CBSE Class 12 Physical Education Question Paper with Solutions

Time Allowed :3 Hours	**Maximum Marks :**70	**Total questions :**37

General Instructions

Read the following instructions very carefully and strictly follow them:

1. Please check that this question paper contains 23 printed pages.
2. Q.P. Code given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
3. Please check that this question paper contains 37 questions.
4. 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the candidates will read the question paper only and will not write any answer on the answer-book during this period.

1. Which of the following is the next step after planning the sports event?

(A) Staffing

(C) Controlling

(B) Directing

(D) Organising

Correct Answer: (D) Organising

Solution: Concept: This question is based on the **functions of management**. In sports event management, the process follows a systematic order:

$$\text{Planning} \rightarrow \text{Organising} \rightarrow \text{Staffing} \rightarrow \text{Directing} \rightarrow \text{Controlling}$$

Step 1: Understanding Planning Planning is the first function of management. It involves setting objectives, deciding the type of sports event, preparing schedules, budgeting, and defining goals.

Step 2: Identifying the Next Step After planning is completed, the next step is to arrange resources and structure the event. This includes:

- Dividing work into departments
- Assigning responsibilities
- Creating committees
- Allocating facilities and equipment

This process is called **organising**.

Step 3: Why Other Options Are Incorrect

- **Staffing:** Comes after organising (recruiting officials and volunteers).
- **Directing:** Involves leading and motivating people during execution.
- **Controlling:** Final step involving evaluation and feedback.

Conclusion: Hence, the correct sequence of management functions shows that the step immediately after planning is **organising**. Therefore, the correct answer is option (D).

Quick Tip

Remember the management order for sports events: **Planning** → **Organising** → **Staffing** → **Directing** → **Controlling (POSDC)** This sequence is frequently asked in exams.

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2. _____ is an event to showcase children and youth's abilities and prowess on the sports field.

(A) Run for Fun

(C) Sports Day

(B) Run for a specific cause

(D) Health Run

Correct Answer: (C) Sports Day

Solution: Concept: This question is related to **types of sports events** conducted in schools and communities. Different events have different purposes such as recreation, awareness, fitness, or talent display.

Step 1: Understanding Sports Day Sports Day is a formal event organised in schools or institutions to:

- Showcase physical abilities of children and youth
- Conduct athletic competitions
- Promote sportsmanship and teamwork
- Provide a platform for performance

Hence, it is specifically meant to display sports skills and prowess.

Step 2: Eliminating Other Options

- **Run for Fun:** Recreational event for enjoyment, not competition.
- **Run for a specific cause:** Organised for awareness (charity, social issues).
- **Health Run:** Conducted to promote fitness and healthy lifestyle.

Conclusion: Since the question asks about an event that showcases the abilities and prowess of children and youth in sports, the correct answer is **Sports Day**.

Quick Tip

Sports Day = Talent showcase Run for Fun = Recreation Health Run = Fitness awareness Run for Cause = Social awareness

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3. Corrective exercises should be done under a _____ advice and supervision.

(A) Physician's or Physical Education teacher's

(B) Physical Education teachers' or Physiotherapists'

(C) Physical Education Teacher's or Coaches

(D) Physician's or Physiotherapist's

Correct Answer: (D) Physician's or Physiotherapist's

Solution: Concept: Corrective exercises are specialised exercises used to correct postural deformities or physical abnormalities such as knock knees, flat foot, scoliosis, etc. These exercises must be performed carefully under expert supervision.

Step 1: Need for Expert Supervision Since corrective exercises deal with physical deformities:

- Proper diagnosis is required
- Incorrect exercises may worsen the condition
- Medical knowledge is often necessary

Step 2: Identifying Correct Professionals

- **Physician:** Diagnoses medical conditions and recommends treatment.
- **Physiotherapist:** Specialised in therapeutic and corrective exercises.

Both are qualified to guide corrective exercise programs.

Step 3: Eliminating Other Options

- Physical education teachers and coaches may assist but are not always medically trained.
- Corrective exercises require clinical supervision, not general training guidance.

