

CUET-UG Physical Education Sample Paper-5

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. The National Rural Health Mission (NRHM) was launched with a focus on 'equity, affordability, and quality' healthcare. In the context of NRHM, which of the following is the primary responsibility of an ASHA worker at the grassroots level?

- (A) Managing the tertiary healthcare budget of the district hospital.
- (B) Acting as a link between the community and the public health system to facilitate institutional delivery.
- (C) Conducting complex radiological examinations in village-level dispensaries.
- (D) Formulating national policies for the prevention of non-communicable diseases.

Q2. According to the nutritional standards set by the Mid-Day Meal Scheme (PM-POSHAN), what is the mandatory energy and protein requirement for a student in the 'Upper Primary' (Class VI to VIII) category?

- (A) 450 Calories and 12 grams of Protein
- (B) 700 Calories and 20 grams of Protein
- (C) 800 Calories and 25 grams of Protein
- (D) 1000 Calories and 30 grams of Protein

Q3. Non-communicable diseases (NCDs) have emerged as a significant health threat. Which of the following sets of conditions entirely represents the '4x4' framework of NCDs and their common risk factors?



- (A) Influenza, Malaria, Diabetes, and Hypertension
- (B) Cardiovascular diseases, Cancer, Chronic Respiratory diseases, and Diabetes
- (C) Tuberculosis, Obesity, Cholera, and Asthma
- (D) HIV/AIDS, Cancer, Coronary Heart Disease, and Typhoid

Q4. To ensure 'Inclusion' in physical education for Children with Special Needs (CWSN), which strategy is considered most effective for modifying a sports environment?

- (A) Standardizing rules for all participants to ensure "fair play."
- (B) Implementing the 'STEP' (Space, Task, Equipment, People) principle to adapt activities.
- (C) Encouraging CWSN to strictly observe games from the sidelines to learn tactics.
- (D) Limiting participation only to those with mild physical impairments to maintain game speed.

Q5. The 'Janani Suraksha Yojana' (JSY) is a safe motherhood intervention. What is the fundamental mechanism used by this scheme to reduce maternal and neonatal mortality?

- (A) Providing free sports equipment to rural schools.
- (B) Integrating cash assistance with institutional delivery and post-delivery care.
- (C) Mandatory physical education for all pregnant women in urban areas.
- (D) Providing international scholarships for medical students.

Q6. In the context of the National Health Mission, the 'Janani Suraksha Yojana' (JSY) is a 100% centrally sponsored scheme that integrates cash assistance with delivery and post-delivery care.

- (A) True
- (B) False



- Q7.** Identify the correct sequence of the stages of 'General Adaptation Syndrome' (GAS) as described by Hans Selye in the context of sports training load:
- (A) Alarm Reaction → Exhaustion → Resistance
 - (B) Resistance → Alarm Reaction → Exhaustion
 - (C) Alarm Reaction → Resistance → Exhaustion
 - (D) Exhaustion → Resistance → Alarm Reaction
- Q8.** Which type of lever is being utilized at the ankle joint when a basketball player rises on their toes (plantar flexion) to take a jump shot?
- (A) First Class Lever
 - (B) Second Class Lever
 - (C) Third Class Lever
 - (D) Fourth Class Lever
- Q9.** The 'Sitali' Pranayama is unique because the breath is inhaled through:
- (A) The left nostril only
 - (B) Both nostrils simultaneously
 - (C) A curled tongue
 - (D) The throat (constricted glottis)
- Q10.** Identify the postural deformity characterized by an abnormal lateral (sideways) curvature of the spine:
- (A) Kyphosis
 - (B) Lordosis
 - (C) Scoliosis
 - (D) Knock Knees
- Q11.** In a single knock-out tournament of 19 teams, how many total 'Byes' must be granted in the first round?



- (A) 13
- (B) 5
- (C) 11
- (D) 3

Q12. Which branch of biomechanics deals specifically with the 'study of forces' that cause or change the motion of an athlete?

- (A) Kinematics
- (B) Kinetics
- (C) Statics
- (D) Anatomy

Q13. A 'Greenstick Fracture' is most commonly observed in:

- (A) Professional athletes
- (B) Senior citizens
- (C) Children
- (D) Women with osteoporosis

Q14. The primary nutritional objective of the 'Mid-Day Meal' scheme is to provide children with at least how many calories per school day (for upper primary)?

- (A) 300 calories
- (B) 450 calories
- (C) 700 calories
- (D) 1000 calories

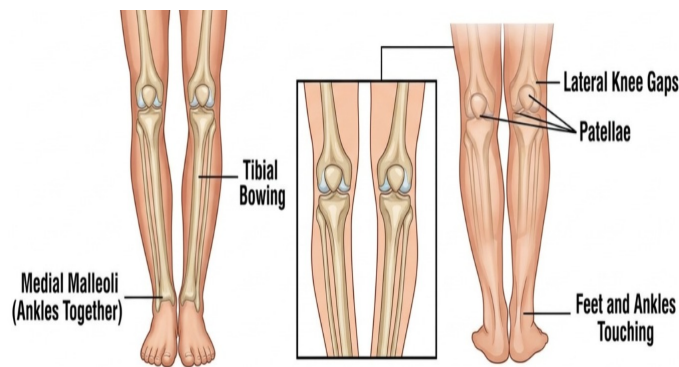
Q15. Which of the following training methods is specifically characterized by "speed play," where the athlete varies the pace based on the terrain and their own internal feeling?

- (A) Interval Training



- (B) Isometric Training
- (C) Fartlek Training
- (D) Isokinetic Training

Q16. Observe the following image illustrating a common postural deformity of the lower extremities. Identify the condition where the knees stay wide apart when a person stands with their feet and ankles together.



- (A) Knock Knees (Genu Valgum)
- (B) Bow Legs (Genu Varum)
- (C) Flat Foot (Pes Planus)
- (D) Round Shoulders

Q17. The following image represents a specific yogic 'Kriya' used for cleansing the nasal passage using a specially designed pot and saline water. Name this Kriya:



- (A) Sutra Neti
- (B) Jala Neti



- (C) Vaman Dhauti
(D) Kapalbhathi

Q18. Match List-I (Nutrient Category) with List-II (Specific Example/Source) to ensure a balanced athletic diet:

List-I	List-II
(A) Macro Nutrient (Carbohydrate)	(I) Calcium
(B) Micro Nutrient (Mineral)	(II) Ascorbic Acid
(C) Macro Nutrient (Protein)	(III) Glycogen/Starch
(D) Micro Nutrient (Vitamin)	(IV) Amino Acids

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

Q19. The process of identifying and nurturing potential sports stars at a young age through systematic scientific testing is known as _____

- (A) Talent Identification
 (B) Periodization
 (C) Sports Management
 (D) Biomechanical Analysis

Q20. Which of the following Newton's Laws of Motion explains why a sprinter pushes hard against the starting blocks to move forward at the start of a race?

- (A) Law of Inertia
 (B) Law of Acceleration
 (C) Law of Action and Reaction
 (D) Law of Conservation of Energy

Q21. In the Rikli and Jones Senior Citizen Fitness Test, the 'Chair Stand Test' is specifically used to measure:



- (A) Upper body flexibility
- (B) Lower body strength
- (C) Aerobic endurance
- (D) Agility and dynamic balance

Q22. A person with a 'Type A' personality, as described by Friedman and Rosenman, is most likely to exhibit:

- (A) A relaxed and easy-going nature
- (B) High levels of patience and low stress
- (C) Competitiveness, urgency, and hostility
- (D) High creativity and introversion
- (E)

Q23. The 'Flamingo Balance Test' is a recognized assessment tool used to measure which component of fitness?

- (A) Static Balance
- (B) Explosive Power
- (C) Reaction Time
- (D) Cardiovascular Endurance

Q24. Which award is the highest sporting honor in India, given for the most outstanding performance by a sportsperson over a period of four years?

- (A) Arjuna Award
- (B) Dronacharya Award
- (C) Major Dhyan Chand Khel Ratna Award
- (D) Padma Shri

Q25. What is the standard measurement of the distance between the two sets of wickets on a professional cricket pitch?



- (A) 20 yards
- (B) 22 yards
- (C) 24 yards
- (D) 25 yards

Q26. In Yoga, the practice of 'Pratyahara' involves:

- (A) Breath control
- (B) Physical postures
- (C) Withdrawal of the senses from external objects
- (D) Intense meditation on a single point

Q27. The 'Female Athlete Triad' is a medical syndrome consisting of which three interrelated conditions?

- (A) Obesity, Diabetes, Hypertension
- (B) Disordered Eating, Amenorrhea, Osteoporosis
- (C) Anaemia, Scoliosis, Kyphosis
- (D) Stress, Anxiety, Depression

Q28. Which type of muscle fibers are primarily responsible for sustained, long-distance activities like a marathon?

