CUET-UG Physical Education Sample Paper-6

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.

Q1. According to the "Big Five" Personality Theory, an elite athlete who demonstrates exceptional emotional regulation during a high-stakes championship, avoiding erratic behavior despite immense pressure, is characterized by a low score in:

(A) Conscientiousness

(B) Neuroticism

(C) Agreeableness

(D) Openness to Experience

Q2. In the context of Biomechanics, which of the following statements regarding the "Third Class Lever" in the human body is incorrect?

(A) The Effort is located between the Fulcrum and the Resistance.

(B) It provides a mechanical advantage for speed and range of motion.

(C) It is the most common lever system found in the human musculoskeletal system.

(D) It provides a mechanical advantage for force, requiring less effort to move heavy loads.

Q3. A sprinter at the starting blocks experiences a state of "Shock" or "Alarm" when the starter's gun fires, followed by a physiological adaptation to the stress of the race. This sequential response is a core component of:

(A) Fartlek Training Principle

(B) General Adaptation Syndrome (GAS)

(C) Isokinetic Exercise Theory

(D) Specificity of Training (SAID)

Q4. Which of the following Kriya techniques in Yoga is specifically designed for the "internal cleansing" of the stomach using a long, thin strip of cloth?

(A) Vastra Dhauti

(B) Jala Neti

(C) Kapalbhati

(D) Nauli

Q5. Arrange the following training methods in the correct sequence based on their focus on developing (i) Cardiovascular Endurance, (ii) Explosive Power, (iii) Flexibility, and (iv) Muscular Strength:

(A) PNF Stretching

(B) Fartlek Training

(C) Plyometrics

(D) Weight Training

(A) (B), (C), (A), (D)

(B) (C), (B), (D), (A)

(C) (B), (D), (C), (A)

(D) (B), (A), (C), (D)

Q6. Match List-I (Test Item) with List-II (Functional Ability) according to the Rikli Jones Senior Citizen Fitness Test:

List-I (Test)	List-II (Ability)
(A) Chair Stand Test	(I) Upper Body Flexibility
(B) Arm Curl Test	(II) Lower Body Strength
(C) Back Scratch Test	(III) Agility and Dynamic Balance
(D) 8-Foot Up and Go	(IV) Upper Body Strength

(A) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)

(B) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

(C) (A)-(IV), (B)-(II), (C)-(III), (D)-(I)

(D) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

Q7. In a league tournament following the Cyclic Method, if the number of participating teams is 9, the total number of rounds required to complete the tournament will be?

(A) 8

(B) 9

(C) 10

(D) 18

Q8. Which of the following nutrients is considered a "Micro-Nutrient" that plays a vital role in the formation of hemoglobin and the prevention of anemia in athletes?

(A) Protein

(B) Iron

(C) Magnesium

(D) Carbohydrates

Q9. A basketball player performs a jump shot. During the upward phase, the movement of the arm at the elbow joint (extension) is caused by the contraction of the Triceps. In this specific action, the Triceps muscle acts as the:

(A) Antagonist

(B) Agonist

(C) Stabilizer

(D) Neutralizer

Q10. Fill in the blank: The "Arjuna Award" was instituted by the Government of India in the year _____ to recognize outstanding achievements in National sports.

(A) 1951

(B) 1961

(C) 1985

(D) 1991

Q11. Arrange the following "Shatkarmas" in the order they are typically practiced to achieve overall purification of the body:

(A) Neti

(B) Dhauti

(C) Basti

(D) Trataka

(A) (B), (A), (C), (D)

(B) (A), (B), (C), (D)

(C) (D), (C), (B), (A)

(D) (B), (C), (A), (D)

Q12. Which postural deformity is characterized by the inward curvature of the lumbar spine, often resulting from weak abdominal muscles and obesity?

(A) Kyphosis

(B) Lordosis

(C) Scoliosis

(D) Bow Legs

Q13. The "Mid-Day Meal Scheme" (PM-POSHAN) specifically mandates that for children in the "Primary" category (Class I-V), the meal must provide a minimum of:

(A) 450 Calories and 12g Protein

(B) 700 Calories and 20g Protein

(C) 300 Calories and 8g Protein

(D) 500 Calories and 15g Protein

Q14. In Sports Psychology, "Instrumental Aggression" differs from "Hostile Aggression" primarily because:

(A) It is always accompanied by anger.

(B) The primary goal is to injure the opponent.

(C) The aggressive act is a means to achieve a non-aggressive goal (like winning).

(D) It only occurs in individual sports like Boxing.

Q15. A "Comminuted Fracture" is a severe bone injury where the bone:

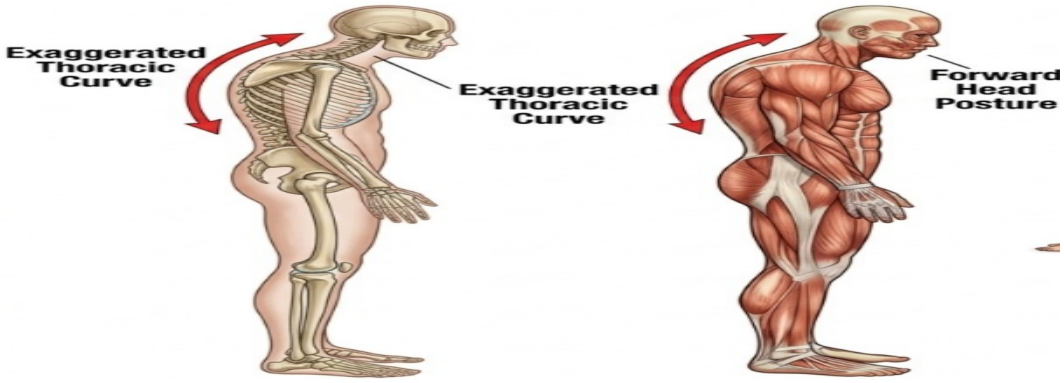
(A) Bends and cracks but does not break.

(B) Breaks into more than three fragments.

(C) Pierces through the skin (Open wound).

(D) Is crushed along its longitudinal axis.

Q16. Look at the image provided below representing a common postural deformity found in athletes. Identify the deformity and the specific corrective exercise that is most effective for this condition:



(A) Lordosis; Shavasana

(B) Kyphosis; Chakrasana

(C) Scoliosis; Tadasana

(D) Flat Foot; Vajrasana

Q17. In the context of "Methods to Improve Flexibility," the PNF (Proprioceptive Neuromuscular Facilitation) technique is considered the most advanced. Which physiological mechanism does PNF primarily leverage to achieve a deeper stretch?

(A) Reciprocal Inhibition

(B) Myotatic Reflex (Stretch Reflex)

(C) Autogenic Inhibition (Golgi Tendon Organ response)

(D) Aerobic Metabolism

Q18. Match List-I (Macro/Micro Nutrient) with List-II (Specific Biological Function):

List-I (Nutrient)	List-II (Function)
(A) Vitamin K	(I) Maintenance of fluid balance and nerve impulse
(B) Vitamin B12	(II) Synthesis of collagen and wound healing
(C) Sodium	(III) Facilitation of blood clotting (Coagulation)
(D) Vitamin C	(IV) Formation of Red Blood Cells and DNA synthesis

(A) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

(B) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

(C) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(D) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

Q19. During a high-intensity 400m sprint, an athlete experiences a burning sensation in the muscles and a significant drop in pace. This is primarily due to the accumulation of _____ as a byproduct of _____ metabolism.

(A) Carbon Dioxide; Aerobic

(B) Lactic Acid; Anaerobic Glycolytic

(C) Pyruvic Acid; ATP-CP

(D) Glycogen; Aerobic

Q20. Newton's Second Law of Motion (Law of Acceleration) states that the acceleration of an object is directly proportional to the force applied. In the context of "Shot

Put," if two athletes apply the same force, but Athlete A uses a heavier shot than Athlete B, which of the following is true?

(A) Athlete A's shot will accelerate more.

(B) Athlete B's shot will accelerate more.

(C) Both shots will have the same acceleration.

(D) Acceleration is independent of the mass of the shot.

Q21. Which of the following describes "Fartlek Training" accurately?

(A) A pre-planned interval training with fixed recovery periods.

(B) "Speed Play" where the pace is varied according to the terrain and individual feeling.

(C) High-intensity static exercises performed against an immovable resistance.

(D) Low-intensity continuous running at a steady heart rate.

Q22. The "Flamingo Balance Test" is a component of many fitness batteries. What specific aspect of fitness does it measure, and what is the primary protocol?

(A) Dynamic balance; walking on a narrow beam.

(B) Static balance; standing on one leg on a metal beam.

(C) Agility; 4x10m shuttle run.

(D) Coordination; juggling three balls.

Q23. According to the "Big Five" Personality Theory, a sportsperson who is highly cooperative, trusting, and places the team's needs above their own ego is said to be high in:

(A) Extroversion

(B) Conscientiousness

(C) Agreeableness

(D) Openness to Experience

Q24. Which of the following is a "Communicable Disease" that is primarily transmitted through the feco-oral route and affects the liver?