Conclusion: Corrective exercises should always be performed under professional medical supervision. Therefore, the correct answer is **Physician's or Physiotherapist's**.

Quick Tip

For posture correction: **Diagnosis → Physician Treatment/Exercises → Physiotherapist** This pair is commonly tested in exams.

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4. Which of the following asanas are practised to correct "Kyphosis"?

(A) Chakrasan, Trikonasana, Adhomukhasana

(B) Dhanurasana, Bhujangasana, Halasana

(C) Bhujangasana, Trikonasan, Chakrasana

(D) Dhanurasana, Chakrasana, Bhujangasana

Correct Answer: (D) Dhanurasana, Chakrasana, Bhujangasana

Solution: Concept: Kyphosis is a postural deformity characterised by excessive outward curvature of the thoracic spine, resulting in a hunchback posture. Corrective yoga focuses on spinal extension and chest opening.

Step 1: Understanding Corrective Principle To correct kyphosis:

- Strengthen back muscles
- Expand chest
- Improve spinal flexibility
- Encourage backward bending

Step 2: Suitable Asanas

- **Bhujangasana (Cobra Pose):** Strengthens back and opens chest.
- **Dhanurasana (Bow Pose):** Promotes spinal extension and flexibility.
- **Chakrasana (Wheel Pose):** Deep backbend correcting rounded shoulders.

Step 3: Eliminating Other Options

- Trikonasana and Adhomukhasana are general flexibility poses, not primary kyphosis corrections.
- Halasana is more useful for flexibility and other posture issues, not kyphosis correction.

Conclusion: Asanas involving strong backbends are most effective in correcting kyphosis. Hence, the correct combination is **Dhanurasana, Chakrasana, and Bhujangasana**.

Quick Tip

Kyphosis = Rounded upper back → Do backbends Remember: **Bhujangasana + Dhanurasana + Chakrasana**

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5. Gagan wants to prevent himself from asthma and hypertension. Identify the asanas to prevent him from these lifestyle diseases.

(A) Uttan Mandukasana, Vakrasana

(B) Supta Vajarasana, Vakrasana

(C) Chakrasana, Uttan Mandukasana

(D) Vakrasana, Chakrasana

Correct Answer: (A) Uttan Mandukasana, Vakrasana

Solution: Concept: This question is based on yoga asanas for prevention of lifestyle diseases. Different asanas target specific health conditions such as respiratory disorders and cardiovascular problems.

Step 1: Asana for Asthma Asthma is a respiratory disorder, so asanas that:

- Expand chest
- Improve lung capacity
- Strengthen respiratory muscles

are recommended.

Uttan Mandukasana helps in opening the chest and improving breathing efficiency, making it beneficial for asthma prevention.

Step 2: Asana for Hypertension Hypertension (high blood pressure) requires asanas that:

- Reduce stress
- Improve blood circulation
- Calm the nervous system

Vakrasana (Spinal Twist Pose) helps regulate blood pressure, improves circulation, and reduces stress, making it useful for hypertension prevention.

Step 3: Eliminating Other Options

- Chakrasana is a deep backbend and not commonly prescribed for hypertension.
- Supta Vajrasana is beneficial for digestion and flexibility, not primary for asthma prevention.

Conclusion: Since Uttan Mandukasana helps prevent asthma and Vakrasana helps prevent hypertension, the correct answer is **Option (A)**.

Quick Tip

Lifestyle diseases — remember pairs: Asthma → Chest opening asanas (Uttan Mandukasana) Hypertension → Relaxing twists (Vakrasana)

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6. Identify the asana:

(A) Ardh Matsyendrasana

(B) Dhanurasana

(C) Uttan Mandukasana

(D) Yogmudra

Correct Answer: (C) Uttan Mandukasana

Solution: Concept: The question is based on visual identification of yoga postures. Each asana has a distinct sitting or body alignment pattern.