- (A) Fast-twitch (Type IIb)
- (B) Slow-twitch (Type I)
- (C) Intermediate-twitch (Type IIa)
- (D) Voluntary-twitch

Q29. The 'Double League' tournament formula to calculate the total number of matches, where N is the number of teams, is:

- (A) $N(N - 1)/2$
- (B) $N(N - 1)$



- (C) $(N - 1)$
- (D) $2(N - 1)$

Q30. What is the primary role of an 'ASHA' worker under the National Rural Health Mission (NRHM)?

- (A) Performing complex surgeries in rural hospitals
- (B) Acting as a community health activist and link to the health system
- (C) Managing the district-level financial budget
- (D) Training international athletes in sports medicine

Q31. Which Indian city has been officially announced as the host for the 2024 BWF World Junior Championships, marking a significant milestone for Indian Badminton?

- (A) New Delhi
- (B) Guwahati
- (C) Hyderabad
- (D) Bangalore

Q32. In the 2024 Paris Olympics, who became the first Indian athlete to win two medals in a single edition of the Olympic Games post-independence?

- (A) Neeraj Chopra
- (B) Manu Bhaker
- (C) PV Sindhu
- (D) Lakshya Sen

Q33. The 'Khel Khelo India' program was recently integrated with which national mission to enhance fitness awareness among school children?

- (A) Fit India Movement
- (B) Swachh Bharat Abhiyan



- (C) Digital India
- (D) Skill India

Read the following passage and answer questions 34 to 38: Biomechanics in sports involves the study of the skeletal and muscular systems under the laws of physics. One of the most fundamental aspects is the application of Levers. A lever consists of a rigid bar (bone), a fulcrum (joint), an effort (muscle contraction), and a resistance (weight). In the human body, third-class levers are the most common, where the effort is located between the fulcrum and the resistance. This arrangement is designed for speed and range of motion rather than brute strength. For instance, when a player performs a bicep curl or swings a racket, they are utilizing third-class levers to achieve high velocity at the distal end of the limb.

- Q34.** Based on the passage, what is the primary structural advantage of a third-class lever in the human body?
- (A) Maximum force production
 - (B) Speed and range of motion
 - (C) Stability and balance
 - (D) Reducing the effort required
- Q35.** According to the text, which component of the lever system represents the 'Fulcrum' in human movement?
- (A) The Muscle
 - (B) The Bone
 - (C) The Joint
 - (D) The External Weight
- Q36.** In a third-class lever, what is the relative position of the 'Effort'?
- (A) Between the Fulcrum and Resistance
 - (B) At one end with the Fulcrum in the middle



- (C) Opposite to the Resistance with the Fulcrum at the end
- (D) The passage does not specify

Q37. Which sporting action mentioned in the passage serves as an example of a third-class lever?

- (A) Rising on toes
- (B) Swinging a racket
- (C) Doing a push-up
- (D) Heading a football

Q38. The passage implies that third-class levers are "most common" in the human body. This suggests that the human musculoskeletal system is optimized primarily for:

- (A) Lifting heavy loads with ease
- (B) Rapid limb movement
- (C) Maintaining static postures
- (D) Minimizing energy expenditure

Read the following passage and answer questions 39 to 43: Psychology plays a pivotal role in athletic performance. One popular framework is the 'Self-Determination Theory' (SDT), which posits that for an athlete to be truly motivated, three basic psychological needs must be met: Autonomy, Competence, and Relatedness. Autonomy refers to the athlete feeling in control of their own training; Competence is the feeling of mastery over skills; and Relatedness is the sense of belonging within a team. When these needs are satisfied, athletes experience 'Intrinsic Motivation,' which leads to long-term persistence and better mental health, as opposed to 'Extrinsic Motivation' driven by trophies or money.

Q39. According to the passage, 'Relatedness' in a sporting context refers to:

- (A) The ability to relate sports to academic life
- (B) A sense of belonging and connection to a team



- (C) Comparing one's performance to an opponent
- (D) Following the coach's orders without question

Q40. Which type of motivation is described as leading to better long-term persistence?

- (A) Extrinsic Motivation
- (B) Reward-based Motivation
- (C) Intrinsic Motivation
- (D) Achievement Motivation

Q41. What does 'Autonomy' allow an athlete to feel, according to the Self-Determination Theory?

- (A) Mastery over a specific skill
- (B) Control over their own training
- (C) Superiority over teammates
- (D) Dependency on the coach

Q42. Extrinsic motivation, as mentioned in the text, is typically driven by:

- (A) Joy of the sport
- (B) External rewards like trophies or money
- (C) Personal growth
- (D) Team spirit

Q43. If a coach allows a player to choose their own warm-up routine, which psychological need from the SDT is being addressed?

- (A) Competence
- (B) Relatedness
- (C) Autonomy
- (D) Aggression



- Q44.** Which postural deformity is specifically characterized by the "rounding of the upper back" often caused by weak back muscles and carrying heavy bags?
- (A) Lordosis
 - (B) Kyphosis
 - (C) Scoliosis
 - (D) Flat Foot
- Q45.** In a league tournament of 8 teams, how many total matches will be played in a 'Single League' format?
- (A) 28
 - (B) 56
 - (C) 14
 - (D) 8
- Q46.** Which of the following vitamins is 'Fat Soluble' and essential for blood clotting?
- (A) Vitamin B12
 - (B) Vitamin C
 - (C) Vitamin K
 - (D) Vitamin B1
- Q47.** The 'Sargent Jump Test' is used to measure which physical attribute?
- (A) Flexibility
 - (B) Explosive Power of legs
 - (C) Agility
 - (D) Aerobic Capacity
- Q48.** Which yoga asana is often called the 'Tree Pose' and is excellent for improving concentration and balance?
- (A) Tadasana



- (B) Vrikshasana
- (C) Chakrasana
- (D) Sukhasana

Q49. What is the total duration of a standard Kabaddi match (excluding half-time and breaks) for men?

- (A) 30 minutes
- (B) 40 minutes
- (C) 50 minutes
- (D) 60 minutes

Q50. Newton's Second Law of Motion is also known as the:

- (A) Law of Inertia
- (B) Law of Action-Reaction
- (C) Law of Acceleration
- (D) Law of Gravity



Detailed Solutions**Q1.****Solution****Concept:**

The National Rural Health Mission (NRHM) is a flagship program of the Government of India, aimed at providing accessible and affordable healthcare to rural populations. A central figure in this mission is the ASHA (Accredited Social Health Activist) worker. An ASHA is a trained female community health activist who serves as the first point of contact for any health-related demands in rural areas.

Solution:

- (a) The primary role of an ASHA worker is to facilitate the community's access to the public health system.
- (b) One of her most critical responsibilities is the promotion of maternal and child health. She achieves this by encouraging pregnant women to choose institutional delivery (giving birth in a hospital) rather than at home.
- (c) This is supported by the Janani Suraksha Yojana (JSY), where the ASHA worker helps the mother navigate the healthcare system and ensures she receives the financial and medical benefits she is entitled to.
- (d) Furthermore, ASHA workers act as health educators, providing information on sanitation, hygiene, and nutrition. They are not administrative officers or doctors; they do not manage district budgets or perform medical exams.
- (e) Their effectiveness lies in being "of the community." Because they live in the same village, they possess the trust required to change health behaviors and mobilize people for immunization drives and disease prevention programs.

Final Answer: The primary responsibility is acting as a link to facilitate institutional delivery.

Answer: (B)



Q2.

Solution**Concept:**

The Mid-Day Meal Scheme (PM-POSHAN) is the largest school feeding program in the world. Its goal is twofold: to increase school enrollment and attendance while simultaneously improving the nutritional status of children. To achieve this, the government has established strict "Nutritional Norms" that must be met to ensure the child receives at least one-third of their daily dietary requirement at school.

Solution:

- (a) The nutritional requirements are divided into two blocks: Primary (Class I-V) and Upper Primary (Class VI-VIII).
- (b) For the **Upper Primary** category, the metabolic demands of growing adolescents are higher. Therefore, the meal must provide at least **700 Calories and 20 grams of Protein**.
- (c) In contrast, the Primary category requires 450 Calories and 12 grams of Protein.
- (d) The meal must consist of food grains, pulses, vegetables, and oil/fat. The protein content is particularly important for muscle growth and cognitive function during these formative years.
- (e) From a physical education perspective, these meals are essential for ensuring that students have the energy levels required to participate in sports and physical activities, which are vital for combating sedentary lifestyles and malnutrition.

Final Answer: The requirement is 700 Calories and 20 grams of Protein.

Answer: (B)



Q3.

Solution**Concept:**

Non-communicable diseases (NCDs) are chronic conditions that are not passed from person to person. They are long-duration diseases and generally slow in progression. The World Health Organization (WHO) focuses on a specific "4x4" framework, which identifies four major NCDs and four shared behavioral risk factors (tobacco, unhealthy diet, physical inactivity, and alcohol).