(A) Tuberculosis

(B) Hepatitis A

(C) Diabetes Mellitus

(D) Hypertension

Q25. The "Dronacharya Award" (Lifetime Category) carries a cash prize of _____ and is awarded for "outstanding and meritorious work on a consistent basis" over a period of 20 years or more.

(A) ₹ 5 Lakh

(B) ₹ 10 Lakh

(C) ₹ 15 Lakh

(D) ₹ 25 Lakh

Q26. In the context of sports injuries, a "Strain" is an injury specifically involving the _____ whereas a "Sprain" involves the ?

(A) Ligament; Muscle/Tendon

(B) Bone; Ligament

(C) Muscle/Tendon; Ligament

(D) Nerve; Bone

Q27. The "Harvard Step Test" is used to measure which component of physical fitness?

(A) Anaerobic Capacity

(B) Cardiovascular Endurance (VO2 Max)

(C) Muscular Strength

(D) Flexibility

Q28. Which stage of "Suryanamaskar" involves a deep forward fold that primarily stretches the hamstrings and the spinal extensors?

(A) Ashwa Sanchalanasana

(B) Padahastasana

(C) Parvatasana

(D) Bhujangasana

Q29. Sheldon's classification of somatotypes identifies an individual with a "soft, round body, wide hips, and a high percentage of body fat" as an:

(A) Ectomorph

(B) Mesomorph

(C) Endomorph

(D) Balanced Morph

Q30. The "Khel Ratna Award" (now Major Dhyan Chand Khel Ratna) was first awarded in 1991-92 to:

(A) Sachin Tendulkar

(B) Vishwanathan Anand

(C) Abhinav Bindra

(D) Mary Kom

Q31. Which Indian city has been officially announced as the host for the 2025 BWF World Junior Championships, marking a significant milestone for badminton infrastructure in the country?

(A) New Delhi

(B) Guwahati

(C) Hyderabad

(D) Bengaluru

Q32. In the 2024 Paris Olympics, India's Aman Sehrawat secured a bronze medal in which specific weight category of Men's Freestyle Wrestling?

(A) 57 kg

(B) 65 kg

(C) 74 kg

(D) 86 kg

Q33. The 'Khel Ratna' awardee for 2023, Satwiksairaj Rankireddy and Chirag Shetty, are associated with which sport?

(A) Table Tennis

(B) Shooting

(C) Badminton

(D) Archery

Passage 1: Training Load and Recovery

Read the following text and answer questions 34 to 38.

In high-performance sports, the 'Principle of Overload' is fundamental. To improve, an athlete must be exposed to a stimulus greater than what they are accustomed to. However, if the load is too high without adequate 'Rest and Recovery,' it leads to 'Overtraining Syndrome.' Recovery is not merely the absence of training; it is an active physiological process involving the restoration of energy stores (glycogen), the repair of micro-tears in muscle fibers, and the normalization of the central nervous system. Modern athletes use 'Cryotherapy' and 'Contrast Baths' to accelerate this process by manipulating blood flow through vasoconstriction and vasodilation.

Q34. According to the passage, what is the primary physiological objective of 'Recovery' regarding muscle tissue?

(A) Increasing the number of muscle fibers (hyperplasia).

(B) Repairing micro-tears in muscle fibers.

(C) Eliminating all traces of body fat.

(D) Converting white muscle fibers to red muscle fibers.

Q35. The passage mentions 'Contrast Baths.' This recovery technique involves alternating between hot and cold water to induce:

(A) Permanent muscle hypertrophy.

(B) Rapid dehydration.

(C) Vasoconstriction and vasodilation.

(D) Anaerobic glycolysis.

Q36. Which training principle is identified as the necessity for a stimulus greater than normal to induce improvement?

(A) Principle of Specificity

(B) Principle of Reversibility

(C) Principle of Overload

(D) Principle of Continuity

Q37. What is the likely outcome if an athlete consistently applies a high training load without the recovery processes mentioned in the text?

(A) Super-compensation

(B) Overtraining Syndrome

(C) Improved Neuromuscular efficiency

(D) Increased Vital Capacity

Q38. Which specific energy store mentioned in the passage must be restored during the recovery phase?

(A) Amino Acids

(B) Triglycerides

(C) Glycogen

(D) Cholesterol

Passage 2: Biomechanics and Projectile Motion

Read the following text and answer questions 39 to 43.

The flight of a javelin or a shot put is governed by the laws of projectile motion. Three main factors determine the horizontal distance covered: the speed of

release, the angle of release, and the height of release. In a vacuum, the optimal angle for maximum distance is 45°. However, in sports, air resistance (aerodynamics) plays a crucial role. For example, a javelin is designed as an airfoil; thus, the optimal angle is often lower (around 30° to 35°) to utilize 'Lift' and minimize 'Drag.' The 'Speed of Release' is considered the most critical factor because the distance is proportional to the square of the velocity.

Q39. Why is the optimal angle for a javelin throw in real competition lower than the theoretical 45° mentioned in physics textbooks?

(A) To increase the weight of the javelin.

(B) To account for air resistance and aerodynamic lift.

(C) To reduce the speed of release.

(D) Because 45° is only for vertical motion.

Q40. According to the text, which factor is the most influential in determining the distance of a throw?

(A) Angle of release

(B) Height of release

(C) Speed of release

(D) Surface friction

Q41. The force that opposes the motion of the javelin through the air is referred to in the passage as:

(A) Lift

(B) Gravity

(C) Drag

(D) Inertia

Q42. In projectile motion, if the release height is higher than the landing surface (as in Shot Put), the optimal angle of release should be:

(A) Exactly 45°

(B) Slightly less than 45°

(C) Exactly 90°

(D) Greater than 45°

Q43. Based on the passage, distance is proportional to which mathematical variation of velocity?

(A) Square root of velocity

(B) The cube of velocity

(C) The square of velocity

(D) Velocity divided by two

Q44. Identify the 'Non-Communicable' disease that involves a chronic condition where the body cannot produce enough insulin or cannot effectively use the insulin it produces:

(A) Malaria

(B) Type 2 Diabetes

(C) Cholera

(D) Influenza

Q45. Which of the following describes the 'Isokinetic' exercise method?

(A) Contraction where muscle length remains constant.

(B) Movement at a constant speed regardless of the force applied.

(C) Rhythmic movement with a constant resistance.

(D) Exercises involving jumps and hops to improve power.

Q46. In the 'Five-Stage' model of a training session, 'Limbering Down' is performed to:

(A) Increase body temperature rapidly.

(B) Gradually return the heart rate to normal and remove metabolic waste.

(C) Achieve maximum strength output.

(D) Practice new technical skills.

Q47. A 'Greenstick Fracture' is most commonly observed in children because:

(A) Their bones are highly mineralized and brittle.

(B) Their bones are more flexible and have a thick periosteum.

(C) Children participate in higher-impact sports than adults.

(D) Their bones lack blood supply.

Q48. Which of the following vitamins is 'Water-Soluble' and must be consumed daily as it is not stored in the body's fatty tissues?

(A) Vitamin A

(B) Vitamin D

(C) Vitamin B-Complex

(D) Vitamin K

Q49. The 'Newton's Third Law of Motion' (Law of Action and Reaction) is best demonstrated in which sports action?

(A) A swimmer pushing against the water to move forward.

(B) A person standing still.

(C) A heavy person falling faster than a light person.

(D) The increase in weight of an athlete.

Q50. In 'Test Measurement,' the 'Shuttle Run' is used primarily to assess an athlete's:

(A) Pure Speed

(B) Agility and Coordination

(C) Aerobic Endurance

(D) Static Strength

Detailed Solutions

Q1.

Solution

Concept:

The "Big Five" Personality Theory (OCEAN) is a standard psychological model used to categorize human personality traits. Neuroticism refers to the degree of emotional instability and the tendency to experience negative emotions like anxiety, fear, or mood swings.

Solution:

(a) High Neuroticism is linked to emotional volatility and poor stress management.

(b) Low Neuroticism indicates emotional stability, calmness, and the ability to remain composed under pressure.

(c) For an elite athlete, maintaining composure during a high-stakes championship is a hallmark of low Neuroticism.

(d) Conscientiousness refers to organization, Agreeableness to cooperativeness, and Openness to creativity, none of which primarily govern emotional regulation under pressure.

Final Answer: The trait is low Neuroticism.

Answer: (B)

Q2.

Solution

Concept:

Levers are categorized into three classes based on the position of the Fulcrum (F), Effort (E), and Resistance (R). In a Third Class Lever, the Effort is applied between the Fulcrum and the Resistance (F-E-R).

Solution:

(a) Statement (A) is correct; the Effort is in the middle.

(b) Statement (B) is correct; because the effort arm is shorter than the resistance arm, the system favors speed and displacement.

(c) Statement (C) is correct; most human joint movements (like the bicep curl) are third-class levers.