Step 1: Observing the Image From the image:

- Person is sitting with knees bent outward

- Legs folded under the body (frog-like sitting posture)
- Hands raised upward above the head

Step 2: Matching with Asana Features

- **Uttan Mandukasana (Extended Frog Pose):**
  - Knees wide apart
  - Sitting on heels
  - Arms raised or folded upward

This perfectly matches the posture shown.

Step 3: Eliminating Other Options

- **Ardh Matsyendrasana:** Twisting seated pose.
- **Dhanurasana:** Bow pose performed lying on the stomach.
- **Yogmudra:** Forward bending sitting posture.

Conclusion: The posture shown in the image is clearly Uttan Mandukasana. Therefore, the correct answer is **Option (C)**.

Quick Tip

Frog sitting + arms up = Uttan Mandukasana Remember: Mandukasana = Frog pose (knees wide).

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7. Which of the following competition was organised by Guttmann at the 1948 London Olympics for disabled persons?

(A) Running competition

(B) Swimming competition

(C) Wheelchair competition

(D) Bicycle competition

Correct Answer: (C) Wheelchair competition

Solution: Concept: This question relates to the origin of the Paralympic movement and the contributions of Sir Ludwig Guttmann, a pioneer in sports for persons with disabilities.

Step 1: Who was Guttmann? Sir Ludwig Guttmann was a neurologist who worked with spinal cord injury patients. He believed sports could aid rehabilitation and social integration of disabled persons.

Step 2: 1948 London Olympics Event During the 1948 London Olympics, Guttmann organised the first competitive sporting event for wheelchair patients at Stoke Mandeville Hospital. This event marked the beginning of organised sports for the disabled.

Step 3: Nature of Competition The event specifically involved:

- Wheelchair athletes
- Archery and wheelchair-based competition

It later evolved into the Paralympic Games.

Step 4: Eliminating Other Options

- Running and cycling were not part of the initial event.
- Swimming became part of later Paralympics.

Conclusion: The first competition organised by Guttmann in 1948 for disabled persons was a wheelchair-based event. Hence, the correct answer is **Option (C)**.

Quick Tip

1948 London → Guttmann → Stoke Mandeville Games → Beginning of Paralympics

Key word: Wheelchair sports

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8. The Oath: "Let me win. But if I cannot win, let me be brave in the attempt" is related to which of the following games?

(A) Special Olympics

(C) Deaflympics

(B) Paralympics

(D) Summer Olympics

Correct Answer: (A) Special Olympics

Solution: Concept: This question is based on the official oath of a major international sporting movement. Each global sporting event has its own values and guiding statements.

Step 1: Understanding the Oath The oath:

"Let me win. But if I cannot win, let me be brave in the attempt."

emphasises:

- Courage
- Participation over victory
- Personal effort and bravery

Step 2: Identifying the Associated Event This oath is the official motto of the **Special Olympics**, which is organised for athletes with intellectual disabilities. The movement focuses on inclusion, confidence, and participation rather than only winning.

Step 3: Eliminating Other Options

- **Paralympics:** For athletes with physical disabilities, different motto.
- **Deaflympics:** For athletes with hearing impairment, no such oath.
- **Summer Olympics:** Uses Olympic motto "Citius, Altius, Fortius."

Conclusion: Since the given oath belongs to the Special Olympics, the correct answer is **Option (A)**.

Quick Tip

Remember: **Special Olympics = Courage Oath** "Let me win, but if I cannot win, let me be brave in the attempt."

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9. Given below are the food groups in List-I with their functions in List-II. Match the items and choose the correct option.

List-I (Food Group)

- (a) Protein
- (b) Carbohydrates
- (c) Fats
- (d) Roughage

List-II (Functions)

- (i) These are the main sources of energy
- (ii) It is a negligible source of energy
- (iii) Repair body cells
- (iv) It helps in transporting fat-soluble vitamins

(A) (i) (ii) (iii) (iv)
(B) (iv) (iii) (i) (ii)
(C) (iii) (iv) (i) (ii)
(D) (iii) (i) (iv) (ii)

Correct Answer: (D) (iii) (i) (iv) (ii)

Solution: Concept: This question tests knowledge of basic nutrition and functions of different food groups.

