A, D, E, and K). Each has a specific role in maintaining bodily integrity.

Solution: 1. Vitamin K is a fat-soluble vitamin stored in the liver and fatty tissues.

2. Its primary physiological role is the synthesis of proteins required for blood coagulation (clotting). Without Vitamin K, even minor injuries could lead to excessive bleeding because the blood would fail to thicken and form a scab.

3. Vitamin C (A) is water-soluble and helps in immunity and collagen synthesis. Vitamin B12 (B) is water-soluble and essential for nerve function. Vitamin A (D) is fat-soluble but is primarily known for vision and skin health.

4. In sports, Vitamin K is important for the recovery from internal bruising and minor vascular damage that occurs during intense physical contact.

5. Therefore, the link between blood clotting and Vitamin K is the correct scientific fact.

Final Answer: Vitamin K is fat-soluble and essential for blood clotting.

Answer: (C)

Q25.

Solution

Concept: Flat Foot (*Pes Planus*) is a postural deformity where the entire sole of the foot touches the floor when standing. In a normal foot, a distinct curve or "arch" exists along the inner side of the foot, which acts as a natural shock absorber during movement.

Solution: 1. The human foot has two main types of arches: the transverse arch and the longitudinal arch. The longitudinal arch runs from the heel to the toes along the inner edge of the foot.

2. When the muscles, tendons, or ligaments supporting this arch become weak or overstretched, the arch collapses, leading to 'Flat Foot'.

3. This condition can lead to pain in the feet, ankles, and lower back because the body loses its primary mechanism for absorbing the impact of walking or running.

4. The heel (A), toes (C), and ankle bone (D) are all present in a flat foot; it is specifically the "longitudinal arch" that is missing or significantly lowered.

5. Screening for flat foot is a standard part of physical education fitness testing, often done using the "wet footprint" test.

Final Answer: Flat Foot is a deformity where the Longitudinal Arch is missing.

Answer: (B)

Q26.

Solution

Concept: Fractures are medical conditions where there is a partial or complete break in the continuity of the bone. In clinical orthopedics and sports medicine, fractures are classified according to the "line of the break" relative to the long axis of the bone. Understanding these classifications is vital for determining the mechanism of injury and the appropriate rehabilitation protocol.

Solution: 1. An 'Oblique Fracture' occurs when the force is applied at an angle other than a right angle to the bone's axis.

2. This results in a break that is diagonal or slanted across the bone. These fractures are often unstable and can be caused by a combination of compression and twisting forces.

3. A Vertical fracture (A) runs parallel to the bone's long axis. A Transverse fracture (C) runs horizontally (at a right angle) across the bone. A Comminuted fracture (D) involves the bone shattering into multiple fragments.

4. In physical education, oblique fractures are often discussed in the context of contact sports like Football or Rugby, where players experience multi-directional impacts.

5. Because the definition of "oblique" in geometry and anatomy refers to an angle that is not a right angle, "diagonal/slanted" is the only correct description.

Final Answer: An Oblique Fracture is characterized by a diagonal or slanted break.

Answer: (B)

Q27.

Solution

Concept: Minerals are inorganic elements that originate in the earth and cannot be made by living organisms. They are essential for various physiological processes. Iron is one of the most critical "trace minerals" because of its role in the transport of oxygen throughout the body via the circulatory system.

Solution: 1. Iron is a key component of 'Hemoglobin', which is the protein in red blood cells (RBCs) responsible for binding to oxygen in the lungs and releasing it into the body's tissues and muscles.

2. Without sufficient iron, the body cannot produce enough healthy oxygen-carrying red blood cells, leading to a condition known as Iron Deficiency Anemia.

3. Calcium (A) and Phosphorus (B) are minerals primarily involved in bone and tooth formation and muscle contraction. Magnesium (D) is involved in over 300 biochemical reactions, including protein synthesis and nerve function.

4. For athletes, iron is particularly important because high-intensity exercise increases the demand for oxygen in the muscles. Low iron levels lead to early fatigue, breathlessness, and decreased athletic performance.

5. Therefore, the direct relationship between iron and hemoglobin makes (C) the correct answer.

Final Answer: Iron is essential for the formation of Hemoglobin.

Answer: (C)

Q28.