(d) Statement (D) is incorrect; Third Class Levers have a mechanical advantage of less than 1, meaning they require more effort than the resistance moved. They favor speed, not force.

Final Answer: Statement (D) is incorrect.

Answer: (D)

Q3.

Solution

Concept:

Hans Selye's General Adaptation Syndrome (GAS) describes the three-stage process the body goes through when exposed to stress: Alarm Reaction, Resistance, and Exhaustion.

Solution:

(a) The "Alarm" stage is the immediate physiological response to a stressor (like a starting gun).

(b) The "Resistance" stage is where the body adapts to the training load or stress to improve performance.

(c) This model is fundamental in sports training to understand how athletes adapt to workload.

(d) Fartlek is a training method, while Isokinetic and Specificity are principles, but the specific biological sequence described is GAS.

Final Answer: The process is General Adaptation Syndrome.

Answer: (B)

Q4.

Solution

Concept:

Shatkarmas are the six yogic purification techniques. "Dhauti" refers to the cleansing of the digestive tract.

Solution:

(a) "Vastra Dhauti" involves swallowing a long strip of cotton cloth to clean the stomach.

(b) "Neti" is for nasal cleansing.

(c) "Kapalbhati" is a breathing technique for frontal brain purification.

(d) "Nauli" is an abdominal churning technique.

(e) Therefore, Vastra Dhauti is the specific technique for internal stomach cleansing using cloth.

Final Answer: The technique is Vastra Dhauti.

Answer: (A)

Q5.

Solution

Concept:

Training methods are designed to target specific fitness components: Fartlek for endurance, Plyometrics for power, PNF for flexibility, and Weight training for strength.

Solution:

(a) (i) Cardiovascular Endurance is best developed by Fartlek Training (B).

(b) (ii) Explosive Power is the primary goal of Plyometrics (C).

(c) (iii) Flexibility is enhanced through Proprioceptive Neuromuscular Facilitation or PNF Stretching (A).

(d) (iv) Muscular Strength is the focus of Weight Training (D).

(e) The sequence (i-ii-iii-iv) matches (B)-(C)-(A)-(D).

Final Answer: The sequence is (B), (C), (A), (D).

Answer: (A)

Q6.

Solution

Concept:

The Rikli and Jones Senior Citizen Fitness Test (also known as the Fullerton Functional Fitness Test) is a specifically designed battery of tests used to assess the functional fitness of older adults. Unlike standard athletic tests, these are safe, simple, and focus on "functional" movements required for independent living. Each test item is mapped to a specific physiological attribute such as strength, flexibility, or aerobic endurance.

Solution:

(a) **Chair Stand Test:** This test involves sitting and standing from a chair as many times as possible in 30 seconds. It is designed to evaluate lower body strength, which is critical for tasks like climbing stairs or getting out of a car. Thus, (A) maps to (II).

(b) **Arm Curl Test:** This test measures the number of bicep curls performed in 30 seconds using a dumbbell (5lb for women, 8lb for men). It assesses upper body strength, necessary for lifting and carrying household items. Thus, (B) maps to (IV).

(c) **Back Scratch Test:** This is a flexibility test where the participant tries to bring their hands together behind their back. It measures upper body (shoulder) flexibility, which is vital for reaching or dressing. Thus, (C) maps to (I).

(d) **8-Foot Up and Go Test:** This requires the participant to stand from a chair, walk 8 feet, turn, and sit back down as quickly as possible. It measures speed, agility, and dynamic balance, which are key indicators of fall risk. Thus, (D) maps to (III).

(e) Combining these: (A)-(II), (B)-(IV), (C)-(I), (D)-(III). This sequence corresponds to Option (A).

Final Answer: The correct mapping is (A)-(II), (B)-(IV), (C)-(I), (D)-(III).

Answer: (A)

Q7.

Solution

Concept:

In Physical Education tournament organization, the "Cyclic Method" is a popular way to schedule league (Round Robin) tournaments. The number of rounds depends entirely on whether the total number of teams (n) is even or odd. This method ensures that every team plays every other team exactly once in a systematic rotation.

Solution:

(a) The first step in determining the number of rounds is to identify if the number of teams (n) is even or odd.

(b) Rule 1: If n is even, the number of rounds is $(n - 1)$.

(c) Rule 2: If n is odd, the number of rounds is equal to n. In this case, one team receives a 'Bye' in each round, and that 'Bye' occupies one of the fixed positions in the cyclic rotation.

(d) In the given question, the number of teams is 9, which is an odd number.

(e) Applying Rule 2 for odd teams, the number of rounds required is exactly 9.

(f) If there were 8 teams (even), the answer would have been 7 rounds. However, for 9 teams, we need 9 rounds to ensure every team has one round where they sit out (Bye) and eight rounds where they play an opponent.

Final Answer: The total number of rounds is 9.

Answer: (B)

Q8.

Solution

Concept:

Nutrients are classified into Macro-nutrients (required in large amounts like Carbohydrates, Proteins, and Fats) and Micro-nutrients (required in trace amounts like Vitamins and Minerals). While micro-nutrients do not provide energy, they are essential for physiological regulation and chemical reactions within the body, including oxygen transport.

Solution:

(a) The question specifies a "Micro-Nutrient" involved in hemoglobin formation. This immediately narrows the field to minerals.

(b) Protein and Carbohydrates (Options A and D) are Macro-nutrients, so they are excluded despite their importance to athletes.

(c) Iron is a vital trace mineral. It is a central component of hemoglobin, the protein in red blood cells responsible for transporting oxygen from the lungs to the muscles.

(d) A deficiency in iron leads to anemia, characterized by fatigue and decreased aerobic capacity, which severely impacts athletic performance.

(e) Magnesium (Option C) is also a micro-nutrient, but its primary roles involve muscle contraction and nerve function, not the structural formation of hemoglobin.

(f) Therefore, Iron is the correct micro-nutrient for this specific physiological function.

Final Answer: The micro-nutrient is Iron.

Answer: (B)

Q9.

Solution

Concept:

Muscles typically work in pairs to produce movement through a relationship known as reciprocal inhibition. In any given joint action, muscles are categorized based on their role: the Agonist (prime mover), the Antagonist (opposing muscle), Synergists (helpers), and Stabilizers.

Solution:

(a) The movement described is "elbow extension" (straightening the arm) during a jump shot in basketball.

(b) To straighten the arm, the muscle on the back of the upper arm, the Triceps Brachii, must contract or shorten.

(c) The muscle that provides the primary force for a specific movement is called the "Agonist" or "Prime Mover."

(d) Simultaneously, the Biceps (the muscle on the front) must relax and lengthen to allow this movement to occur; in this context, the Biceps would be the "Antagonist."

(e) Since the question specifically asks for the role of the Triceps during the extension phase, it is identified as the Agonist.

(f) Stabilizers would be muscles like the Deltoids or Rotator Cuff holding the shoulder steady, but the Triceps is the active driver of the elbow's extension.

Final Answer: The Triceps muscle acts as the Agonist.

Answer: (B)

Q10.

Solution

Concept:

The Arjuna Award is one of India's oldest and most prestigious national sports awards. It is presented by the Ministry of Youth Affairs and Sports, Government of India, to sportspersons for consistent outstanding performance at the international level over a period of four years, along with qualities of leadership, sportsmanship, and a sense of discipline.

Solution:

(a) The Government of India established a structured system for sports recognition after independence.

(b) The Arjuna Award was the first major national award instituted specifically for athletes, and it was established in 1961.

(c) To provide context: 1985 (Option C) saw the institution of the Dronacharya Award for coaches.

(d) 1991-92 (Option D) marked the beginning of the Rajiv Gandhi Khel Ratna (now Major Dhyan Chand Khel Ratna), which is the highest sporting honor in India.

(e) The first batch of Arjuna Awardees in 1961 included legends like Salim Durani (Cricket) and Sarbjit Singh (Basketball).

(f) Knowing the specific year of institution is a frequent "High-Yield" requirement for CUET UG Physical Education.

Final Answer: The award was instituted in the year 1961.

Answer: (B)

Q11.

Solution

Concept:

In the Hatha Yoga tradition, the "Shatkarmas" or "Shatkriyas" are six purification techniques intended to balance the three doshas (Kapha, Pitta, and Vata) and prepare the body for advanced Pranayama and meditation. While practitioners may vary their routine, there is a traditional logical progression for these internal cleansings that moves from the upper digestive tract and respiratory system toward the lower body and the nervous system.

Solution:

(a) **Dhauti (B):** This is typically the first stage, focusing on the cleansing of the upper digestive tract (stomach and esophagus). By removing excess mucus and toxins from the stomach, it sets the foundation for further purification.

(b) **Basti (C):** This involves the cleansing of the lower intestine or colon (yogic enema). Traditionally, purifying the digestive tract from both ends (Dhauti and Basti) is the priority before moving to more subtle or sensory organs.

(c) **Neti (A):** Once the digestive system is addressed, the practitioner focuses on the nasal passages. Neti cleanses the sinus area, which is vital for the effective practice of breathing techniques (Pranayama).