Step 1: Protein Proteins are responsible for:

- Growth and repair of tissues
- Building body cells

Hence, **Protein → (iii) Repair body cells**.

Step 2: Carbohydrates Carbohydrates are:

- Primary source of energy
- Main fuel for daily activities

So, **Carbohydrates → (i) Main sources of energy**.

Step 3: Fats Fats:

- Store energy
- Help transport fat-soluble vitamins (A, D, E, K)

Thus, **Fats → (iv) Transport fat-soluble vitamins**.

Step 4: Roughage Roughage (dietary fibre):

- Helps digestion
- Provides negligible energy

Hence, **Roughage → (ii) Negligible source of energy**.

Step 5: Final Matching

$$(a) \to (iii), \quad (b) \to (i), \quad (c) \to (iv), \quad (d) \to (ii)$$

This corresponds to **Option (D)**.

Conclusion: Correct matching based on nutritional functions gives the answer as **(iii), (i), (iv), (ii)**.

Quick Tip

Nutrition shortcut: Protein → Body building Carbohydrates → Energy Fats → Vitamins transport Roughage → Digestion (no energy)

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10. Which of the following statement is correct regarding the Basal Metabolic Rate?

(A) It is the number of calories needed to maintain energy level during exercise.

(B) It is the number of calories needed to maintain the body at movement.

(C) It is the number of calories needed to maintain body function at high speed.

(D) It is the number of calories needed to maintain body function at rest.

Correct Answer: (D) It is the number of calories needed to maintain body function at rest.

Solution: Concept: Basal Metabolic Rate (BMR) refers to the minimum amount of energy required by the body to sustain vital life processes when the body is completely at rest.

Step 1: Meaning of BMR BMR includes the energy used for:

- Breathing
- Blood circulation
- Cell production
- Brain and organ functioning

These processes occur even when a person is resting or sleeping.

Step 2: Identifying the Correct Statement The definition clearly states that BMR is the energy required to maintain essential body functions **without physical activity**. Hence, it refers to energy consumption at rest.

Step 3: Eliminating Other Options

- Exercise and movement involve additional energy beyond BMR.
- High-speed body functions are not part of basal metabolism.

Conclusion: Basal Metabolic Rate is the number of calories needed to maintain vital body functions at rest. Therefore, the correct answer is **Option (D)**.

Quick Tip

BMR = Basic body energy at Rest No movement, no exercise — just survival energy.

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11. Which of the following is the long-term effect of exercise on the respiratory system?

(A) Residual volume increases

(B) Respiratory rate increases

(C) Stroke volume increases

(D) The rate of exchange of gas increases

Correct Answer: (D) The rate of exchange of gas increases

Solution: Concept: This question focuses on long-term adaptations of the respiratory system due to regular exercise or training.

Step 1: Long-Term Respiratory Adaptations With regular exercise:

- Lung efficiency improves

- Alveoli become more effective
- Oxygen diffusion capacity increases
- Better carbon dioxide removal

These changes enhance gaseous exchange.

Step 2: Evaluating Options

- **Residual volume increases:** Not a major training adaptation.
- **Respiratory rate increases:** Short-term (acute) response, not long-term.
- **Stroke volume increases:** Long-term effect but related to cardiovascular system.
- **Rate of gas exchange increases:** True respiratory adaptation.

Conclusion: Regular exercise improves the efficiency of oxygen and carbon dioxide exchange in the lungs. Therefore, the correct answer is **Option (D)**.

Quick Tip

Long-term effects: Respiratory $\rightarrow$ Better gas exchange Cardiac $\rightarrow$ Higher stroke volume
Short-term $\rightarrow$ Increased breathing rate

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12. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Read both statements carefully and choose the correct option.

Assertion (A): When an object or body is moving at a constant velocity, with no change in speed or direction, it is in dynamic equilibrium.

Reason (R): A cyclist in motion or the body position maintained by a sprinter on the track while running are examples of dynamic equilibrium.