Solution

Concept: 'Bow Legs' and 'Knock Knees' are common postural deformities of the lower limbs. They represent deviations from the normal alignment of the femur (thigh bone) and the tibia (shin bone). Clinical terminology uses Latin roots to describe these deviations: 'Genu' refers to the knee, 'Valgum' refers to an inward angle, and 'Varum' refers to an outward angle.

Solution: 1. 'Bow Legs' is a condition where the knees stay wide apart even when a person stands with their feet and ankles together.

2. The clinical term for this outward bowing is 'Genu Varum'. It often results from conditions like Rickets (Vitamin D deficiency) or excessive early weight-bearing in children.

3. 'Genu Valgum' (A) is the clinical term for 'Knock Knees', where the knees touch but the ankles stay apart.

4. 'Scoliosis' (C) is a sideways curvature of the spine, and 'Lordosis' (D) is an inward curvature of the lower back.

5. Identifying these conditions is crucial in Physical Education to provide corrective exercises and prevent long-term joint damage to the hips and ankles.

Final Answer: Bow Legs is clinically known as Genu Varum.

Answer: (B)

Q29.

Solution

Concept: Unlike acute fractures that result from a single traumatic event (like a fall or a collision), a 'Stress Fracture' is a fatigue-induced injury. It represents a failure of the bone to adapt to the mechanical loads placed upon it during repetitive activities.

Solution: 1. A stress fracture is a tiny crack in a bone that develops over time.

2. It is primarily caused by "repetitive impact and overuse." This occurs when the muscles become fatigued and are no longer able to absorb the shock of the impact, transferring the stress directly to the bone.

3. This is common in "over-training" scenarios, such as long-distance runners increasing their mileage too quickly or basketball players practicing on hard surfaces without adequate rest.

4. Option (A) describes an acute fracture. Option (C) and (D) are nutritional or genetic factors that might weaken bones but are not the *direct cause* of the fracture itself.

5. Preventive measures include using proper footwear, gradual increase in training intensity, and ensuring adequate recovery time between sessions.

Final Answer: A Stress Fracture is caused by repetitive impact and overuse.

Answer: (B)

Q30.

Solution

Concept: The Dronacharya Award is the highest recognition for sports coaches in India. The visual elements of national awards are deeply symbolic, reflecting the history and mythology associated with the honor. This award emphasizes the "Guru-Shishya" (Teacher-Student) tradition which is central to Indian sports culture.

Solution: 1. The Dronacharya Award is named after Guru Drona, the royal preceptor to the Kauravas and Pandavas in the Mahabharata.

2. The physical award presented to the winners consists of a ceremonial scroll, a certificate, a cash prize, and a bronze statuette of 'Dronacharya'.

3. The statuette depicts Dronacharya, representing the wisdom and guidance that a coach provides to an athlete.

4. The Arjuna Award (A) features a statuette of Arjuna (the student). Lord Krishna (C) and Eklavya (D) are also figures from the same epic but are not the subject of the Dronacharya statuette.

5. Since the award is specifically named after and honors the legacy of the coach Dronacharya, the statuette naturally bears his likeness.

Final Answer: The Dronacharya Award carries a bronze statuette of Dronacharya.

Answer: (B)

Q31.

Solution

Concept: The Maulana Abul Kalam Azad (MAKA) Trophy is a prestigious rolling trophy instituted by the Government of India in 1956-57. It is named after India's first Education Minister. While individual awards like the Arjuna or Khel Ratna focus on personal excellence, the MAKA Trophy is unique because it evaluates the collective athletic achievement of an entire educational institution over a single academic year.

Solution: 1. The MAKA Trophy is awarded annually by the President of India to the "overall top-performing university" in inter-university tournaments.

2. The performance is calculated based on a points system that tracks the university's success across various sports in All India Inter-University competitions.

3. The Arjuna Award (A) and Major Dhyan Chand Khel Ratna (B) are individual awards for athletes, not institutions.

4. The Dronacharya Award (D) is specifically for coaches.

5. For a University to win this trophy, it must show consistent performance across a wide range of sports, rather than just excellence in one particular discipline.

6. Therefore, the MAKA Trophy is the only institutional award in the given options designed specifically for university-level sports.