Solution:

- (a) The four main types of non-communicable diseases are: **Cardiovascular diseases** (like heart attacks and stroke), **Cancers**, **Chronic respiratory diseases** (such as COPD and asthma), and **Diabetes**.
- (b) These diseases are responsible for the majority of global deaths and are heavily influenced by modern lifestyle choices.
- (c) Option (A) is incorrect because Influenza and Malaria are communicable (infectious) diseases.
- (d) Option (C) is incorrect because Tuberculosis and Cholera are caused by bacteria and are communicable.
- (e) Option (D) is incorrect because HIV/AIDS and Typhoid are communicable.
- (f) Understanding this framework is crucial for Physical Education students because NCDs can often be prevented or managed through regular physical activity and a balanced diet, making the PE teacher a key player in public health.

Final Answer: The set includes Cardiovascular diseases, Cancer, Chronic Respiratory diseases, and Diabetes.

Answer: (B)



Q4.

Solution**Concept:**

Inclusive physical education ensures that students with diverse abilities can participate together in a meaningful way. Rather than excluding Children with Special Needs (CWSN) or giving them different activities, the modern approach is 'Adapted Physical Education,' which modifies the environment and rules to fit the individual's needs.

Solution:

- (a) The **'STEP' principle** is a globally recognized tool for inclusion. It stands for:
- **Space:** Adjusting the size of the playing area.
 - **Task:** Modifying the rules or the way the game is played.
 - **Equipment:** Using lighter bats, larger balls, or audible signals.
 - **People:** Changing how teams are balanced or the number of players.
- (b) Merely "standardizing" rules for everyone often leads to the exclusion of those who cannot meet those standard physical requirements.
- (c) True inclusion means everyone is an active participant, not just a spectator on the sidelines.
- (d) By using the STEP principle, a teacher can ensure that a child in a wheelchair and a child without physical impairments can play on the same team effectively. This fosters empathy, social integration, and physical health for all students.

Final Answer: The strategy is implementing the 'STEP' principle to adapt activities.

Answer: (B)



Q5.

Solution**Concept:**

The Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Health Mission. Its primary objective is to reduce maternal and neonatal mortality by promoting institutional delivery among poor pregnant women. It is a 100

Solution:

- (a) The fundamental mechanism of JSY is providing a ****cash incentive**** to pregnant women who choose to give birth in a government or accredited private health facility.
- (b) This financial support helps the family cover transportation costs and other incidental expenses related to childbirth.
- (c) Beyond the cash, the scheme ensures that the mother receives proper medical attention from trained doctors and nurses during and after delivery.
- (d) This is crucial in rural India, where home births without medical supervision often lead to complications that cause high mortality rates.
- (e) The scheme specifically targets Low Performing States (LPS) where institutional delivery rates are low. By providing this "pull" factor of financial aid, the government has successfully shifted birth practices toward safer, clinical environments.

Final Answer: The mechanism is integrating cash assistance with institutional delivery and post-delivery care.

Answer: (B)



Q6.

Solution**Concept:**

The Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Health Mission (NHM). It is a central government initiative designed to reduce maternal and infant mortality by promoting institutional delivery among pregnant women, particularly those from low-income families (Below Poverty Line).

Solution:

- (a) The Janani Suraksha Yojana was launched with the primary objective of encouraging women to give birth in health facilities rather than at home.
- (b) It is indeed a 100
- (c) The scheme is unique because it integrates a cash assistance incentive with the provision of medical care during delivery and the immediate post-delivery period.
- (d) This financial incentive helps cover the costs of transportation and incidental expenses, making institutional delivery more accessible for marginalized sections of society.
- (e) Since the statement accurately reflects the funding structure, the purpose (institutional delivery), and the methodology (cash assistance), it is correct.

Final Answer: The statement is True.

Answer: (A)



Q7.

Solution**Concept:**

Hans Selye's General Adaptation Syndrome (GAS) is a three-stage process that describes how the body responds to stress, which in sports is represented by "training load." Understanding this cycle is vital for coaches to prevent overtraining and ensure "supercompensation" (improved fitness).

Solution:

- (a) The first stage is the **Alarm Reaction**. When an athlete is exposed to a new or heavy training load, the body's initial response is a slight dip in performance or a "shock" phase as it recognizes the stressor.
- (b) The second stage is **Resistance**. If the stress continues or is followed by adequate recovery, the body adapts to the load. It builds more muscle, improves oxygen delivery, and becomes more efficient. This is the stage where "supercompensation" occurs.
- (c) The third stage is **Exhaustion**. If the training load is too intense for too long without sufficient rest, the body's resources are depleted. The athlete enters a state of overtraining, where performance drops and the risk of injury or illness increases significantly.
- (d) Therefore, the logical progression of physiological stress response is Alarm → Resistance → Exhaustion.

Final Answer: The sequence is Alarm Reaction → Resistance → Exhaustion.

Answer: (C)



Q8.

Solution**Concept:**

Levers in the human body are classified into three types based on the relative positions of the Fulcrum (pivot point), the Effort (muscle force), and the Resistance (weight/load). In a Second Class Lever, the Resistance is located between the Fulcrum and the Effort (F-R-E).

Solution:

- (a) When a basketball player rises on their toes, the ball of the foot (metatarsophalangeal joints) acts as the **Fulcrum**.
- (b) The **Resistance** (Load) is the entire weight of the athlete's body, which is transmitted down through the tibia to the ankle joint.
- (c) The **Effort** (Force) is provided by the calf muscles (gastrocnemius and soleus) pulling upward on the heel bone (calcaneus) via the Achilles tendon.
- (d) Because the body weight (Resistance) is positioned between the toes (Fulcrum) and the heel/calf pull (Effort), this mechanical arrangement constitutes a second-class lever.
- (e) Second-class levers are designed for "power," allowing the body to lift a heavy load (the entire body weight) with relatively less effort.

Final Answer: This is a Second Class Lever.

Answer: (B)



Q9.

Solution**Concept:**

Pranayama is the yogic practice of breath control. Different types of Pranayama utilize different pathways (nostrils or mouth) to achieve specific physiological effects, such as cooling the body or energizing the nervous system.

Solution:

- (a) Most Pranayama techniques, such as Anulom Vilom or Bhastrika, involve breathing through the nostrils.
- (b) However, 'Sitali' is specifically known as a "cooling breath."
- (c) To perform Sitali, the practitioner must protrude their tongue and curl the sides upward to form a tube-like shape (like a straw).
- (d) The air is then inhaled deeply through this "curled tongue." As the air passes over the moisture on the tongue, it cools down before entering the lungs, which helps lower the body's internal temperature.
- (e) This distinguishes it from 'Sitkari' (hissing breath through teeth) or 'Ujjayi' (breathing through the throat).

Final Answer: The breath is inhaled through a curled tongue.

Answer: (C)



Q10.

Solution**Concept:**

Postural deformities involve abnormalities in the alignment of the skeletal system. Spinal deformities are classified based on the direction of the curvature: Kyphosis (forward/hunchback), Lordosis (inward/swayback), and Scoliosis (sideways).

Solution:

- (a) Kyphosis refers to an excessive outward curvature of the upper back (thoracic spine), resulting in a "hunchback" appearance.
- (b) Lordosis refers to an exaggerated inward curve of the lower back (lumbar spine), often seen as a "hollow back."
- (c) Scoliosis is the condition where the spine curves to the side in a "C" or "S" shape. It is a lateral deviation that can cause uneven shoulders or hips.
- (d) Knock Knees (Genu Valgum) is a deformity of the legs, not the spine, where the knees touch each other while the ankles remain apart.
- (e) Therefore, the sideways or lateral curvature of the spine is specifically termed Scoliosis.

Final Answer: The deformity is Scoliosis.

Answer: (C)



Q11.

Solution**Concept:**

In sports tournament organization, a 'Bye' is a privilege granted to a team that allows them to advance to the next round without competing in the first round. This is mathematically necessary when the total number of participating teams is not a power of two (i.e., 2, 4, 8, 16, 32, etc.). By granting byes, the organizer ensures that in the subsequent rounds, every team will have an opponent, eventually leading to a single winner.

Solution:

- (a) To calculate the number of byes, we first identify the total number of teams (N), which is 19 in this case.
- (b) We then find the next highest power of two that is greater than N . The powers of two are $2^1 = 2$, $2^2 = 4$, $2^3 = 8$, $2^4 = 16$, and $2^5 = 32$.
- (c) Since 19 is greater than 16, the next power of two is 32.
- (d) The formula for the total number of byes is: (Next Power of Two) - (Total Number of Teams).
- (e) Applying the values: $32 - 19 = 13$.
- (f) Therefore, 13 teams will receive a bye in the first round, while the remaining 6 teams ($19 - 13 = 6$) will play 3 matches against each other.
- (g) After the first round, the 13 teams that received byes and the 3 winners of the first-round matches will make a total of 16 teams for the second round, which is a perfect power of two.

Final Answer: The total number of Byes to be granted is 13.

Answer: (A)



Q12.

Solution**Concept:**

Biomechanics is the study of the structure and function of biological systems by means of the methods of mechanics. It is broadly divided into two main branches: Kinematics and Kinetics. While Kinematics describes the appearance or description of motion (position, velocity, acceleration) without regard to the forces, Kinetics is the branch that focuses on the "why" of motion—the actual forces that create or change it.