(d) **Trataka (D):** This is often one of the final stages because it is a bridge between physical cleansing and mental concentration. It involves steady gazing at a point (often a candle flame) to purify the eyes and develop mental focus.

(e) The sequence (B), (C), (A), (D) represents a logical flow from the core digestive system to the respiratory system and finally to the sensory/neurological level.

Final Answer: The correct sequence is (B), (C), (A), (D).

Answer: (A)

Q12.

Solution

Concept:

Postural deformities are deviations in the normal alignment of the skeletal system, often categorized as sagittal plane or frontal plane deviations. Lordosis is a sagittal plane deformity specifically affecting the lumbar (lower) region of the spine. It is characterized by an exaggerated anterior pelvic tilt and an increased inward curve of the lower back, often creating a "swayback" appearance.

Solution:

(a) **Lordosis:** This condition is frequently caused by an imbalance between the muscles that stabilize the pelvis. Specifically, weak abdominal muscles and tight hip flexors (iliopsoas) cause the pelvis to tilt forward, pulling the lumbar vertebrae into a deeper curve. Obesity exacerbates this by adding weight to the abdominal area, further pulling the spine forward.

(b) **Kyphosis (Option A):** This is a deformity of the thoracic (upper) spine, resulting in a "hunchback" appearance. It is distinct from Lordosis as it affects a different region of the vertebral column.

(c) **Scoliosis (Option C):** This is a lateral (sideways) curvature of the spine, usually in an 'S' or 'C' shape. It is a frontal plane deformity rather than a sagittal one.

(d) **Bow Legs (Option D):** This is a deformity of the lower limbs where the knees stay wide apart when a person stands with feet together; it does not involve the curvature of the spine.

(e) Given the description of the inward curvature of the lumbar spine and its association with weak abdominals, Lordosis is the only accurate classification.

Final Answer: The deformity is Lordosis.

Answer: (B)

Q13.

Solution

Concept:

The Mid-Day Meal Scheme, now known as Pradhan Mantri Poshan Shakti Nirman (PM-POSHAN), is a school meal program in India designed to better the nutritional status of school-age children. To ensure uniform health benefits, the Ministry of Education has set strict nutritional norms that distinguish between "Primary" (Classes I-V) and "Upper Primary" (Classes VI-VIII) students. These norms are essential knowledge for Health Education modules in Physical Education.

Solution:

(a) The program aims to provide a meal that covers roughly one-third of the daily calorie requirement and half of the protein requirement of a child.

(b) For the **Primary Category (Class I to V)**, the mandatory requirement is exactly 450 Calories and 12 grams of Protein per meal.

(c) For the **Upper Primary Category (Class VI to VIII)**, the requirement increases significantly to 700 Calories and 20 grams of Protein to account for the growth spurts occurring during early adolescence.

(d) Option (C) and (D) are incorrect as they do not match the official government mandates for either category.

(e) Since the question specifically asks for the "Primary" category, we must select the lower threshold that matches the developmental needs of children aged 6 to 10 years.

Final Answer: The requirement is 450 Calories and 12g Protein.

Answer: (A)

Q14.

Solution

Concept:

In Sports Psychology, aggression is defined as any behavior directed toward another living being that is intended to cause harm. However, psychologists distinguish between the intent and the motivation behind the act. Instrumental Aggression and Hostile Aggression are the two primary classifications used to analyze athlete behavior on the field.

Solution:

(a) **Hostile Aggression:** This is "reactive" aggression. The primary goal is to cause injury or pain to the opponent, usually triggered by anger, frustration, or a perceived insult. The "reinforcement" for the aggressor is seeing the victim in pain.

(b) **Instrumental Aggression:** This is "proactive" or "calculated" aggression. In this case, the athlete uses an aggressive act as a "tool" or an "instrument" to achieve a different goal, such as stopping a fast break, winning a ball, or intimidating an opponent to gain a competitive advantage.

(c) The key difference is the presence of anger: Instrumental aggression is often performed "coldly" or without emotional outbursts (Option C). The harm caused is a byproduct of the pursuit of victory, not the primary objective.

(d) Option (A) is incorrect because instrumental aggression is often emotionless. Option (B) describes Hostile aggression. Option (D) is incorrect because these behaviors are prevalent in all contact team sports like Rugby, Soccer, and Basketball.

Final Answer: It is a means to achieve a non-aggressive goal.

Answer: (C)

Q15.

Solution

Concept:

In sports medicine, fractures are classified based on the complexity and the pattern of the break. A Comminuted Fracture is considered a high-impact, complex injury. Understanding these definitions is crucial for first aid and emergency management in physical education.

Solution:

(a) **Comminuted Fracture:** This occurs when a bone is shattered, splintered, or crushed into multiple pieces. Specifically, for a fracture to be classified as comminuted, there must be at least three or more bone fragments at the site of the injury. This usually happens due to severe trauma, such as a high-velocity fall or a direct heavy blow.

(b) **Greenstick Fracture (Option A):** This is common in children where the bone is soft; it bends and cracks only on one side, similar to breaking a "green stick" from a tree.

(c) **Compound/Open Fracture (Option B):** This is where the broken bone ends pierce through the skin, creating an external wound and increasing the risk of infection.

(d) **Impacted Fracture (Option D):** This is where the broken ends of the bone are driven into each other due to the force of the injury.

(e) Therefore, the defining characteristic of a "Comminuted" fracture is the fragmentation of the bone into several pieces (Option B).

Final Answer: The bone breaks into more than three fragments.

Answer: (B)

Q16.

Solution

Concept:

Postural deformities significantly impact an athlete's biomechanical efficiency and long-term health. Kyphosis, often referred to as "round shoulders" or "hunchback," is a sagittal plane deformity characterized by an excessive outward curvature of the thoracic (upper) spine. It is frequently caused by poor sitting habits, weak back muscles, or carrying heavy loads improperly.

Solution:

(a) The image illustrates a rounded upper back and a forward head carriage, which is the classic presentation of Kyphosis.

(b) To correct Kyphosis, the focus must be on strengthening the upper back extensors (trapezius and rhomboids) and stretching the chest muscles (pectorals).

(c) "Chakrasana" (Wheel Pose) is highly effective because it forces the spine into extension, opening the chest and reversing the forward-rounding tendency.

(d) "Shavasana" (Option A) is a relaxation pose with no corrective structural impact. "Tadasana" (Option C) improves general posture but is not as targeted as Chakrasana. "Vajrasana" (Option D) is a meditative pose primarily affecting the legs and digestion.

(e) Therefore, the correct pair of deformity and corrective measure is Kyphosis and Chakrasana.

Final Answer: The deformity is Kyphosis and the exercise is Chakrasana.

Answer: (B)

Q17.

Solution

Concept:

Proprioceptive Neuromuscular Facilitation (PNF) is a sophisticated stretching protocol originally developed for rehabilitation but now widely used in elite sports to maximize range of motion. Unlike static or ballistic stretching, PNF involves both the stretching and contraction of the muscle group being targeted.

Solution:

(a) PNF relies on "Autogenic Inhibition," a physiological reflex mediated by the Golgi Tendon Organs (GTOs).

(b) GTOs are sensory receptors located at the junction of muscles and tendons that sense changes in muscle tension.

(c) When a muscle is contracted isometrically against resistance (as in the "contract" phase of a PNF stretch), the GTOs send signals to the spinal cord to inhibit the muscle contraction, causing the muscle to relax.

(d) This "forced" relaxation allows the muscle to be stretched further than would be possible during a standard static stretch.

(e) Reciprocal Inhibition (Option A) refers to the relaxation of the antagonist when the agonist contracts, which is different from the self-induced relaxation of the GTO response.

Final Answer: The physiological mechanism is Autogenic Inhibition.

Answer: (C)

Q18.

Solution

Concept:

Human nutrition requires a precise balance of macro-nutrients (energy providers) and micro-nutrients (vitamins and minerals) to maintain homeostasis and support athletic performance. Each vitamin and mineral has a specific, non-interchangeable biological role that supports life and physical activity.

Solution:

(a) **Vitamin K (A):** This is essential for the synthesis of proteins required for blood coagulation (clotting). Without it, minor sports injuries could lead to excessive bleeding. Thus, (A) maps to (III).

(b) **Vitamin B12 (B):** This is critical for the production of red blood cells and the maintenance of the central nervous system. A deficiency can lead to megaloblastic anemia, severely reducing an athlete's oxygen-carrying capacity. Thus, (B) maps to (IV).

(c) **Sodium (C):** As a primary electrolyte, sodium is responsible for maintaining osmotic pressure (fluid balance) and facilitating the transmission of nerve impulses across cell membranes. Thus, (C) maps to (I).

(d) **Vitamin C (D):** Also known as ascorbic acid, it is vital for collagen production, which is necessary for the health of tendons, ligaments, and skin, as well as wound healing. Thus, (D) maps to (II).

(e) Combining these, we get (A)-(III), (B)-(IV), (C)-(I), (D)-(II), which matches Option (A).