Final Answer: The MAKA Trophy is the highest honor for a university's sports performance in India.

Answer: (C)

Q32.

Solution

Concept: Biomechanics is a sub-discipline of Kinesiology that applies the principles of mechanics (physics) to the study of living organisms. In physical education, sports biomechanists use technology and scientific laws to analyze how the body moves, how forces act upon the athlete, and how these factors influence performance and injury risk.

Solution: 1. A Sports Biomechanist uses tools like high-speed cameras, force plates, and sensors to "analyze human movement."

2. Their primary objective is twofold: to "improve sports technique" (e.g., helping a swimmer reduce drag or a pitcher increase velocity) and to reduce the risk of injury by ensuring movements are biomechanically sound.

3. Option (A) refers to a Sports Psychologist.

4. Option (C) refers to a Sports Manager or Administrator.

5. Option (D) refers to a Sports Nutritionist or Dietician.

6. By applying Newton's laws of motion and understanding the lever systems of the body, the biomechanist provides data-driven feedback to coaches and athletes to refine their technical execution.

Final Answer: The primary role of a Sports Biomechanist is to analyze movement and improve technique using physics.

Answer: (B)

Q33.

Solution

Concept: Commemorative days in sports are established to honor historical figures who have brought international glory to a nation. In India, the National Sports Day serves as an annual reminder of the country's rich sporting heritage and encourages the youth to adopt a healthy lifestyle.

Solution: 1. National Sports Day in India is celebrated on 29th August every year.

2. This date was chosen because it is the birth anniversary of Major Dhyan Chand, the legendary field hockey player known as "The Wizard."

3. Major Dhyan Chand helped India win three consecutive Olympic gold medals in hockey (1928, 1932, and 1936). His extraordinary stick-work and goal-scoring ability made him a global icon.

4. Milkha Singh (A) was a legendary sprinter known as "The Flying Sikh," but the day is not dedicated to him. Sachin Tendulkar (C) and PT Usha (D) are contemporary icons, but the National Sports Day tradition predates their full careers or is specifically dedicated to the historical legacy of Dhyan Chand.

5. On this day, the President of India confers the national sports awards (Khel Ratna, Arjuna, Dronacharya, etc.) at Rashtrapati Bhavan.

Final Answer: National Sports Day honors the birth anniversary of Major Dhyan Chand.

Answer: (B)

Q34.

Solution

Concept: Interval Training is a training method used to improve both aerobic and anaerobic energy systems. It is based on the "principle of recovery," suggesting that more work can be performed if it is broken into segments separated by periods of lower-intensity rest or active recovery.

Solution: 1. The defining characteristic of Interval Training is the alternation between "high-intensity work" and "low-intensity recovery."

2. For example, a runner might sprint for 400 meters at 903. Continuous Training (A) involves steady exercise without any rest periods.

4. Isometric Training (C) involves static muscle contractions without movement.

5. Static Stretching (D) is a flexibility technique, not a cardiovascular training method.

6. Interval training is highly effective for improving "speed endurance" and "VO2 max" because it allows the athlete to train at intensities that could not be sustained in a continuous manner.

Final Answer: Interval Training involves alternating high-intensity work with recovery periods.

Answer: (B)

Q35.

Solution

Concept: Plyometrics, also known as "jump training," is a specialized form of exercise used to increase muscle power. It exploits the "Stretch-Shortening Cycle" (SSC) of the muscles. This involves a rapid eccentric (lengthening) contraction followed immediately by a rapid concentric (shortening) contraction.

Solution: 1. Plyometric exercises include movements like box jumps, depth jumps, and bounding.

2. The primary goal of this training is to develop "Explosive Power." This is the ability to exert a maximal amount of force in the shortest possible time.

3. It is essential for athletes in sports that require jumping, sprinting, or sudden changes in direction (e.g., Basketball, Volleyball, Track and Field).

4. Maximum Flexibility (A) is not the goal of plyometrics; in fact, plyometrics requires pre-existing flexibility to be safe.

5. Aerobic Endurance (C) is better trained through long-duration continuous activities. Static Balance (D) involves maintaining a posture, which is the opposite of the explosive movement in plyometrics.