Solution:

- (a) The question specifically asks for the branch that deals with the "study of forces" that cause or change motion.
- (b) **Kinematics** is descriptive; it measures how fast an athlete is running or the angle of a joint during a throw, but it does not explain the force produced by the muscles to achieve that motion.
- (c) **Kinetics**, on the other hand, involves the study of internal forces (muscle contractions, bone-on-bone forces) and external forces (gravity, friction, air resistance, ground reaction forces) acting upon the body.
- (d) For example, analyzing the torque produced at the knee during a football kick or the impact force during a landing in gymnastics falls under Kinetics.
- (e) **Statics** deals with systems in a state of constant motion or rest (equilibrium), while **Anatomy** is the study of the body's structure rather than its mechanical forces.
- (f) Thus, Kinetics is the correct scientific classification for the study of forces.

Final Answer: The branch is Kinetics.

Answer: (B)



Q13.

Solution**Concept:**

Fractures are classified based on the nature of the break in the bone. A 'Greenstick Fracture' is a unique type of injury where the bone bends and cracks, but does not break completely into two separate pieces. This is very similar to what happens when you try to break a "green" or young branch of a tree—it splinters on one side but stays connected on the other.

Solution:

- (a) The occurrence of a Greenstick Fracture is directly related to the mineral content and flexibility of the bones.
- (b) In adults and senior citizens, bones are highly mineralized, brittle, and hard. When subjected to excessive force, these bones tend to snap completely (resulting in transverse or comminuted fractures).
- (c) In contrast, children have bones that are softer, more flexible, and less mineralized. Their bones have a thicker periosteum (the outer covering of the bone), which provides additional support.
- (d) Because a child's bones are more "elastic" than an adult's, they are more likely to bend and only partially break when subjected to stress.
- (e) Therefore, Greenstick Fractures are a hallmark of pediatric (children's) orthopedics and sports medicine. They rarely occur in adults unless there is a specific underlying pathology.

Final Answer: Greenstick Fractures are most commonly observed in children.

Answer: (C)



Q14.

Solution**Concept:**

The Mid-Day Meal Scheme (now known as PM POSHAN) is a massive school meal program in India designed to improve the nutritional status of school-age children. To ensure that children receive adequate nourishment, the government has set specific nutritional standards for two different categories: Primary (Class I-V) and Upper Primary (Class VI-VIII).

Solution:

- (a) The scheme aims to provide a balanced diet that includes a specific amount of calories and protein to support the growth and cognitive development of students.
- (b) For students in the **Primary** category, the requirement is 450 calories and 12 grams of protein per day.
- (c) For students in the **Upper Primary** category (which covers the older age group mentioned in the question), the nutritional requirement is significantly higher to meet their increased metabolic needs.
- (d) The official mandate for Upper Primary is to provide at least **700 calories** and 20 grams of protein per school day.
- (e) This ensures that the meal provides approximately one-third of the daily energy requirement for a developing child.
- (f) Options like 300 or 1000 calories are incorrect as they are either too low for the purpose of the scheme or exceed the standardized allocation for a single school meal.

Final Answer: The nutritional objective is 700 calories.

Answer: (C)



Q15.

Solution**Concept:**

Training methods in physical education are designed to improve specific components of fitness like endurance, strength, and speed. Fartlek training, a Swedish term meaning "speed play," is a unique form of continuous training that blends continuous exercise with interval training. Unlike structured interval training, Fartlek is largely informal and governed by how the athlete feels.

Solution:

- (a) Fartlek training is characterized by the absence of a rigid structure. There are no fixed recovery periods or pre-determined distances for sprints.
- (b) Instead, the athlete varies their pace throughout the run. For example, they might sprint to a distant tree, jog until their breathing recovers, and then run at a fast steady state up a hill.
- (c) This "speed play" is highly effective for improving both aerobic and anaerobic systems because it forces the body to adapt to various speeds and intensities.
- (d) It is often performed on natural terrain (forests, hills, parks) rather than a track, which helps in mental refreshment and reduces the monotony of training.
- (e) In contrast, **Interval Training** has strict work-to-rest ratios, **Isometric Training** involves static muscle contractions without movement, and **Isokinetic Training** requires specialized machinery to maintain constant speed.
- (f) Therefore, the description of "speed play" and varying pace based on internal feeling perfectly defines Fartlek Training.

Final Answer: The method is Fartlek Training.

Answer: (C)



Q16.

Solution**Concept:**

Postural deformities of the lower limbs often involve the alignment of the knees and ankles. The two most common conditions are Genu Valgum (Knock Knees) and Genu Varum (Bow Legs). These conditions can result from vitamin deficiencies (like Rickets), genetic factors, or improper weight-bearing habits during early childhood.

Solution:

- (a) The question describes a condition where the knees stay wide apart even when the feet and ankles are placed together. This creates an outward curvature of the legs, resembling a "bow."
- (b) This specific alignment is known as **Genu Varum**, or commonly, **Bow Legs**. In this deformity, the medial longitudinal arches of the legs are under stress, and the gap between the knees is clearly visible.
- (c) Conversely, **Knock Knees (Genu Valgum)** is the opposite condition, where the knees touch each other while the feet remain wide apart.
- (d) **Flat Foot** refers to the loss of the arch in the sole of the foot, and **Round Shoulders** is a postural issue of the upper back.
- (e) For a Physical Education student, identifying these is crucial because they affect an athlete's biomechanical efficiency, running gait, and susceptibility to injuries like ACL tears or medial ligament strains. Corrective exercises often involve strengthening the muscles on the opposite side of the curvature.

Final Answer: The condition is Bow Legs (Genu Varum).

Answer: (B)



Q17.

Solution**Concept:**

In the 'Shatkarma' or six purification techniques of Hatha Yoga, 'Neti' is the practice used to cleanse the upper respiratory tract, specifically the nasal passages. It is vital for practitioners as it helps in maintaining clear breathing for Pranayama and removes mucus and allergens from the nasal cavity.

Solution:

- (a) The image illustrates a practitioner tilting their head and allowing water to flow from a pot into one nostril and exit through the other.
- (b) This specific method, which uses lukewarm saline water, is known as **Jala Neti**. The salt is added to the water to ensure the osmotic pressure matches the body's tissues, preventing irritation.
- (c) **Sutra Neti** is a more advanced version where a cotton thread or a rubber catheter is passed through the nose and out through the mouth to clean the passages manually.
- (d) **Vaman Dhauti** involves the stomach (drinking water and vomiting it out), and **Kapalbhati** is a breathing technique.
- (e) Jala Neti is highly recommended in sports and health education for its benefits in relieving sinusitis, improving vision, and calming the nervous system, which is essential for an athlete's focus and recovery.

Final Answer: The Kriya is Jala Neti.

Answer: (B)



Q18.

Solution**Concept:**

Nutrition is the foundation of athletic performance. Nutrients are categorized into 'Macronutrients' (required in large amounts for energy and tissue repair) and 'Micronutrients' (required in small amounts to regulate bodily functions). Understanding the specific chemical forms and sources of these nutrients is a core part of physical education.

Solution:

- (a) **Carbohydrates** (A) are the primary fuel for high-intensity exercise. In the body, they are stored as **Glycogen** in the muscles and liver, and in food, they are found as **Starch** (III).
- (b) **Minerals** (B) are inorganic micronutrients. **Calcium** (I) is a critical mineral for athletes as it is responsible for bone density and muscle contraction.
- (c) **Proteins** (C) are macronutrients made up of long chains of **Amino Acids** (IV). They are essential for the repair of muscle tissues damaged during training.
- (d) **Vitamins** (D) are organic micronutrients. **Ascorbic Acid** (II) is the chemical name for Vitamin C, which is vital for collagen synthesis and immune function.
- (e) Matching these correctly: (A)-(III), (B)-(I), (C)-(IV), (D)-(II). This combination ensures that the athlete's diet supports both the structural (protein/minerals) and functional (carbs/vitamins) needs of the body.

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

Answer: (A)



Q19.

Solution**Concept:**

Sports excellence is rarely an accident; it is the result of a long-term process that begins with finding the right individuals for the right sport. This systematic process involves using scientific metrics—such as anthropometric measurements, physiological testing, and psychological profiling—to find children who have a natural predisposition for a particular athletic discipline.

Solution:

- (a) The blank refers to the scientific search for potential sports stars. This is formally called **Talent Identification (TID)**.
- (b) TID programs, like those run by the Sports Authority of India (SAI), look for specific traits; for example, tall children for basketball or those with high explosive power for sprinting.
- (c) **Periodization** refers to the systematic planning of athletic training over cycles (micro, meso, macro) to reach peak performance.
- (d) **Sports Management** involves the administrative and business side of sports, while **Biomechanical Analysis** is the study of movement efficiency.
- (e) Talent identification is the most critical first step in the "podium finish" journey, ensuring that resources are invested in athletes who have the highest probability of international success. It bridges the gap between raw potential and professional mastery.