(A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).
(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
(C) Assertion (A) is true, but Reason (R) is false.
(D) Assertion (A) is false, but Reason (R) is true.

Correct Answer: (A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).

Solution:

Concept: Dynamic equilibrium refers to a state where a body continues to move with constant velocity because the net external force acting on it is zero. There is motion, but no acceleration.

Step 1: Evaluating Assertion (A) If a body moves with constant velocity (no change in speed or direction), it means:

- Net force acting on the body is zero.
- Acceleration is zero.

This condition represents dynamic equilibrium. Hence, Assertion (A) is true.

Step 2: Evaluating Reason (R) A cyclist moving at constant speed or a sprinter maintaining body position while running demonstrates balance and controlled motion, which are examples of dynamic equilibrium in motion. Thus, Reason (R) is also true.

Step 3: Relationship Between A and R Reason (R) provides practical examples that explain the concept stated in Assertion (A). Therefore, Reason (R) correctly explains Assertion (A).

Conclusion: Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). Hence, the correct answer is **Option (A)**.

Quick Tip

Dynamic Equilibrium = Motion with constant velocity No acceleration $\rightarrow$ Net force = Zero.

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13. Given below are examples of friction shown in List-I with their respective types of friction in List-II. Match the items correctly.

List-I (Example of friction)

- (a) Pushing a chair

- (b) Sea waves
- (c) Moving heavy (stationary) objects
- (d) Skating

List-II (Types of friction)

- (i) Sliding friction
- (ii) Rolling friction
- (iii) Fluid friction
- (iv) Static friction

(A) (i) (iii) (ii) (iv)

(B) (iv) (ii) (i) (iii)

(C) (i) (iii) (iv) (ii)

(D) (ii) (i) (iv) (iii)

Correct Answer: (C) (i) (iii) (iv) (ii)

Solution:

Concept: Friction is the resistive force that opposes motion. It is classified into static, sliding, rolling, and fluid friction based on the type of motion and medium.

Step 1: Pushing a chair When pushing a chair across the floor, surfaces slide over each other. Hence, **Sliding friction → (i)**.

Step 2: Sea waves Sea waves involve motion through water, which is a fluid medium. Thus, **Fluid friction → (iii)**.

Step 3: Moving heavy stationary objects Before an object starts moving, friction resisting motion is static friction. Therefore, **Static friction → (iv)**.

Step 4: Skating In skating, motion involves wheels or blades rolling/gliding with minimal resistance. In such classification questions, it is associated with **Rolling friction → (ii)**.

Step 5: Final Matching

$$(a) \to (i), \quad (b) \to (iii), \quad (c) \to (iv), \quad (d) \to (ii)$$

This corresponds to **Option (C)**.

Conclusion: Correct matching of friction examples gives the answer as **(i), (iii), (iv), (ii)**.

Quick Tip

Friction shortcut: Static → Before motion Sliding → Surfaces slide Rolling → Wheels/skating Fluid → Water or air resistance

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14. Which of the following statements is correct regarding the lever's fulcrum?

(A) It is a point at which the force is applied.

(B) It is a point at which the load is located.

(C) It is a point at which the lever rotates.

(D) It is a point at which efforts are made.

Correct Answer: (C) It is a point at which the lever rotates.

Solution:

Concept: A lever is a simple machine consisting of three main parts:

- Fulcrum (pivot point)
- Effort (force applied)
- Load (resistance)

Step 1: Understanding Fulcrum The fulcrum is the fixed point around which the lever moves or rotates. It acts as the pivot that supports the lever's motion.

Step 2: Eliminating Other Options

- Force applied → Effort, not fulcrum.
- Load located → Load point.
- Efforts made → Refers to effort arm, not pivot.

Conclusion: The fulcrum is the point about which the lever rotates. Hence, the correct answer is **Option (C)**.

Quick Tip

Lever parts: Fulcrum = Pivot point Effort = Applied force Load = Resistance

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15. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Read both statements carefully and choose the correct option.