Final Answer: The correct mapping is (A)-(III), (B)-(IV), (C)-(I), (D)-(II).

Answer: (A)

Q19.

Solution

Concept:

Energy metabolism in sports is determined by the duration and intensity of the exercise. For events lasting between 30 to 90 seconds, such as a 400m sprint, the body cannot supply enough oxygen to the muscles quickly enough to rely on aerobic pathways. Instead, it relies on the Anaerobic Glycolytic system.

Solution:

(a) In the absence of sufficient oxygen (anaerobic conditions), the body breaks down glycogen into glucose and then into pyruvic acid.

(b) Because oxygen is limited, pyruvic acid is converted into "Lactic Acid" (or lactate and hydrogen ions).

(c) The accumulation of hydrogen ions increases muscle acidity (decreases pH), which interferes with muscle contraction and enzyme activity, leading to the "burning" sensation and muscle fatigue known as the lactate threshold.

(d) Carbon Dioxide (Option A) is a byproduct of aerobic metabolism and does not cause acute muscle failure in this manner. ATP-CP (Option C) is for very short bursts (under 10 seconds).

(e) Therefore, Lactic Acid accumulation via Anaerobic Glycolytic metabolism is the correct explanation.

Final Answer: The byproduct is Lactic Acid from Anaerobic Glycolytic metabolism.

Answer: (B)

Q20.

Solution

Concept:

Biomechanics applying Newton's Laws of Motion allows us to predict the outcome of sports movements. The Second Law, $F = m \times a$ (Force = Mass $\times$ Acceleration), describes the relationship between the force applied to an object, its mass, and the resulting acceleration.

Solution:

(a) The formula can be rearranged to $a = F/m$. This shows that acceleration is directly proportional to force and inversely proportional to mass.

(b) "Inversely proportional to mass" means that if the force (F) remains constant, an increase in mass (m) will result in a decrease in acceleration (a).

(c) In the scenario provided, both athletes apply the same force. Athlete A has a heavier shot (greater mass), while Athlete B has a lighter shot (lesser mass).

(d) Since Athlete B's shot has less mass, the same amount of force will produce a higher acceleration (a) compared to the heavier shot of Athlete A.

(e) In shot put, higher acceleration at the point of release is critical for achieving greater distance.

Final Answer: Athlete B's shot will accelerate more.

Answer: (B)

Q21.

Solution

Concept:

Training methods in physical education are categorised based on their structure, intensity, and physiological impact. Fartlek training, a Swedish term meaning "speed play," was developed by Gösta Holmér. It is a unique training method because it sits between continuous training and interval training, offering a less rigid structure while still providing high-intensity physiological stimulus. It is primarily used to improve both aerobic and anaerobic capacities simultaneously by varying the intensity throughout a single session.

Solution:

(a) Fartlek training is defined by its lack of a rigid structure. Unlike interval training, where work and rest periods are strictly timed (e.g., 400m sprint followed by 90 seconds of rest), Fartlek relies on the athlete's internal feeling and the surrounding terrain.

(b) An athlete might sprint to a specific tree, jog uphill, walk for recovery, and then run at a steady pace for several minutes. This variety ensures that the heart rate is constantly fluctuating, which challenges the cardiovascular system more effectively than steady-state running.

(c) Option (A) is incorrect because it describes Interval Training. Option (C) refers to Isometric exercises (static resistance). Option (D) describes Continuous Training (Long Slow Distance).

(d) The correct answer is Option (B). The "play" aspect refers to the spontaneous changes in speed, while the "speed" aspect refers to the high-intensity bursts.

(e) In a CUET context, it is important to remember that Fartlek is an "unstructured" method where the recovery is "active" (jogging/walking) rather than passive, and the intensity is controlled by the athlete, not a whistle or a timer.

Final Answer: It is "Speed Play" where pace is varied according to terrain and feeling.

Answer: (B)

Q22.

Solution

Concept:

Test and measurement are critical for evaluating an athlete's physical status. Balance is a motor-related component of physical fitness, often divided into static balance (maintaining equilibrium while stationary) and dynamic balance (maintaining equilibrium while moving). The Flamingo Balance Test is a gold-standard protocol used internationally, including in the Eurofit Battery, to assess an individual's static balance and the strength of the muscles involved in stabilizing the lower body.

Solution:

(a) The Flamingo Balance Test specifically measures Static Balance. The protocol requires the participant to stand on a specific metal beam (usually 50cm long, 4cm high, and 3cm wide) on their preferred leg.

(b) The participant flexes the free leg at the knee and holds the foot of that leg with the hand on the same side, looking like a "flamingo."

(c) The test begins when the participant lets go of the instructor's hand and tries to maintain this position for one minute. Each time the participant loses balance (touches the floor or lets go of the foot), the timer stops, and a "fall" is recorded.

(d) The final score is the number of falls required to complete one full minute of balancing. A lower number of falls indicates superior static balance.

(e) Option (A) is incorrect because walking on a beam measures dynamic balance. Option (C) refers to the Shuttle Run, which measures agility. Option (D) refers to coordination tests.

(f) This test is highly sensitive to the integration of the visual, vestibular (inner ear), and proprioceptive systems.

Final Answer: Static balance; standing on one leg on a metal beam.

Answer: (B)

Q23.

Solution

Concept:

The "Big Five" Personality Traits, also known as the Five-Factor Model (OCEAN), provide a comprehensive framework for understanding human behavior in competitive environments. In team sports, certain traits are more conducive to group cohesion and "team spirit" than others. Agreeableness is a social-oriented trait that reflects how an individual interacts with others, focusing on harmony, cooperation, and altruism.

Solution:

(a) A person scoring high in Agreeableness is typically described as kind, sympathetic, cooperative, and warm. In a sports team, these individuals are the "glue" that holds the group together.

(b) They are more likely to trust their teammates' intentions, follow the captain's instructions without ego clashes, and provide emotional support to struggling peers. They prioritize the "we" over the "me."

(c) Extroversion (Option A) refers to being outgoing and energetic, but an extrovert can still be uncooperative or ego-driven.

(d) Conscientiousness (Option B) refers to discipline and hard work, which helps individual performance but doesn't necessarily dictate social cooperativeness.

(e) Openness to Experience (Option D) relates to creativity and trying new strategies.

(f) Therefore, for the specific qualities of being "highly cooperative and trusting," Agreeableness is the definitive trait. Athletes with low agreeableness might be more competitive or manipulative within their own team, potentially damaging locker room morale.

Final Answer: The trait is Agreeableness.

Answer: (C)

Q24.

Solution

Concept:

Communicable diseases (infectious diseases) are caused by pathogens such as bacteria, viruses, or parasites and can be spread from one person to another. Understanding the "mode of transmission" is key to prevention. Hepatitis A is a viral infection that primarily targets the liver, causing inflammation and affecting its ability to function. It is a significant health concern in communal environments like sports camps or schools where hygiene standards might be compromised.

Solution:

(a) The "feco-oral route" means the virus is shed in the feces of an infected person and is then ingested by another person through contaminated food, water, or close physical contact.

(b) Hepatitis A is a classic example of a water-borne/food-borne communicable disease. Symptoms include jaundice (yellowing of skin/eyes), fatigue, and abdominal pain, directly linked to liver distress.

(c) Tuberculosis (Option A) is a communicable disease, but it is primarily "airborne" (spread through droplets) and affects the lungs.

(d) Diabetes Mellitus (Option C) and Hypertension (Option D) are Non-Communicable Diseases (NCDs); they are lifestyle-related and cannot be "caught" from another person.

(e) In the context of the National Health Mission (NHM) and Physical Education, educating athletes about hand hygiene and clean water is the primary defense against Hepatitis A to ensure team availability and health.

Final Answer: The disease is Hepatitis A.

Answer: (B)

Q25.

Solution

Concept:

The Dronacharya Award, named after the legendary teacher-warrior from the Indian epic Mahabharata, is the highest national honor bestowed upon sports coaches in India. The award recognizes those who have produced "medal winners at prestigious international sports events." Since its inception in 1985, the government has updated the prize money and categories to reflect the increasing importance of technical mentorship in sports. It is currently divided into the "Regular Category" and the "Lifetime Category."

Solution:

(a) The Lifetime Category of the Dronacharya Award is reserved for coaches who have made an outstanding contribution to sports promotion and athlete development over a period of 20 years or more.

(b) As of the latest revisions by the Ministry of Youth Affairs and Sports, the cash prize for the Lifetime Category is ₹ 15 Lakh.

(c) To provide comparison, the Regular Category for Dronacharya Award (given for achievements over the previous 4 years) carries a cash prize of ₹ 10 Lakh.

(d) The Major Dhyan Chand Khel Ratna Award carries the highest prize money of ₹ 25 Lakh (Option D), while the Arjuna Award carries ₹ 15 Lakh.

(e) It is a common point of confusion in exams, but for the "Lifetime Dronacharya," the correct amount is ₹ 15,00,000 along with a bronze statue of Dronacharya, a certificate, and ceremonial dress.