Final Answer: The process is Talent Identification.

Answer: (A)



Q20.

Solution**Concept:**

Newton's Laws of Motion are the fundamental principles of biomechanics in sports. Every movement, from a jump to a throw, is governed by these laws. In sprinting, the start is a critical phase where the athlete must overcome inertia and generate maximum forward velocity in the shortest time possible.

Solution:

- (a) The scenario describes a sprinter in the blocks. To move forward, the sprinter must apply a forceful "push" backward and downward against the starting blocks.
- (b) According to **Newton's Third Law of Motion (Law of Action and Reaction)**, for every action, there is an equal and opposite reaction.
- (c) When the athlete applies a force (Action) to the blocks, the blocks apply an equal force (Reaction) back onto the athlete in the opposite direction (forward and upward).
- (d) It is this reaction force that propels the sprinter out of the blocks and down the track.
- (e) While the **Law of Inertia** relates to staying at rest and the **Law of Acceleration** relates to how much the athlete speeds up based on their mass and force, the specific mechanism of using the blocks to "bounce" forward is a direct application of the third law.

Final Answer: This is Newton's Law of Action and Reaction.

Answer: (C)



Q21.

Solution**Concept:**

The Rikli and Jones Senior Citizen Fitness Test, also known as the Fullerton Functional Fitness Test, was specifically designed to assess the functional fitness of older adults. Unlike standard fitness tests for athletes, this battery focuses on activities of daily living (ADLs). The 'Chair Stand Test' is a primary component of this battery, aimed at evaluating the physiological capacity of the lower body, which is critical for maintaining independence and preventing falls in the elderly.

Solution:

- (a) The Chair Stand Test involves the participant sitting in the middle of a chair with their back straight and feet flat on the floor, then rising to a full standing position and returning to a seated position as many times as possible within 30 seconds.
- (b) This movement primarily engages the quadriceps, hamstrings, and gluteal muscles. Therefore, the test is specifically designed to measure **lower body strength**.
- (c) In the context of senior citizens, lower body strength is the foundation for mobility tasks such as walking, climbing stairs, getting out of a car, or rising from a chair without assistance.
- (d) Weakness in the lower extremities is a leading indicator of mobility disability and an increased risk of hip fractures. By quantifying how many repetitions an individual can perform, health professionals can determine if a senior's strength is within the "normal" range for their age group or if they require targeted resistance training.
- (e) Other components of the Rikli and Jones test, such as the 'Back Scratch Test' (flexibility) or '6-Minute Walk Test' (endurance), measure different physical parameters, but the Chair Stand remains the gold standard for functional leg power.

Final Answer: The test is used to measure lower body strength.

Answer: (B)



Q22.

Solution**Concept:**

In the 1950s, cardiologists Meyer Friedman and Ray Rosenman developed the 'Type A' and 'Type B' personality theory. This classification was initially used to identify individuals with a higher predisposition to coronary heart disease. In sports and physical education, understanding these personality types helps coaches manage athlete stress levels, motivation, and training intensity, as 'Type A' individuals react very differently to competitive pressure compared to 'Type B' individuals.

Solution:

- (a) A 'Type A' personality is defined by a specific set of behavioral traits. The most prominent characteristic is a high level of **competitiveness**. These individuals are extremely driven to succeed and often view their environment as a series of challenges to be won.
- (b) Another hallmark is a constant sense of **time urgency** (often called "hurry sickness"). They tend to be impatient, dislike waiting in lines, and often try to do two or more things at once.
- (c) Furthermore, 'Type A' individuals often exhibit **hostility** or easily triggered anger, especially when faced with obstacles that prevent them from achieving their goals. They are often "workaholics" who set very high standards for themselves and others.
- (d) In contrast, a 'Type B' personality is characterized by being relaxed, easy-going, and relatively free from the pressure of time. They are less likely to suffer from stress-related illnesses.
- (e) Therefore, a 'Type A' individual is most likely to exhibit competitiveness, urgency, and hostility. While this can lead to high performance in sports, it also requires careful management to avoid burnout or cardiovascular issues.

Final Answer: The individual exhibits competitiveness, urgency, and hostility.

Answer: (C)



Q23.

Solution**Concept:**

Fitness assessment involves various tests to measure components like strength, speed, flexibility, and balance. Balance is categorized into two types: Static Balance (maintaining equilibrium while stationary) and Dynamic Balance (maintaining equilibrium while moving). The Flamingo Balance Test is one of the most widely used international standards for measuring a person's ability to maintain an upright posture on a narrow base of support.

Solution:

- (a) The Flamingo Balance Test requires the participant to stand on one leg on a metal beam of specific dimensions, while the other leg is flexed at the knee and held by the hand (mimicking the posture of a flamingo).
- (b) The objective is to remain balanced for as long as possible. Each time the participant loses balance (touches the ground or lets go of the foot), the stopwatch is stopped, and a "fall" is recorded.
- (c) Because the participant is staying in one spot without performing a locomotive movement, this test specifically measures **Static Balance**.
- (d) This component of fitness is crucial for sports like gymnastics, yoga, and shooting, where stability is paramount. It also serves as a general indicator of core strength and neuromuscular coordination.
- (e) Unlike explosive power (measured by jumps) or cardiovascular endurance (measured by distance runs), the Flamingo test provides a pure assessment of the vestibular system and the stabilizer muscles in the lower body.
- (f) In physical education curricula, this test is often used to screen for developmental coordination disorders or to assess the effectiveness of balance-training programs.

Final Answer: The test measures Static Balance.

Answer: (A)



Q24.

Solution**Concept:**

The Government of India has instituted several national sports awards to recognize excellence, coaching, and contribution to the field of sports. These include the Arjuna Award, the Dronacharya Award, and the Dhyan Chand Award. However, at the very top of this hierarchy is the award named after India's hockey legend, Major Dhyan Chand, which serves as the ultimate recognition for an active sportsperson.

Solution:

- (a) The **Major Dhyan Chand Khel Ratna Award** (formerly known as the Rajiv Gandhi Khel Ratna) is the highest sporting honor in India.
- (b) It was instituted in 1991-92 to honor the most "spectacular and most outstanding performance" by a sportsperson in the field of sports and games.
- (c) Unlike the Arjuna Award, which is given for consistently good performance over four years, the Khel Ratna is reserved for the absolute best among the best. The evaluation period for this award is the previous four years of international performance.
- (d) The award includes a medallion, a certificate, and a significant cash prize (₹ 25 lakh as per recent revisions).
- (e) The **Arjuna Award** is the second-highest honor, the **Dronacharya Award** is specifically for coaches, and **Padma Shri** is a general civilian honor that can be given to people in various fields, including sports, but is not exclusively a "sporting honor."
- (f) Therefore, the Khel Ratna stands as the pinnacle of achievement for any Indian athlete.

Final Answer: The award is the Major Dhyan Chand Khel Ratna Award.

Answer: (C)



Q25.

Solution**Concept:**

In the game of cricket, the pitch is the central strip of the cricket field between the wickets. The dimensions and quality of the pitch are governed by the Laws of Cricket, maintained by the Marylebone Cricket Club (MCC). Precise measurements are vital because the distance determines the bowler's run-up, the speed of the ball reaching the batter, and the timing required for a successful run.

Solution:

- (a) The standard length of a professional cricket pitch, measured from one set of wickets to the other (stump to stump), is exactly **22 yards**.
- (b) In metric units, this distance is approximately 20.12 meters.
- (c) It is important to note the difference between the total length of the pitch (which is 24.6 yards or 22.5 meters) and the distance between the wickets (22 yards). The extra space beyond the wickets provides room for the bowlers' follow-through and the wicketkeeper's positioning.
- (d) The width of a standard pitch is 10 feet (3.05 meters).
- (e) The choice of 22 yards is historic; it originates from a traditional English unit of measurement known as a "chain" (1 chain = 22 yards). This measurement has remained constant throughout the evolution of the modern game, from Test matches to T20s.
- (f) For students of Physical Education, understanding these specific field dimensions is essential for sports management, officiating, and ground maintenance.

Final Answer: The standard measurement is 22 yards.

Answer: (B)



Q26.

Solution**Concept:**

In the Eight Limbs of Yoga (Ashtanga Yoga) compiled by Sage Patanjali, the practice is divided into external disciplines (Bahiranga) and internal disciplines (Antaranga). 'Pratyahara' serves as the critical bridge between the external physical practices like Asana and Pranayama, and the internal mental practices like Dharana and Dhyana. It is often described as the "withdrawal of the senses," a process necessary for achieving a state of deep mental concentration.