6. Therefore, the development of power and speed is the hallmark of plyometric training.

Final Answer: Plyometric training is most effective for developing Explosive Power.

Answer: (B)

Q36.

Solution

Concept: Flexibility is the range of motion (ROM) around a joint. Among the various methods used to develop flexibility, 'Ballistic Stretching' is the most traditional but also the most controversial. It involves using the momentum of a moving body or a limb in an attempt to force it beyond its normal range of motion.

Solution: 1. Ballistic stretching is characterized by "bouncing or jerky movements." Instead of holding a stretch (as in static stretching), the individual performs rhythmic, explosive movements to stretch the muscle.

2. While it can be useful for specific athletes who require high-velocity movements (like martial artists or gymnasts), it is generally discouraged for beginners and the general population.

3. The "bouncing" action can trigger the 'stretch reflex', a protective mechanism where the muscle contracts to prevent it from over-stretching, which significantly increases the risk of muscle tears and injury.

4. Static Stretching (A) involves a slow, constant hold. PNF Stretching (B) involves a combination of contraction and relaxation with a partner. Dynamic Stretching (D) involves controlled, fluid movements through a range of motion without the "bounce."

5. Therefore, the presence of a "bounce" or "jerk" is the definitive indicator of the ballistic method.

Final Answer: Ballistic Stretching is performed with a bounce or jerky movement.

Answer: (C)

Q37.

Solution

Concept: Muscle contractions are classified by how the muscle changes length and tension during an exercise. Isotonic exercises are the most common form of strength training in both recreational fitness and competitive athletics.

Solution: 1. The term 'Isotonic' (same tension) refers to a contraction where the muscle changes its length (either shortening or lengthening) while the resistance remains constant.

2. When you perform a bicep curl with a dumbbell, the muscle shortens to lift the weight (concentric phase) and lengthens to lower it (eccentric phase). Throughout this movement, the dumbbell's weight does not change, meaning the external tension is isotonic.

3. Isometric Exercises (B) involve tension without any change in muscle length or visible joint movement (e.g., pushing a wall).

4. Isokinetic Exercises (C) involve a constant speed of movement, which usually requires expensive, specialized electronic machinery to regulate.

5. Since free weights (dumbbells) are used and the muscle changes length through a range of motion, Isotonic is the only correct classification.

Final Answer: Strength training with free weights is called Isotonic Exercise.

Answer: (A)

Q38.

Solution

Concept: The 'Sit and Reach Test' is a staple of almost every physical fitness battery, including the SAI (Sports Authority of India) Khelo India test. It is a simple, non-invasive way to assess the flexibility of the posterior chain of the body.

Solution: 1. During the test, the participant sits on the floor with legs stretched straight out and feet flat against a box. They then lean forward as far as possible, reaching toward or past their toes.

2. This movement primarily tests the extensibility of the 'Lower back' (erector spinae) and the 'Hamstrings' (the muscles on the back of the thigh).

3. Tightness in these two areas is often linked to lower back pain and poor posture, making this test a significant health-related fitness indicator.

4. Shoulder flexibility (A) is measured by the 'Zipper' or 'Back Scratch' test. Ankle flexibility (D) is measured by goniometry or specific dorsiflexion tests.

5. Because the reach depends entirely on the hinge at the hip and the stretch in the back and thighs, lower back and hamstrings are the correct target areas.

Final Answer: The Sit and Reach Test measures the flexibility of the lower back and hamstrings.

Answer: (B)

Q39.

Solution

Concept: The Harvard Step Test is a classic field test for assessing 'Cardiovascular Fitness' or aerobic capacity. It was developed at Harvard University in the 1940s and remains popular because it requires minimal equipment—only a stopwatch and a step (bench) of a specific height.

Solution: 1. The participant steps up and down on a bench (usually 20 inches for men and 16 inches for women) at a rate of 30 steps per minute for five minutes.

2. After the exercise, the pulse rate is measured at specific intervals during the recovery period. A faster return to the resting heart rate indicates a higher level of cardiovascular efficiency.

3. Cardiovascular Endurance (A) is the ability of the heart, lungs, and blood vessels to deliver oxygen to working muscles during prolonged activity.

4. Agility (B) and Reaction Time (C) are skill-related components, not measured by rhythmic stepping. Upper body strength (D) would be measured by push-ups.