Final Answer: The cash prize is ₹ 15 Lakh.

Answer: (C)

Q26.

Solution

Concept:

In sports medicine, soft tissue injuries are primarily classified into two categories: those affecting the connectors between bones (ligaments) and those affecting the contractile units or their attachments to bones (muscles and tendons). While the symptoms—pain, swelling, and loss of function—may appear identical to a layperson, the physiological structures involved are entirely different. "Strain" and "Sprain" are the two most commonly confused terms in sports injury management.

Solution:

(a) A **Strain** is an injury to a muscle or a tendon. Tendons are the tough, fibrous tissues that connect muscles to bones. Strains often occur due to overstretching or over-contraction, commonly referred to as a "pulled muscle." They are frequent in sports requiring explosive movements, like sprinting or jumping.

(b) A **Sprain**, on the other hand, is an injury to a ligament. Ligaments are the bands of connective tissue that join two bones together in a joint, providing stability. A sprain occurs when a joint is forced beyond its normal range of motion, such as twisting an ankle.

(c) To remember the difference, the letter "T" in "Strain" can stand for Tendon/Muscle, while "Sprain" relates to the joint's ligaments.

(d) Option (A) is the reverse of the correct definition. Option (B) and (D) involve bones and nerves, which fall under fractures or neurological injuries, respectively.

(e) Therefore, Option (C) is the only correct answer. Understanding this distinction is vital for applying the RICE (Rest, Ice, Compression, Elevation) protocol effectively, as ligament injuries generally take longer to heal than minor muscle strains due to lower blood supply.

Final Answer: Strain involves Muscle/Tendon; Sprain involves Ligament.

Answer: (C)

Q27.

Solution

Concept:

The Harvard Step Test is a classic sub-maximal cardiovascular endurance test developed by Brouha et al. (1943). It was designed to measure "Aerobic Capacity" or "Physical Efficiency" by checking how quickly the heart rate recovers after a specific period of intense physical exertion. Cardiovascular endurance, or VO2 Max, is the ability of the heart and lungs to supply oxygen-rich blood to the working muscle tissues and the ability of those muscles to use that oxygen to produce energy for movement.

Solution:

(a) The protocol involves the participant stepping up and down on a gym bench (20 inches high for men, 16 inches for women) at a rate of 30 steps per minute for 5 minutes, or until exhaustion.

(b) Immediately after the test, the heart rate (pulse) is measured at specific intervals (1 to 1.5 mins, 2 to 2.5 mins, and 3 to 3.5 mins).

(c) A fitness index score is calculated using the formula: $(100 \times \text{test duration in seconds})/(2 \times \text{sum of pulse counts in recovery})$.

(d) A higher index indicates a faster heart rate recovery, which correlates directly with high Cardiovascular Endurance and a more efficient circulatory system.

(e) Option (A) is incorrect as anaerobic tests usually involve shorter, higher-intensity bursts like the Wingate test. Options (C) and (D) are measured by strength dynamometers or sit-and-reach tests, respectively.

(f) In the CUET syllabus, this test is a high-yield topic within the "Test and Measurement" unit.

Final Answer: It measures Cardiovascular Endurance.

Answer: (B)

Q28.

Solution

Concept:

Suryanamaskar (Sun Salutation) is a comprehensive yogic sequence consisting of 12 distinct postures performed in a continuous flow. It is considered a complete exercise as it combines Asana, Pranayama (breath control), and meditation. Each posture in the sequence targets specific muscle groups and internal organs. Padahastasana, also known as the "Hand-to-Foot Pose," is the third and tenth position in the traditional 12-step cycle.

Solution:

(a) **Padahastasana:** In this stage, the practitioner exhales and bends forward from the hips until the palms touch the floor beside the feet. This movement creates a massive stretch along the entire "posterior chain," which includes the hamstrings, calves, and the erector spinae muscles of the back.

(b) It is highly beneficial for improving flexibility and relieving tension in the spine, provided the knees are kept straight.

(c) **Ashwa Sanchalanasana (Option A):** This is the "Equestrian Pose," which is a lunge that primarily stretches the hip flexors.

(d) **Parvatasana (Option C):** This is the "Mountain Pose" (inverted V), which focuses on the shoulders and calves.

(e) **Bhujangasana (Option D):** This is the "Cobra Pose," which is a backbend that stretches the abdominal muscles and strengthens the lower back, the opposite of Padahastasana.

(f) Therefore, for the specific purpose of a deep forward fold targeting the hamstrings, Padahastasana is the correct stage.

Final Answer: The stage is Padahastasana.

Answer: (B)

Q29.

Solution

Concept:

In the 1940s, psychologist William Sheldon developed a theory of "Somatotypes," which categorized human physiques into three fundamental body types based on their skeletal frame and body composition. While modern sports science recognizes that most people are a mix of these types, Sheldon's classification remains a foundational concept in Physical Education to explain why certain body types are naturally predisposed to specific sports (e.g., swimming vs. gymnastics).

Solution:

(a) **Endomorph:** This body type is characterized by a "round" or "pear-shaped" appearance. Physiologically, endomorphs tend to have wider hips, a shorter stature, and a higher predisposition to store body fat. They often find it easier to gain weight but harder to lose it. In sports, endomorphs might excel in activities requiring raw power or mass, such as heavy-weight wrestling or shot put.

(b) **Ectomorph (Option A):** This type is characterized by a thin, lean frame, narrow shoulders, and very little body fat or muscle mass. They are "hard gainers" often suited for long-distance running.

(c) **Mesomorph (Option B):** This is the "athletic" build, characterized by broad shoulders, a narrow waist, and a high percentage of muscle mass. They respond quickly to strength training.

(d) The description in the question—"soft, round body, wide hips"—is the textbook definition of an Endomorph.

(e) Understanding these types helps coaches tailor nutrition and training programs to an athlete's natural genetic blueprint.

Final Answer: The body type is Endomorph.

Answer: (C)

Q30.

Solution

Concept:

The Major Dhyan Chand Khel Ratna Award (formerly the Rajiv Gandhi Khel Ratna) is the highest sporting honor in India. It was instituted to recognize the most spectacular and outstanding performance by a sportsperson over a period of four years. Since its inception, it has been awarded to the icons of Indian sports who have brought international glory to the country. It is a critical part of the "Awards and Career" unit in the Physical Education syllabus.

Solution:

(a) The award was first introduced in the academic/sporting year of 1991-92.

(b) The very first recipient of this prestigious honor was the Grandmaster Vishwanathan Anand. He was recognized for his extraordinary achievements in the field of Chess, having established himself as a world-class competitor and raising the profile of the game in India.

(c) **Sachin Tendulkar (Option A):** While a recipient, he received the award later, in 1997-98.

(d) **Abhinav Bindra (Option C):** He received it in 2001 after his success in shooting.

(e) **Mary Kom (Option D):** The legendary boxer received the honor in 2009.

(f) Knowing the "first" recipients of national awards is a frequent requirement in CUET exams to test the historical depth of a student's knowledge regarding the Indian sports administrative system.

Final Answer: The first recipient was Vishwanathan Anand.

Answer: (B)

Q31.

Solution

Concept:

Current affairs in sports are an integral part of the CUET UG Physical Education syllabus, particularly regarding India's growing role as a global sporting hub. Hosting international tournaments under the aegis of world governing bodies (like the BWF - Badminton World Federation) reflects the country's infrastructural readiness and administrative capability in specific sports.

Solution:

(a) The Badminton Association of India (BAI) and the BWF recently confirmed the hosts for upcoming major junior events.

(b) **Guwahati**, Assam, has been officially designated as the host city for the 2025 BWF World Junior Championships.

(c) This event is significant because it brings the world's best young talent to India, providing local players with international exposure.

(d) Guwahati was chosen due to its state-of-the-art National Centre of Excellence, which has become a premier training ground for Indian badminton.

(e) While Hyderabad and Bengaluru are traditional badminton powerhouses, the specific government and federation initiative for 2025 is centered in Guwahati to decentralize sports excellence.

Final Answer: The host city is Guwahati.

Answer: (B)

Q32.

Solution

Concept:

The 2024 Paris Olympics (XXXIII Olympiad) performance of Indian athletes is a high-yield topic for "Current Affairs in Sports." Knowledge of specific weight categories is essential because wrestling, boxing, and weightlifting are divided into precise divisions to ensure fair competition based on body mass.

Solution:

(a) Aman Sehrawat, a rising star from the Chhatrasal Stadium lineage, was India's sole male wrestler to qualify for the Paris 2024 Olympics.

(b) He competed in the 57 kg Men's Freestyle category.

(c) After a series of dominant performances, he faced a tough semi-final but recovered to win the bronze medal match against Darian Cruz of Puerto Rico.

(d) At the age of 21, his achievement made him India's youngest individual Olympic medalist.

(e) Options like 65 kg (associated with Bajrang Punia) or 74 kg (associated with Yogeshwar Dutt/Sushil Kumar in the past) are incorrect for Aman's specific 2024 entry.