Solution:

- (a) The term 'Pratyahara' is derived from two Sanskrit words: *prati* (against/away) and *ahara* (food/input). In a yogic sense, 'ahara' refers to any external sensory input that our mind "feeds" upon through the eyes, ears, nose, tongue, and skin.
- (b) The practice of **Pratyahara involves the conscious withdrawal of the senses from external objects**. It is the ability to keep the mind undisturbed by the sights and sounds of the outside world.
- (c) For an athlete, Pratyahara is remarkably relevant. It represents the "tunnel vision" or the state of "being in the zone," where a sportsperson can block out the noise of the crowd, the presence of the opponent, or any external distractions to focus entirely on their performance.
- (d) Without Pratyahara, the mind remains scattered and reactive to the environment. By mastering this stage, the practitioner gains control over their sensory impulses, which is a prerequisite for the higher stages of meditation (Dhyana) and ultimate self-realization (Samadhi).
- (e) It is not merely about closing one's eyes; it is about the mental discipline of not allowing sensory data to trigger emotional or cognitive reactions, thereby preserving mental energy for internal focus.

Final Answer: The practice involves the withdrawal of the senses from external objects.

Answer: (C)



Q27.

Solution**Concept:**

The 'Female Athlete Triad' is a significant medical syndrome that was first identified in the early 1990s. It describes a collection of three interrelated health conditions that are frequently observed in physically active girls and women, particularly those participating in sports that emphasize leanness or aesthetics (such as gymnastics, figure skating, or long-distance running). Because these conditions are linked, a decline in one often leads to the worsening of the others.

Solution:

- (a) The first component of the triad is **Disordered Eating** (or Low Energy Availability). This occurs when an athlete does not consume enough calories to support the energy expenditure of their training. It can range from subtle restrictive eating to clinical disorders like anorexia or bulimia.
- (b) The second component is **Amenorrhea**, which is the absence of menstruation for three or more consecutive months. When the body experiences low energy availability, it shuts down non-essential functions, including the reproductive system, by lowering estrogen levels.
- (c) The third component is **Osteoporosis** (or Low Bone Mineral Density). Estrogen is vital for bone health; when levels drop due to amenorrhea, the bones become weak, brittle, and highly susceptible to stress fractures.
- (d) If left untreated, the Female Athlete Triad can lead to long-term health consequences, including permanent bone loss and cardiovascular issues.
- (e) Physical education instructors must be trained to recognize these signs early, as the pressure to maintain a certain "sporting weight" can inadvertently push athletes into this dangerous physiological cycle.

Final Answer: The three conditions are Disordered Eating, Amenorrhea, and Osteoporosis.

Answer: (B)



Q28.

Solution**Concept:**

Skeletal muscle tissue is composed of different types of muscle fibers, each specialized for specific types of physical activity. These fibers are categorized based on how they produce energy (metabolism) and how quickly they contract. The two main types are Type I (Slow-twitch) and Type II (Fast-twitch). The distribution of these fibers in an individual's body is largely determined by genetics, which often dictates whether an athlete is naturally better suited for sprinting or endurance events.

Solution:

- (a) **Slow-twitch (Type I) muscle fibers** are characterized by a high density of mitochondria and myoglobin, which gives them a red appearance. They are highly efficient at using oxygen to generate fuel (ATP) for continuous, extended muscle contractions over a long time.
- (b) These fibers fire more slowly than fast-twitch fibers but can go for a long time before they fatigue. This makes them the primary fibers used for **sustained, long-distance activities** like a marathon, cross-country skiing, or long-distance cycling.
- (c) In contrast, **Fast-twitch (Type IIb) fibers** generate energy anaerobically (without oxygen). They produce great force and speed but fatigue very quickly, making them ideal for 100m sprints or weightlifting.
- (d) **Intermediate-twitch (Type IIa) fibers** possess characteristics of both, providing a mix of speed and endurance suitable for mid-distance events like the 800m run.
- (e) An elite marathon runner may have up to 80

Final Answer: Slow-twitch (Type I) fibers are primarily responsible.

Answer: (B)



Q29.

Solution**Concept:**

In sports management and tournament organization, a 'League' or 'Round Robin' tournament is one where every team plays against every other team in the tournament. This format is considered the fairest way to determine a winner as it eliminates the element of luck found in knock-out formats. A 'Double League' is a variation where every team plays every other team twice (once at home and once away), a format commonly used in professional football leagues like the EPL or IPL.

Solution:

- (a) To calculate the number of matches in a single league tournament, the formula used is $N(N - 1)/2$, where N represents the number of teams.
- (b) In a **Double League** tournament, since each pair of teams plays twice, we simply multiply the single league formula by 2.
- (c) Therefore, $2 \times [N(N - 1)/2]$ simplifies mathematically to **$N(N - 1)$** .
- (d) For example, if there are 4 teams ($N = 4$) in a double league:
- Single League Matches = $4(3)/2 = 6$ matches.
 - Double League Matches = $4(3) = 12$ matches.
- (e) Using this formula is essential for organizers to plan the duration of the tournament, the number of venues required, and the scheduling of officials.
- (f) Options like $(N - 1)$ represent the total number of matches in a single knock-out tournament, while $2(N - 1)$ is not a standard tournament calculation formula.

Final Answer: The correct formula is $N(N - 1)$.

Answer: (B)



Q30.

Solution**Concept:**

The National Rural Health Mission (NRHM) introduced the 'ASHA' (Accredited Social Health Activist) program as a cornerstone of community-based healthcare in India. ASHA workers are local women trained to act as health educators and promoters in their own communities. They serve as the first point of contact for any health-related demands of the rural population, especially for women and children who might find it difficult to access formal medical facilities.

Solution:

- (a) The primary role of an ASHA worker is to serve as a **community health activist and a vital link between the public health system and the rural community**.
- (b) They do not perform medical procedures or surgeries; instead, their work is focused on awareness and mobilization. For instance, they encourage institutional deliveries (under JSY), provide information on nutrition and sanitation, and facilitate the immunization of children.
- (c) ASHA workers are essential for the "last-mile delivery" of healthcare services. They maintain village health registers, escort pregnant women to the hospital, and provide primary first aid for minor ailments.
- (d) They also play a crucial role in the 'Mid-Day Meal' monitoring and reporting communicable disease outbreaks in their locality to the Primary Health Centres (PHCs).
- (e) Because they belong to the same village, they have the trust of the residents, making them far more effective at changing health behaviors than outside officials. Their presence ensures that the benefits of national health schemes actually reach the intended beneficiaries at the grassroots level.

Final Answer: The role is acting as a community health activist and link to the health system.

Answer: (B)



Q31.

Solution**Concept:**

Current affairs in sports are a vital part of the CUET UG syllabus, focusing on major international tournaments hosted by India. Hosting world-class events like the BWF (Badminton World Federation) World Junior Championships demonstrates a nation's sporting infrastructure and its commitment to nurturing young talent.

Solution:

- (a) The Badminton World Federation (BWF) looks for cities with high-tech facilities and a strong local culture of the sport when awarding hosting rights.
- (b) In late 2023/early 2024, it was officially confirmed that **Guwahati**, Assam, would be the host city for the 2024 BWF World Junior Championships.
- (c) Guwahati has emerged as a premier hub for Indian badminton, especially with the inauguration of the National Centre of Excellence.
- (d) This event brings together the world's best U-19 players, and hosting it in Guwahati provides a home advantage to the emerging Indian "next-gen" shuttlers.
- (e) Therefore, Guwahati is the correct host city, distinguishing it from other sports hubs like Hyderabad or New Delhi in this specific context.

Final Answer: The host city is Guwahati.

Answer: (B)



Q32.

Solution**Concept:**

The Olympics represent the pinnacle of sporting achievement. For India, multi-medal hauls by a single individual in one edition were non-existent in the post-independence era until the 2024 Paris Olympics. This reflects the increasing depth and consistency of Indian athletes on the world stage.

Solution:

- (a) The 2024 Paris Olympics saw several historic moments for the Indian contingent.
- (b) **Manu Bhaker**, a young shooter, won a bronze medal in the Women's 10m Air Pistol event.
- (c) Shortly after, she partnered with Sarabjot Singh to win another bronze in the 10m Air Pistol Mixed Team event.
- (d) By securing two medals in the same Olympic Games, she became the first Indian athlete in post-independence history to achieve this feat in a single edition.
- (e) While athletes like PV Sindhu and Neeraj Chopra have won medals in *different* editions, Manu Bhaker's "double" in Paris stands as a unique record in Indian sports history.

Final Answer: The athlete is Manu Bhaker.

Answer: (B)



Q33.

Solution**Concept:**

Government initiatives in India aim to create a "sporting culture" by integrating fitness into the daily lives of citizens, especially students. The 'Khelo India' scheme and the 'Fit India Movement' are two pillars of this strategy, designed to identify talent and promote physical well-being respectively.

Solution:

- (a) The 'Khelo India' program focuses on the competitive aspect and talent identification at the school and university levels.
- (b) To ensure that the benefits of fitness reach every child, not just competitive athletes, the government integrated these efforts with the **Fit India Movement**.
- (c) This integration involves "Fit India School Rating," where schools are assessed based on the physical activity of their students and the quality of their sports infrastructure.
- (d) The 'Khelo India' aspect emphasizes "playing" as a way to stay healthy, aligning perfectly with the Fit India objective of making physical activity a daily habit for every Indian citizen.
- (e) This synergy helps in creating a bottom-up approach to sports development while simultaneously tackling lifestyle diseases.