Assertion (A): Actions and responses of two athletes may differ during a match situation.

Reason (R): Personality is the combination of an individual's thoughts, characteristics, behaviour, attitude and habits.

(A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false.

(D) Assertion (A) is false, but Reason (R) is true.

Correct Answer: (A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).

Solution:

Concept: This question is based on sports psychology and the role of personality in athletic behaviour.

Step 1: Evaluating Assertion (A) Different athletes may react differently in match situations due to:

- Emotional control
- Confidence level
- Decision-making style

Thus, Assertion (A) is true.

Step 2: Evaluating Reason (R) Personality is indeed defined as a combination of:

- Thoughts

- Behaviour
- Attitude
- Habits and traits

So, Reason (R) is also true.

Step 3: Relationship Between A and R Since personality influences behaviour and responses, differences in personality explain why athletes react differently during matches. Therefore, Reason (R) correctly explains Assertion (A).

Conclusion: Both Assertion (A) and Reason (R) are true, and Reason (R) correctly explains Assertion (A). Hence, the correct answer is **Option (A)**.

Quick Tip

Sports psychology rule: Different personality $\rightarrow$ Different reactions in competition.

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16. Shweta is over-stressed and anxious as she is preparing for her 'NEET' exam. Which of the following is a suitable reason for her to exercise?

(A) To develop physical strength

(B) Mental Relaxation

(C) For Socialisation

(D) To reduce the risk of disease

Correct Answer: (B) Mental Relaxation

Solution:

Concept: Exercise has multiple benefits including physical fitness, mental health improvement, stress reduction, and emotional balance. The purpose depends on the individual's need.

Step 1: Understanding the Situation Shweta is:

- Over-stressed
- Anxious due to exam pressure

This is a psychological and emotional condition rather than a physical health issue.

Step 2: Role of Exercise in Stress Regular exercise helps in:

- Releasing endorphins (feel-good hormones)
- Reducing anxiety and stress
- Improving mood and concentration

Thus, the primary benefit here is mental relaxation.

Step 3: Eliminating Other Options

- Physical strength → Not the main concern.
- Socialisation → Not related to exam stress directly.
- Disease prevention → Long-term benefit, not immediate need.

Conclusion: Since Shweta is experiencing stress and anxiety, the most suitable reason for exercising is mental relaxation. Hence, the correct answer is **Option (B)**.

Quick Tip

For stress or anxiety → Exercise for mental relaxation For fitness → Strength For long-term health → Disease prevention

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17. Which one of the following is NOT correct regarding the training cycle in sports?

(A) A mesocycle is termed as medium duration training.
(B) The duration of a microcycle is 3 to 10 days.
(C) The duration of the mesocycle is 3 to 6 weeks.
(D) The macrocycle has the minimum duration of training.

Correct Answer: (D) The macrocycle has the minimum duration of training.

Solution:

Concept: Sports training is structured into cycles to ensure systematic development of performance. The main cycles are:

- Macrocycle (long-term)
- Mesocycle (medium-term)

- Microcycle (short-term)

Step 1: Microcycle

- Shortest training unit
- Usually lasts about 3 to 10 days (often one week)

Hence, option (B) is correct.

Step 2: Mesocycle

- Medium duration training cycle
- Typically lasts 3 to 6 weeks

Thus, options (A) and (C) are correct.

Step 3: Macrocycle

- Longest training cycle
- May span several months or even a year

Therefore, it does NOT have the minimum duration.

Conclusion: Since the macrocycle is the longest, the statement saying it has the minimum duration is incorrect. Hence, the correct answer is **Option (D)**.

Quick Tip

Training cycle order: Micro $\rightarrow$ Short Mesocycle $\rightarrow$ Medium Macrocycle $\rightarrow$ Long (whole season/year)

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18. Which of the following types of endurance is classified according to the nature of the activity?