Final Answer: The weight category is 57 kg.

Answer: (A)

Q33.

Solution

Concept:

The Major Dhyan Chand Khel Ratna Award is India's highest sporting honor. Recognizing the current winners and their respective sports is a standard requirement for physical education exams, as it demonstrates awareness of the pinnacle of domestic sports achievement.

Solution:

(a) For the year 2023, the Khel Ratna was awarded to the dynamic duo of Satwiksairaj Rankireddy and Chirag Shetty.

(b) They are world-class Badminton players specializing in the Men's Doubles category.

(c) Their selection was based on a historic year where they reached World No. 1 ranking, won the Asian Games gold medal, and secured several BWF World Tour titles (including the Indonesia Open 1000).

(d) They are the first-ever doubles pair in badminton to receive this honor together, highlighting the shift in focus towards doubles excellence in Indian badminton.

(e) Options like Table Tennis (Sharath Kamal won in 2022) or Shooting are incorrect for this specific 2023 duo.

Final Answer: The sport is Badminton.

Answer: (C)

Q34.

Solution

Concept:

Passage-based questions test an athlete's ability to extract specific physiological facts from a technical text. This specific passage focuses on the biological underpinnings of recovery, emphasizing that it is a period of "adaptation" where the body repairs the "damage" caused during training.

Solution:

(a) The passage explicitly states: "Recovery is an active physiological process involving... the repair of micro-tears in muscle fibers."

(b) During high-intensity training, especially eccentric movements, muscle fibers experience microscopic damage. The soreness felt (DOMS) is often a result of this.

(c) The recovery phase allows the body to synthesize new proteins to patch these tears, making the fiber stronger than before (the principle of super-compensation).

(d) Hyperplasia (Option A), which is the increase in the number of fibers, is generally not supported as a major factor in human muscle growth compared to hypertrophy (increase in size).

(e) Therefore, based strictly on the text provided, repairing micro-tears is the correct biological objective.

Final Answer: Repairing micro-tears in muscle fibers.

Answer: (B)

Q35.

Solution

Concept:

Hydrotherapy is a common recovery modality in elite sports. Contrast baths are a specific application involving the rapid alternation between hot and cold water immersion. This technique utilizes the body's natural vasomotor responses to environmental temperature changes to "flush" the metabolic system.

Solution:

(a) According to the passage, modern athletes use these methods to accelerate recovery by "manipulating blood flow."

(b) Cold water immersion causes vasoconstriction (narrowing of blood vessels), which helps reduce inflammation and swelling.

(c) Hot water immersion causes vasodilation (widening of blood vessels), which increases blood flow to the tissues.

(d) The alternating "pump" action of vasoconstriction and vasodilation helps remove metabolic byproducts like lactic acid and brings in fresh, oxygenated blood and nutrients to the muscles.

(e) Anaerobic glycolysis (Option D) is an energy production process, not a recovery mechanism induced by water temperature.

Final Answer: Vasoconstriction and vasodilation.

Answer: (C)

Q36.

Solution

Concept:

The "Principle of Overload" is the foundational rule of exercise physiology. It dictates that for a body system (cardiovascular, muscular, or skeletal) to increase its capacity, it must be stressed with a workload that is higher than its current physiological baseline. Without overload, the body remains in a state of homeostasis, and no further adaptation or improvement in performance occurs. Overload can be achieved by manipulating the FITT variables: Frequency, Intensity, Time, and Type of exercise.

Solution:

(a) The passage explicitly defines this concept: "To improve, an athlete must be exposed to a stimulus greater than what they are accustomed to."

(b) This "stimulus greater than normal" forces the body to adapt by strengthening muscle fibers, increasing mitochondrial density, or improving heart stroke volume.

(c) Principle of Specificity (Option A): This refers to training being relevant to the specific sport (e.g., a swimmer should swim).

(d) Principle of Reversibility (Option B): This states that if training stops, the gains are lost ("use it or lose it").

(e) Principle of Continuity (Option D): This emphasizes that training must be regular and consistent without long breaks.

(f) Since the question specifically targets the need for a "higher-than-normal stimulus," the Principle of Overload is the only correct answer.

Final Answer: The principle is the Principle of Overload.

Answer: (C)

Q37.

Solution

Concept:

Training is a double-edged sword. While overload is necessary for growth, it must be balanced with the body's ability to recover. "Overtraining Syndrome" (OTS) is a formal clinical condition resulting from a long-term imbalance between training load and recovery. It is characterized by a plateau or decline in performance, persistent fatigue, sleep disturbances, and a weakened immune system. In the context of the provided text, recovery is described as an "active physiological process" that must occur to avoid this negative state.

Solution:

(a) The text states: "However, if the load is too high without adequate 'Rest and Recovery,' it leads to 'Overtraining Syndrome'."

(b) Super-compensation (Option A): This is actually the *desired* outcome of training, where the body recovers to a level higher than the original baseline. This only happens *with* adequate recovery.

(c) Neuromuscular efficiency (Option C): This improves with proper training, not through lack of recovery.

(d) Vital Capacity (Option D): This is the maximum amount of air a person can expel from the lungs, which is an anatomical/physiological measure not directly caused by lack of recovery.

(e) Therefore, the direct consequence of neglecting the recovery processes mentioned in the passage is the onset of Overtraining Syndrome.

Final Answer: The outcome is Overtraining Syndrome.

Answer: (B)

Q38.

Solution

Concept:

Energy for muscular contraction is stored in several forms. Glycogen is the primary storage form of glucose (sugar) in the body, found mostly in the liver and skeletal muscles. During high-intensity training, the body breaks down muscle glycogen to provide the ATP required for movement. The depletion of glycogen stores is a major cause of fatigue. Restoration of these stores is a critical pillar of the recovery phase, often facilitated by post-workout carbohydrate intake.

Solution:

(a) The passage explicitly identifies the specific energy store: "Recovery... involving the restoration of energy stores (glycogen)."

(b) Amino Acids (Option A): These are the building blocks of proteins, used for tissue repair (muscle tears), but they are not categorized as the primary "energy store" restored in this context.

(c) Triglycerides (Option B): These are fats. While an energy source, they are typically used in low-intensity exercise and are not the primary focus of rapid post-training restoration mentioned in the text.

(d) Cholesterol (Option D): This is a structural lipid and precursor for hormones, not a fuel source for exercise.

(e) Therefore, based on the text's emphasis on energy restoration, Glycogen is the correct scientific term.

Final Answer: The energy store is Glycogen.

Answer: (C)

Q39.

Solution

Concept:

Projectile motion in sports is rarely "pure" because most events take place in an atmosphere. In a vacuum, gravity is the only force acting on a projectile, making 45° the mathematically perfect angle for range. However, when an object like a javelin—which has a large surface area and is shaped like an airfoil—moves through the air, it generates "Lift" (upward force) and "Drag" (opposing force).

Solution:

(a) The passage notes: "In a vacuum, the optimal angle... is 45°. However, in sports, air resistance (aerodynamics) plays a crucial role."

(b) A javelin "slices" through the air. If thrown at 45°, the large surface area would create excessive drag and the wind might catch it improperly.

(c) By throwing at a lower angle (30° to 35°), the athlete ensures the javelin remains aerodynamic, utilizing the "Lift" generated by its shape to stay airborne longer while moving forward faster.

(d) This highlights the difference between theoretical physics (kinematics in a vacuum) and applied biomechanics (kinematics in air).

(e) Therefore, the lower angle is chosen specifically to account for air resistance and aerodynamic lift.

Final Answer: To account for air resistance and aerodynamic lift.

Answer: (B)

Q40.

Solution

Concept:

While height and angle are important, the velocity at which an object leaves the hand (Speed of Release) is the most dominant variable in projectile range. This is because the mathematical formula for the range (R) of a projectile involves the square of the initial velocity (v^2). This means that a small percentage increase in speed results in a much larger percentage increase in distance compared to similar changes in height or angle.

Solution:

(a) The text explicitly states: "The 'Speed of Release' is considered the most critical factor because the distance is proportional to the square of the velocity."

(b) In elite Shot Put or Javelin, athletes focus heavily on "explosive power" to maximize this release speed.

(c) Angle of Release (Option A): Important for finding the right trajectory, but secondary to speed.

(d) Height of Release (Option B): This provides a small advantage (taller athletes have a slight edge), but it is largely fixed by an athlete's anatomy.

(e) Surface Friction (Option D): This is not a factor for the flight of a projectile once it has left the hand.

(f) Therefore, speed of release is the definitive answer as per the passage's biomechanical analysis.

Final Answer: The most influential factor is Speed of Release.

Answer: (C)

Q41.

Solution

Concept:

Aerodynamics is the study of how gases interact with moving objects. In the context of throwing events, "Drag" (also known as air resistance) is a mechanical force generated by the interaction and contact of a solid body with a fluid (like air). It acts in the opposite direction to the relative motion of the object. For a javelin, which is a streamlined projectile, managing drag is essential for maintaining horizontal velocity over time.