5. Therefore, the Harvard Step Test is a definitive measure of aerobic (cardiovascular) fitness.

Final Answer: The Harvard Step Test is used to measure Cardiovascular Fitness/Endurance.

Answer: (A)

Q40.

Solution

Concept: The Rikli & Jones Senior Citizen Fitness Test is specifically designed to assess functional fitness in older adults. Each test in the battery corresponds to a physical attribute needed for common daily activities, such as carrying groceries, climbing stairs, or getting out of a chair.

Solution: 1. The 'Arm Curl Test' involves the participant sitting on a chair and performing as many bicep curls as possible in 30 seconds (5 lbs for women, 8 lbs for men).

2. This test specifically measures "Upper body strength and endurance." It is used to assess if the individual has enough strength to perform manual tasks like lifting a bag of groceries.

3. Lower body strength (A) is measured by the 'Chair Stand Test'. Aerobic capacity (C) is measured by the '6-Minute Walk Test'. Balance (D) is measured by the '8-Foot Up-and-Go Test'.

4. By using the arm curl as a representative movement, clinicians can evaluate the muscular integrity of the upper limbs in a safe, controlled manner suitable for the elderly.

Final Answer: In the Rikli & Jones battery, the Arm Curl Test measures upper body strength and endurance.

Answer: (B)

Q41.

Solution

Concept: Levers in the human body are classified based on the relative position of the Fulcrum (the joint), the Effort (the muscle contraction), and the Load (the weight of the body part or an external object). A Second Class Lever is characterized by the Load being situated between the Fulcrum and the Effort ($F - L - E$). This system is designed for mechanical advantage, allowing a smaller effort to move a larger load.

Solution: 1. When a person stands on their tiptoes, the ball of the foot (metatarsophalangeal joints) acts as the 'Fulcrum'.

2. The 'Load' is the entire weight of the body, which is transmitted through the ankle joint (situated in the middle of the foot).

3. The 'Effort' is provided by the calf muscles (gastrocnemius and soleus) pulling upwards on the heel bone (calcaneus) via the Achilles tendon.

4. Because the Load (body weight) is between the Fulcrum (ball of the foot) and the Effort (heel/calf pull), this is a classic 'Second Class Lever'.

5. A First Class Lever (A) would have the fulcrum in the middle (like the head resting on the neck). A Third Class Lever (C) would have the effort in the middle (like a bicep curl).

6. Therefore, the "toe-raise" is the most prominent example of a second-class lever in human biomechanics.

Final Answer: Standing on tiptoes represents a Second Class Lever.

Answer: (B)

Q42.

Solution

Concept: Sir Isaac Newton's three laws of motion are the foundation of classical mechanics and are used in sports to analyze how forces create movement. The Second Law provides a mathematical relationship between the force applied to an object, its mass, and the resulting change in its motion.

Solution: 1. Newton's Second Law states that the rate of change of momentum of an object is directly proportional to the force applied and takes place in the direction of the force.

2. This is commonly expressed by the formula $F = ma$ (Force = mass $\times$ acceleration).

3. Because this law explains how the velocity of an object changes when a force is exerted upon it, it is clinically known as the 'Law of Acceleration'.

4. The Law of Inertia (A) is the First Law, which states objects resist changes in their state of motion. The Law of Action-Reaction (C) is the Third Law.

5. In sports, this law explains why a heavier shot put requires more force to accelerate than a lighter cricket ball, and why increasing the force of a kick results in higher ball acceleration.

6. Therefore, Acceleration is the defining term for the Second Law.

Final Answer: Newton's Second Law is the Law of Acceleration.

Answer: (B)

Q43.

Solution

Concept: Respiratory volumes are specific measurements of the quantity of air that moves into or out of the lungs under different conditions. These measurements are used to assess pulmonary health and the efficiency of the respiratory system during exercise.

Solution: 1. 'Tidal Volume' (TV) is the volume of air inspired or expired during a single "normal" or relaxed breath.

2. For a healthy adult at rest, the average Tidal Volume is approximately 500 ml.

3. Option (A) refers to Total Lung Capacity. Option (C) refers to Vital Capacity. Option (D) refers to Residual Volume.

4. During physical activity, Tidal Volume increases significantly as the body requires more oxygen and needs to expel more carbon dioxide, leading to deeper breaths.