Final Answer: The program was integrated with the Fit India Movement.

Answer: (A)



Q34.

Solution**Concept:**

Biomechanics utilizes the principles of mechanics to understand human movement. A key part of this is the study of levers, which are simple machines within our bodies that allow us to move our limbs. The classification of a lever (First, Second, or Third class) is determined by the position of the fulcrum, effort, and resistance relative to each other.

Solution:

- (a) The passage explicitly states that third-class levers are characterized by the effort being located between the fulcrum and the resistance.
- (b) It further clarifies that this specific arrangement is "designed for **speed and range of motion** rather than brute strength."
- (c) Because the effort (muscle) is closer to the fulcrum (joint) than the resistance (the hand or weight being moved), the distal end of the limb travels a much larger distance at a much higher speed for a small muscle contraction.
- (d) This is why humans are capable of fast actions like throwing or striking, even if we are not as "mechanically strong" as a second-class lever system (like a wheelbarrow or the human ankle).
- (e) Therefore, according to the provided text, the structural advantage is speed and range.

Final Answer: The advantage is Speed and range of motion.

Answer: (B)



Q35.

Solution**Concept:**

To apply mechanical laws to the human body, we must identify which anatomical structures correspond to the components of a lever. In biomechanics, the body's skeletal and muscular systems act in unison to create motion through these lever systems.

Solution:

- (a) A lever system requires a fixed point around which a bar turns. This fixed point is the **Fulcrum**.
- (b) In the human body, the "rigid bars" are the bones.
- (c) The points where these bones meet and rotate are the **joints**.
- (d) The passage explicitly mentions: "A lever consists of a rigid bar (bone), a fulcrum (joint)...".
- (e) Therefore, when we move our arm or leg, the joint (such as the elbow or knee) serves as the pivot or fulcrum for that specific movement. The muscle provides the effort, and the bone acts as the lever arm.

Final Answer: The joint represents the Fulcrum.

Answer: (C)



Q36.

Solution**Concept:**

In a lever system, the classification is determined by which component—Fulcrum, Resistance, or Effort—occupies the middle position. There are three classes of levers: First Class (Fulcrum in middle), Second Class (Resistance in middle), and Third Class (Effort in middle). The Third Class lever is the most prevalent in the human body because it allows for high-speed movements of the extremities.

Solution:

- (a) As per the definition of a **Third-Class Lever**, the **Effort** is located between the Fulcrum and the Resistance.
- (b) In the human body, the joint acts as the Fulcrum, the muscle insertion on the bone acts as the point of Effort, and the weight of the limb or an external object acts as the Resistance.
- (c) Because the muscle (Effort) attaches very close to the joint (Fulcrum) and the weight (Resistance) is further away at the end of the bone, the effort must be greater than the resistance to move the load.
- (d) This "mechanical disadvantage" in terms of force is actually a "mechanical advantage" in terms of speed. A small contraction of the muscle near the joint results in a large, fast movement at the end of the limb (like the hand or foot).
- (e) This arrangement (F-E-R) is what enables humans to perform complex, high-velocity tasks such as throwing a ball, swinging a bat, or kicking, where the speed of the distal end of the limb is more critical than the amount of weight being moved.

Final Answer: The Effort is between the Fulcrum and Resistance.

Answer: (A)



Q37.

Solution**Concept:**

The passage uses sporting examples to illustrate how theoretical physics (biomechanics) applies to actual human performance. By identifying specific movements as third-class levers, we can understand why those movements are executed with high speed rather than heavy force.

Solution:

- (a) The passage explicitly mentions: "For instance, when a player performs a bicep curl or ****swings a racket****, they are utilizing third-class levers..."
- (b) In a racket swing, the shoulder or elbow joint acts as the Fulcrum. The muscles of the chest and arm provide the Effort, and the racket (plus the ball impact) at the end of the arm acts as the Resistance.
- (c) Because the arm acts as a third-class lever, the tip of the racket travels much faster than the speed at which the muscles are actually contracting. This high velocity is what allows a tennis or badminton player to strike the ball with significant power.
- (d) **Rising on toes** is an example of a second-class lever (where the ball of the foot is the fulcrum and the weight is in the middle).
- (e) **Heading a football** often involves a first-class lever (the atlanto-occipital joint of the neck acting as the fulcrum between the head weight and neck muscles).
- (f) Thus, based strictly on the text provided, swinging a racket is the correct application.

Final Answer: The action is swinging a racket.

Answer: (B)



Q38.

Solution**Concept:**

Evolutionary biomechanics suggests that the human body is not built to be a heavy-lifting machine like a crane, but rather a versatile, mobile system. The dominance of a particular lever class in our anatomy reveals the primary "design goal" of our musculoskeletal structure.

Solution:

- (a) The passage notes that third-class levers are "most common" in the human body.
- (b) As established, third-class levers prioritize speed and range of motion over the ability to lift heavy weights with minimal effort.
- (c) This implies that the human musculoskeletal system is optimized primarily for **rapid limb movement** and dexterity.
- (d) This optimization allows humans to use tools, throw projectiles, run, and perform fine motor skills with great precision and velocity.
- (e) While we can lift heavy objects, we do so with low mechanical efficiency compared to other animals or machines; however, our ability to move our hands and feet through a wide arc at high speeds is superior.
- (f) Therefore, the prevalence of this lever class is a testament to the body's specialization for mobility and speed, which is essential for almost all athletic disciplines, from sprinting to swimming.

Final Answer: The system is optimized for rapid limb movement.

Answer: (B)



Q39.

Solution**Concept:**

Self-Determination Theory (SDT) is a macro-theory of human motivation that has been extensively applied to sports psychology. It focuses on the degree to which an individual's behavior is self-motivated and self-determined. Among the three basic needs, 'Relatedness' focuses on the social dimension of the sporting experience.

Solution:

- (a) According to the passage, **Relatedness is the sense of belonging within a team**.
- (b) In a sports environment, this means the athlete feels valued, respected, and connected to their teammates and coaches.
- (c) It is the "social glue" that keeps an athlete engaged even when the physical training becomes difficult. When an athlete feels they are part of something bigger than themselves, their commitment increases.
- (d) Relatedness helps in reducing the feeling of isolation that often comes with high-pressure individual training.
- (e) It is not about comparing oneself to others (which can actually hurt intrinsic motivation) or simply following orders, but about the genuine human connection and support system found within the sporting community.
- (f) Coaches who foster a supportive, "family-like" atmosphere are directly satisfying the need for Relatedness, which leads to better psychological well-being for the athletes.

Final Answer: It refers to a sense of belonging and connection to a team.

Answer: (B)



Q40.

Solution**Concept:**

Motivation is generally divided into two types: Intrinsic (coming from within) and Extrinsic (coming from external factors). SDT emphasizes that the "quality" of motivation is more important than the "quantity" when it comes to long-term athletic success and mental health.

Solution:

- (a) The passage states: "When these needs are satisfied, athletes experience **Intrinsic Motivation**, which leads to long-term persistence..."
- (b) Intrinsic motivation refers to doing an activity for the inherent satisfaction of the activity itself—for the love of the game, the joy of movement, or the personal challenge.
- (c) Because the reward is internal (satisfaction/joy), it does not run out as long as the athlete enjoys the sport.
- (d) **Extrinsic Motivation**, which is driven by external rewards like trophies, fame, or money, can lead to quick results but often results in burnout or "dropping out" once the external rewards are no longer present or become harder to achieve.
- (e) Therefore, for a lifelong career in sports and sustained effort through failures, Intrinsic Motivation is the scientifically preferred driver.

Final Answer: The type is Intrinsic Motivation.

Answer: (C)



Q41.

Solution**Concept:**

Autonomy is the first of the three basic psychological needs in SDT. It represents the need to be the causal agent of one's own life and to act in harmony with one's integrated self. In a coaching relationship, autonomy is often the most overlooked need.

Solution:

- (a) The passage defines Autonomy as the athlete feeling "***in control of their own training**".
- (b) This does not mean the athlete does whatever they want without a coach's guidance; rather, it means they feel their voice is heard and they have a choice in the process.
- (c) When athletes feel they have autonomy, they take "ownership" of their performance. They are not just "puppets" following a coach's instructions, but active participants in their own development.
- (d) This sense of control reduces the feeling of being pressured or coerced, which in turn boosts intrinsic motivation and lowers stress levels.
- (e) In a physical education setting, providing autonomy might look like allowing a student to choose between two different fitness drills to achieve the same training goal.

Final Answer: It allows an athlete to feel control over their own training.

Answer: (B)



Q42.

Solution**Concept:**

Extrinsic motivation involves engaging in a task to earn a reward or avoid a punishment. While it can be useful in the short term to get an athlete started, it is considered "controlled" motivation because the athlete's behavior is being "controlled" by an outside source.