Solution:

(a) The passage mentions two aerodynamic forces: 'Lift' and 'Drag'.

(b) Lift is the force that acts perpendicular to the direction of motion, helping to keep the javelin in the air.

(c) Drag is the force that opposes the javelin's forward motion through the air. It is caused by the friction between the air molecules and the surface of the javelin, as well as the pressure difference created as the javelin displaces air.

(d) Inertia (Option D) is a property of matter that resists changes in motion, but it is not an external atmospheric force.

(e) Gravity (Option B) acts vertically downward and is not the force that "opposes motion through the air" in a horizontal sense.

(f) Therefore, according to the text, the specific force opposing the javelin's motion is Drag.

Final Answer: The force is Drag.

Answer: (C)

Q42.

Solution

Concept:

The optimal angle of release for a projectile changes depending on the relative heights of the release point and the landing point. In textbook physics, where the launch and landing heights are equal, 45° is the optimum. However, in track and field events like Shot Put or Javelin, the projectile is released from the athlete's hand (approximately 1.8 to 2 meters above the ground) and lands on the field (ground level).

Solution:

(a) When the release height is higher than the landing surface, the projectile spends more time in the air during its downward phase.

(b) Biomechanical studies show that for every increase in release height relative to the landing area, the mathematically optimal angle of release decreases to slightly **less than 45°**.

(c) For an elite shot-putter, the optimal angle typically ranges between 37° and 42°. This lower angle allows the athlete to maximize the horizontal component of their release velocity while still ensuring sufficient flight time.

(d) Option (A) is only for equal heights. Option (D) would be for a scenario where one is throwing "uphill."

(e) Therefore, because of the elevated release point of a human athlete, the optimal angle is slightly less than 45°.

Final Answer: The angle should be slightly less than 45°.

Answer: (B)

Q43.

Solution

Concept:

This question requires identifying a specific mathematical relationship mentioned in the provided text. In biomechanics, the range (R) of a projectile is determined by the equation $R = (v^2 \cdot \sin 2\theta)/g$. This formula clearly demonstrates that velocity (v) is not just a linear factor but a quadratic one.

Solution:

(a) The passage explicitly states: "the distance is proportional to the square of the velocity."

(b) This means if an athlete increases their release speed by only 10%, the resulting distance does not just increase by 10%; it increases by approximately 21% ($1.1 \times 1.1 = 1.21$).

(c) This is why "explosive power" and "fast-twitch muscle fiber" recruitment are the most sought-after traits in throwing athletes—small gains in speed yield exponential gains in distance.

(d) Square root (Option A) would imply that speed gains have diminishing returns, which is incorrect.

(e) Therefore, based on the text and the laws of physics, the distance is proportional to the square of velocity.

Final Answer: It is proportional to the square of velocity.

Answer: (C)

Q44.

Solution

Concept:

Non-communicable diseases (NCDs) are medical conditions that are not infectious and cannot be passed from person to person. They are typically of long duration and result from a combination of genetic, physiological, environmental, and behavioral factors. Type 2 Diabetes is a classic NCD and a major focus of modern health education due to its link with sedentary lifestyles and obesity.

Solution:

(a) Diabetes Mellitus is characterized by "hyperglycemia" (high blood sugar).

(b) In Type 2 Diabetes, the body either develops "insulin resistance" (the cells do not respond to insulin) or the pancreas fails to produce enough insulin to maintain normal glucose levels.

(c) This condition is managed through exercise, diet, and medication, making it a critical topic for physical education professionals.

(d) Malaria (Option A), Cholera (Option C), and Influenza (Option D) are all "Communicable" diseases caused by parasites, bacteria, and viruses, respectively.

(e) Therefore, Type 2 Diabetes is the correct non-communicable condition described.

Final Answer: The disease is Type 2 Diabetes.

Answer: (B)

Q45.

Solution

Concept:

Strength training exercises are categorized by the type of muscle contraction and the movement of the joint. Isokinetic exercise is a specific type of strength training that uses specialized machines (like Cybex or Biodex) to ensure that the muscle contracts at a constant, pre-set speed, regardless of how much force the user applies.

Solution:

(a) In Isokinetic training, the machine provides "accommodating resistance." This means if the user pushes harder, the machine increases the resistance to keep the speed of movement identical.

(b) This allows the muscle to be challenged at its maximum capacity throughout the entire range of motion, which is not possible with free weights (Isotonic).

(c) Option (A) describes "Isometric" exercise (no change in length).

(d) Option (D) describes "Plyometric" exercise (jumps/hops).

(e) Therefore, the defining characteristic of Isokinetic exercise is a constant speed of movement.

Final Answer: Movement at a constant speed regardless of force.

Answer: (B)

Q46.

Solution

Concept:

A training session is incomplete without a structured "Cool Down" or "Limbering Down" phase. This phase transitions the body from a state of high exertion back to its resting physiological state. It is essential for preventing blood pooling in the extremities and for the efficient removal of metabolic byproducts.

Solution:

(a) During intense exercise, the "muscle pump" helps return blood to the heart. If exercise stops abruptly, blood can pool in the legs, leading to dizziness.

(b) Limbering down involves low-intensity aerobic activity (like jogging) followed by static stretching.

(c) This helps to **gradually return the heart rate and breathing rate to normal levels** and assists in the "flushing" of lactic acid from the muscle tissue, reducing post-exercise soreness.

(d) Increasing body temperature (Option A) is the goal of the warm-up, not the cool-down.

(e) Therefore, the primary purpose is the gradual normalization of the body's systems.

Final Answer: To return heart rate to normal and remove waste.

Answer: (B)

Q47.

Solution

Concept:

Bone density and composition change significantly with age. In children, bones have a higher ratio of organic matter (collagen) to inorganic matter (calcium/phosphorus) compared to adults. This makes their bones more "pliable" and resilient but also leads to unique fracture patterns.

Solution:

(a) A Greenstick Fracture occurs when a bone bends and cracks, instead of breaking completely into separate pieces. It looks similar to what happens when you try to break a "green" (living) branch from a tree.

(b) This happens in children because their bones are **more flexible** and possess a thick, strong periosteum (the outer covering of the bone) that often remains intact on one side of the break.

(c) As people age, bones become more mineralized and brittle, leading to complete breaks rather than greenstick patterns.

(d) Therefore, the flexibility and the nature of the child's periosteum are the primary reasons for this specific injury type.

Final Answer: Because their bones are more flexible and have a thick periosteum.

Answer: (B)

Q48.

Solution

Concept:

Vitamins are classified based on their solubility, which determines how they are absorbed, transported, and stored in the body. Fat-soluble vitamins (A, D, E, and K) are stored in the liver and fatty tissues, while water-soluble vitamins (B-complex and C) must be dissolved in water before they can be absorbed.

Solution:

(a) Vitamin B-Complex and Vitamin C are water-soluble.

(b) Because they are not stored in the body to any significant degree, any excess amount is excreted through urine. This means they must be consumed regularly through the diet to maintain health.

(c) Vitamins A, D, and K (Options A, B, and D) are fat-soluble and can be stored for long periods, which also means they carry a higher risk of toxicity if taken in excessive supplemental doses.

(d) Athletes particularly need B-vitamins as they act as co-enzymes in energy metabolism.

Final Answer: The water-soluble vitamin is Vitamin B-Complex.

Answer: (C)

Q49.

Solution

Concept:
Newton's Third Law of Motion states that "for every action, there is an equal and opposite reaction." This law is the basis for all locomotion in sports. To move in one direction, an athlete must apply a force in the opposite direction against a surface or a fluid.
Solution:

(a) When a swimmer pushes against the water with their hands and feet (Action), the water pushes back against the swimmer with an equal force (Reaction).

(b) This reaction force is what propels the swimmer forward through the pool.

(c) Similarly, a sprinter pushes back against the starting blocks to move forward.

(d) Option (B) is a state of equilibrium. Option (C) relates to gravity and mass, but is phrased incorrectly for a physics law.

(e) Therefore, the swimmer's movement is a textbook application of the Law of Action and Reaction.

Final Answer: A swimmer pushing against water.

Answer: (A)

Q50.

Solution

Concept:
Agility is the ability to change the direction of the body rapidly and accurately while in motion. It is a complex motor skill that requires a combination of balance, coordination, speed, and reflexes. In physical education batteries, specific tests are used to isolate these components.
Solution:

(a) The Shuttle Run (commonly 4x10 meters) involves running to a line, picking up a block, returning, and repeating the process.

(b) Because the test requires the athlete to decelerate, turn 180 degrees, and accelerate repeatedly, it is the standard measure for Agility and Coordination.

(c) Pure speed (Option A) is better measured by a 30m or 50m straight sprint. Aerobic endurance (Option C) is measured by long-duration tests like the 12-minute run.

(d) Therefore, the shuttle run's primary focus is the rapid change of direction.

Final Answer: It assesses Agility and Coordination.

Answer: (B)

Answer Key

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