5. Understanding Tidal Volume is essential for physical educators to evaluate how training affects the efficiency of the "gas exchange" process in athletes.

6. Thus, the definition of a normal, quiet breath identifies Tidal Volume.

Final Answer: Tidal Volume is the amount of air inhaled or exhaled during a normal breath.

Answer: (B)

Q44.

Solution

Concept: The heart is a highly adaptable muscle. Regular cardiovascular (aerobic) exercise leads to structural and functional changes in the heart, collectively known as 'Athlete's Heart'. One of the most significant adaptations is the increase in the heart's pumping efficiency.

Solution: 1. 'Stroke Volume' is defined as the amount of blood ejected by the left ventricle of the heart in one single contraction (beat).

2. Through regular endurance training, the heart's chambers (especially the left ventricle) become slightly larger and the heart walls become stronger.

3. This allows the heart to "pump more blood per single beat," increasing the oxygen delivery to the working muscles.

4. Because the heart is pumping more blood per beat, it doesn't have to beat as often to maintain cardiac output at rest, which is why trained athletes have a lower resting heart rate (bradycardia).

5. Option (A) is incorrect as resting heart rate actually decreases. Option (C) and (D) are physiologically inaccurate consequences of healthy exercise.

6. Therefore, an increase in stroke volume is a direct indicator of improved cardiac efficiency.

Final Answer: Increase in Stroke Volume means the heart pumps more blood per single beat.

Answer: (B)

Q45.

Solution

Concept: Scoliosis is a complex postural deformity involving the vertebral column. While the spine has natural forward and backward curves (Kyphosis and Lordosis), it should ideally be straight when viewed from the back. Any deviation in the lateral plane is considered an abnormality.

Solution: 1. Scoliosis is characterized by a "sideways (lateral) curvature of the spine."

2. Instead of a straight line, the spine may look like an 'S' or a 'C' shape. This often causes one shoulder to be higher than the other or one hip to appear more prominent.

3. A rounded upper back (A) is the symptom of Kyphosis. An inward curve of the lower back (B) is the symptom of Lordosis. Knees touching each other (D) is the symptom of Knock Knees.

4. Scoliosis can be "C-curve" (affecting one side) or "S-curve" (compensatory curves on both sides).

5. Physical educators use the 'Adam's Forward Bend Test' to screen students for this condition. Early detection is vital as it can interfere with lung function and cause chronic pain if left untreated.

Final Answer: Scoliosis is a sideways (lateral) curvature of the spine.

Answer: (C)

Q46.

Solution

Concept: The human body utilizes different energy systems depending on the intensity and duration of the activity. While fats are the primary fuel for low-intensity, long-duration tasks (like walking), high-intensity activities require a fuel source that can be broken down rapidly to provide immediate energy.

Solution: 1. For high-intensity, short-duration activities like a 100 m sprint, the body relies heavily on the anaerobic system.

2. 'Carbohydrates' (specifically in the form of blood glucose and stored muscle glycogen) are the most efficient fuel for this purpose. They can be metabolized much faster than fats to produce Adenosine Triphosphate (ATP), the "energy currency" of the cell.

3. Fats (A) provide more energy per gram but require a much slower, oxygen-dependent (aerobic) process to be converted into energy, making them unsuitable as a primary fuel for a 10-second sprint.

4. Vitamins (C) and Fiber (D) do not provide direct energy (calories) for muscle contraction.

5. Therefore, carbohydrates are the essential macro-nutrient for explosive, high-speed athletic performance.

Final Answer: Carbohydrates are the main source of energy for a 100 m sprint.

Answer: (B)

Q47.

Solution

Concept: In the 'Big Five' (OCEAN) personality model, Extraversion represents the tendency of an individual to be socially active and assertive. This trait is particularly relevant in sports for leadership roles, team communication, and dealing with the pressure of large crowds.

Solution: 1. 'Extraversion' is defined by characteristics such as being outgoing, talkative, and energetic. Individuals high in this trait seek out social stimulation and opportunities to engage with others.

2. They are generally "assertive," meaning they are comfortable taking charge or expressing their opinions in a group setting.