Solution:

- (a) The passage identifies Extrinsic Motivation as being "***driven by trophies or money**".
- (b) These are tangible, external rewards. Other examples could include praise from a parent, avoiding a coach's anger, or achieving a certain social status through sports.
- (c) The problem with relying solely on these factors is that the athlete's self-worth becomes tied to the reward rather than the process of improvement.
- (d) If the athlete stops winning trophies, they may lose all motivation to continue training, a phenomenon known as the "undermining effect."
- (e) In contrast, factors like the "joy of the sport" or "team spirit" are associated with intrinsic motivation and relatedness, which provide more stable psychological foundations.

Final Answer: It is driven by external rewards like trophies or money.

Answer: (B)



Q43.

Solution**Concept:**

Coaching styles are often categorized as "Autonomy-Supportive" or "Controlling." An autonomy-supportive coach provides choices, explains the rationale behind drills, and acknowledges the athlete's feelings. This approach directly satisfies the psychological needs required for peak mental performance.

Solution:

- (a) If a coach allows a player to choose their own warm-up routine, they are giving the player a choice and a voice in the training session.
- (b) This specific action addresses the need for **Autonomy**.
- (c) By allowing the choice, the coach is empowering the athlete to decide what feels best for their body on that particular day, fostering a sense of self-governance.
- (d) While the player might also feel more **Competent** because they know how to warm themselves up, the primary psychological shift is from being "told what to do" to "deciding what to do," which is the essence of autonomy.
- (e) This practice has been shown to increase athlete engagement and reduce the likelihood of mental fatigue during long training seasons.

Final Answer: The need being addressed is Autonomy.

Answer: (C)



Q44.

Solution**Concept:**

Postural deformities of the spine are classified based on the direction and location of the abnormal curvature. These conditions often arise due to poor lifestyle habits, lack of muscle tone, or improper weight distribution over a long period. Understanding the visual markers of these deformities is essential for corrective physical therapy.

Solution:

- (a) **Kyphosis** is the deformity characterized by an excessive outward curvature of the thoracic (upper) spine, leading to a "rounding of the back."
- (b) It is often referred to as "hunchback" or "round back." Common causes in school children include carrying excessively heavy school bags on one shoulder and slouching while sitting for long hours.
- (c) **Lordosis** is the opposite—an inward curvature of the lower (lumbar) spine, making the stomach protrude.
- (d) **Scoliosis** is a lateral or sideways curve (in an 'S' or 'C' shape).
- (e) **Flat Foot** is a deformity of the arches of the feet, not the spine.
- (f) To correct Kyphosis, physical educators recommend exercises that strengthen the back muscles (like the trapezius and rhomboids) and stretch the chest muscles (pectorals), such as Chakrasana or Bhujangasana.

Final Answer: The deformity is Kyphosis.

Answer: (B)



Q45.

Solution**Concept:**

A 'League' or 'Round Robin' tournament is a competition format where every participant plays every other participant. This format provides the most accurate ranking of teams because it ensures that one bad game does not eliminate a strong team. Calculating the number of matches is a fundamental skill in sports administration.

Solution:

- (a) For a 'Single League' tournament, the formula to calculate the total number of matches is: $\frac{N(N-1)}{2}$, where N is the number of teams.
- (b) In this question, the number of teams (N) is 8.
- (c) Applying the values to the formula: $\frac{8(8-1)}{2} = \frac{8 \times 7}{2}$.
- (d) $8 \times 7 = 56$, and $56 \div 2 = 28$.
- (e) Therefore, a total of **28 matches** will be played if every team plays every other team exactly once.
- (f) If this were a 'Double League' (where teams play each other twice), the total matches would be $56 (N \times (N - 1))$. However, for a single league, 28 is the correct mathematical result.

Final Answer: A total of 28 matches will be played.

Answer: (A)



Q46.

Solution**Concept:**

Vitamins are essential organic compounds that the body needs in small amounts to function. They are divided into two categories: Water-Soluble (Vitamins B and C) and Fat-Soluble (Vitamins A, D, E, and K). Fat-soluble vitamins are stored in the body's fatty tissue and liver, and they require dietary fat for proper absorption.

Solution:

- (a) The question asks for a fat-soluble vitamin specifically essential for **blood clotting**.
- (b) **Vitamin K** (Phylloquinone) is the correct answer. It plays a critical role in the synthesis of proteins needed for blood coagulation. Without Vitamin K, even a minor cut could result in excessive bleeding because the blood would not be able to clot.
- (c) **Vitamin B12** and **Vitamin B1** are water-soluble B-complex vitamins used for energy metabolism and nervous system health.
- (d) **Vitamin C** is a water-soluble vitamin essential for collagen synthesis and immune function.
- (e) For athletes, Vitamin K is also important for bone health, often working in tandem with Vitamin D to ensure calcium is properly utilized in the skeletal system.

Final Answer: The vitamin is Vitamin K.

Answer: (C)



Q47.

Solution**Concept:**

Standardized fitness tests are used to measure specific physical attributes like strength, endurance, speed, and power. Power is the ability to exert maximum force in the shortest possible time. The Sargent Jump Test, also known as the Vertical Jump Test, is the most common way to quantify the explosive power of the lower body.

Solution:

- (a) In the Sargent Jump Test, an athlete reaches as high as possible while standing flat-footed (standing reach), and then jumps as high as possible from a stationary position to touch a wall or a specialized vane (jump height).
- (b) The difference between the standing reach and the jump height is the result.
- (c) This test specifically measures the **Explosive Power of the legs**. It involves the rapid recruitment of fast-twitch muscle fibers in the quadriceps, hamstrings, and calves.
- (d) This attribute is crucial for athletes in basketball (for rebounding), volleyball (for spiking), and track and field (for high jump or long jump).
- (e) It does not measure flexibility (measured by Sit and Reach) or aerobic capacity (measured by the Harvard Step Test). It is a pure measure of anaerobic leg power.

Final Answer: The test measures Explosive Power of legs.

Answer: (B)



Q48.

Solution**Concept:**

Yoga asanas are physical postures that provide various physiological and psychological benefits. Balancing asanas are particularly valued for their ability to harmonize the nervous system, improve physical stability, and sharpen mental focus.

Solution:

- (a) **Vrikshasana** is derived from the Sanskrit words **Vriksha** (Tree) and **Asana** (Posture). It is commonly known as the **Tree Pose**.
- (b) To perform this asana, one stands on one leg with the other foot placed on the inner thigh of the standing leg, while the hands are folded in a prayer position (Namaste) or raised above the head.
- (c) Because the pose requires standing on a single leg, it significantly improves **concentration and physical balance**. It also strengthens the ligaments and tendons of the feet.
- (d) **Tadasana** (Mountain Pose) is a standing pose but on both feet. **Chakrasana** (Wheel Pose) is a backbend, and **Sukhasana** is a simple seated cross-legged pose for meditation.
- (e) Vrikshasana is often recommended for students to help calm the mind and improve neuro-muscular coordination.

Final Answer: The asana is Vrikshasana.

Answer: (B)



Q49.

Solution**Concept:**

Kabaddi is a traditional Indian sport that has gained international professional status. Like all organized sports, it has strict rules regarding the duration of play to ensure fairness and to manage the physical exertion of the players, as the game is extremely high-intensity and requires continuous breath-holding (the "cant").

Solution:

- (a) In a standard competitive Kabaddi match for men (such as in the Pro Kabaddi League or International competitions), the game is divided into two halves.
- (b) Each half consists of 20 minutes of play.
- (c) Therefore, the total duration of actual play is **40 minutes** (20 + 20).
- (d) There is a 5-minute break at half-time for teams to change sides and rest.
- (e) For women and juniors, the match duration is slightly shorter, usually consisting of two halves of 15 minutes each (total 30 minutes).
- (f) Understanding these time constraints is essential for coaches to plan their "raids" and "tackles" and manage the substitutions of their players effectively during the closing minutes of a match.

Final Answer: The total duration is 40 minutes.

Answer: (B)



Q50.

Solution**Concept:**

Newton's Laws of Motion describe the relationship between a body and the forces acting upon it, and its motion in response to those forces. The second law provides the mathematical foundation for calculating force and understanding how objects change their speed or direction.

Solution:

- (a) **Newton's Second Law of Motion** states that the rate of change of momentum of an object is directly proportional to the force applied and occurs in the direction of the force.
- (b) It is commonly expressed as the formula: $F = m \times a$ (Force equals mass times acceleration).
- (c) Because this law describes how an object's velocity changes (accelerates) when a force is applied to it, it is popularly known as the **Law of Acceleration**.
- (d) For example, if a shot-putter applies a greater force to the shot (mass), the acceleration will be higher, leading to a longer throw.
- (e) **Law of Inertia** is the First Law, and **Law of Action-Reaction** is the Third Law.
- (f) This law is fundamental in physical education for understanding how to increase performance by either increasing force production or optimizing the mass of the equipment.

Final Answer: It is known as the Law of Acceleration.

Answer: (C)



Answer Key

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