3. Self-discipline (A) is a hallmark of Conscientiousness. Anxiety and moodiness (C) are indicators of Neuroticism. Creativity and imagination (D) belong to the Openness dimension.

4. In a sports team, an extroverted player often acts as a motivator or a captain because their energy and sociability help build team cohesion and facilitate better communication on the field.

5. Thus, sociability and assertiveness are the defining behaviors of an extrovert.

Final Answer: Extraversion is characterized by sociability and assertiveness.

Answer: (B)

Q48.

Solution

Concept: Dhauti is one of the six purificatory techniques (Shatkarmas) of Hatha Yoga aimed at cleansing the digestive tract. 'Vaman Dhauti', also popularly known as 'Kunjal Kriya', is a specific practice that mimics the natural cleansing action of certain animals, like the tiger, to maintain internal hygiene.

Solution: 1. Vaman Dhauti involves drinking about 1.5 to 2 liters of lukewarm saline water (salt water) on an empty stomach until the person feels an urge to vomit.

2. The practitioner then leans forward and tickles the back of the throat to induce the expulsion of the water.

3. This process washes out excess mucus, bile, and impurities from the stomach lining, helping to alleviate acidity, indigestion, and certain respiratory issues like asthma.

4. Jala Neti (A) is for nasal cleansing. Kapalbhati (C) is a respiratory/brain cleansing technique. Trataka (D) is for the eyes.

5. Because the question specifies "stomach cleansing" and "tiger action" (Vaman literally meaning "vomiting"), Vaman Dhauti is the only correct answer.

Final Answer: Vaman Dhauti (Kunjal) is used for cleansing the stomach.

Answer: (B)

Q49.

Solution

Concept: Rickets is a skeletal disorder caused by a lack of essential micronutrients that are responsible for the mineralization of bone tissue. In children, this leads to soft, weak bones that can easily bend or fracture, often resulting in deformities like 'Bow Legs'.

Solution: 1. Vitamin D is essential for the absorption of calcium and phosphorus from the digestive tract into the bloodstream.

2. Without sufficient 'Vitamin D', the body cannot maintain adequate levels of calcium to harden the bones. This leads to the onset of Rickets in children (and Osteomalacia in adults).

3. Vitamin C (A) deficiency causes Scurvy. Protein (C) deficiency leads to Kwashiorkor or Marasmus. Iron (D) deficiency causes Anemia.

4. Vitamin D is unique because the body can synthesize it when the skin is exposed to sunlight, in addition to obtaining it from dietary sources like fortified milk and fatty fish.

5. Therefore, Vitamin D is the specific micronutrient required to prevent the bone-softening effects of Rickets.

Final Answer: Vitamin D prevents the condition known as Rickets.

Answer: (B)

Q50.

Solution

Concept: Adaptive sports organizations are specialized entities that provide competitive opportunities for athletes based on their specific disabilities. The 'Deaflympics' (formerly called World Games for the Deaf) is a primary international event sanctioned by the International Olympic Committee (IOC).

Solution: 1. The Deaflympics are organized specifically for athletes with "hearing impairment."

2. To be eligible, athletes must have a hearing loss of at least 55 dB in their better ear.

3. A unique feature of the Deaflympics is that athletes cannot use hearing aids or cochlear implants during competition to ensure a level playing field.

4. The Paralympics (A) primarily serves those with physical or visual impairments. The Special Olympics (C) is dedicated to individuals with intellectual disabilities.

5. Communication during these games is handled through visual cues (like flags or lights) instead of auditory ones (like starter pistols or whistles).

6. Therefore, the Deaflympics is defined by its service to the hearing-impaired community.

Final Answer: The Deaflympics are organized for athletes with hearing impairment.

Answer: (B)

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	B	3	B	4	C	5	B
6	C	7	B	8	B	9	C	10	B
11	B	12	B	13	B	14	B	15	C
16	B	17	B	18	C	19	B	20	A
21	B	22	B	23	B	24	C	25	B
26	B	27	C	28	B	29	B	30	B
31	C	32	B	33	B	34	B	35	B
36	C	37	A	38	B	39	A	40	B
41	B	42	B	43	B	44	B	45	C
46	B	47	B	48	B	49	B	50	B