(A) Speed endurance

(B) Medium time endurance

(C) Specific endurance

(D) Short-term endurance

Correct Answer: (C) Specific endurance

Solution:

Concept: Endurance can be classified based on different criteria:

- Duration of activity (short-term, medium-term, long-term)
- Energy system involved
- Nature of activity or sport

Step 1: Classification by Duration

- Short-term endurance
- Medium-term endurance
- Long-term endurance

These depend on time duration, not activity type.

Step 2: Classification by Speed

- Speed endurance relates to sustaining high speed for a duration.

This is intensity-based classification.

Step 3: Classification by Nature of Activity When endurance is classified according to the specific demands of a sport or activity, it is called:

- **Specific endurance**

Example: Swimming endurance, cycling endurance, game-specific endurance.

Conclusion: Endurance classified based on the nature of the activity is known as **Specific endurance**. Hence, the correct answer is **Option (C)**.

Quick Tip

Endurance types: Time-based → Short / Medium / Long Sport-based → Specific endurance

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19. "Sports that require athletes to maintain a specific weight to perform well are at higher risk of developing eating disorders." Justify this statement.

Correct Answer: Sports with strict weight requirements increase pressure on athletes to control body weight, which may lead to unhealthy eating habits and a higher risk of eating disorders.

Solution:

Concept: Certain sports emphasise body weight or physique as a key factor for performance. This pressure can negatively affect athletes' physical and psychological health, increasing the likelihood of eating disorders.

Step 1: Weight-Sensitive Sports Many sports require athletes to maintain a specific weight category or body structure, such as:

- Wrestling and boxing (weight categories)
- Gymnastics and figure skating (lean physique)
- Athletics and endurance sports (lighter body advantage)

Step 2: Performance Pressure Athletes in such sports face:

- Pressure from coaches and competitions
- Fear of losing performance advantage
- Stress of frequent weigh-ins

This pressure encourages rapid or extreme weight control.

Step 3: Unhealthy Weight-Control Methods To maintain weight, athletes may adopt harmful practices such as:

- Skipping meals or severe dieting
- Dehydration techniques
- Excessive exercise
- Use of laxatives or supplements

These behaviours are associated with eating disorders like anorexia and bulimia.

Step 4: Psychological Factors Constant focus on body weight can lead to:

- Body image dissatisfaction

- Anxiety and low self-esteem
- Obsession with food and calories

This increases vulnerability to disordered eating patterns.

Conclusion: Thus, sports that demand strict weight control create physical and psychological pressure on athletes. This environment increases the risk of unhealthy eating behaviours and eating disorders, justifying the given statement.

Quick Tip

Weight-category or aesthetic sports $\rightarrow$ Higher eating disorder risk Pressure + Body image concerns = Disordered eating

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20. Write any four benefits of Nadi-Shodhan Pranayama.

Correct Answer: Nadi-Shodhan Pranayama helps in calming the mind, improving concentration, balancing the nervous system, and enhancing respiratory efficiency.

Solution:

Concept: Nadi-Shodhan Pranayama (alternate nostril breathing) is a yogic breathing technique that purifies the energy channels (nadis) and promotes physical and mental well-being.

Four Benefits of Nadi-Shodhan Pranayama:

- **Reduces stress and anxiety:** It calms the mind and promotes relaxation by regulating breathing patterns.
- **Improves concentration and mental clarity:** Regular practice enhances focus, memory, and cognitive performance.
- **Balances the nervous system:** It harmonises the sympathetic and parasympathetic nervous systems, leading to emotional stability.
- **Enhances respiratory efficiency:** Improves lung capacity and oxygen supply to the body.

Conclusion: Nadi-Shodhan Pranayama is a simple yet powerful breathing exercise that improves mental calmness, concentration, nervous system balance, and respiratory health.

Quick Tip

Nadi-Shodhan = Alternate nostril breathing Key benefits: Calm mind, better focus, balanced nerves, improved breathing.

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21. What is the role of Physical Education teachers in promoting inclusion in sports?

Correct Answer: Physical Education teachers play a vital role in promoting inclusion by creating equal opportunities, adapting activities, encouraging participation, and fostering a supportive environment for all students.

Solution:

Concept: Inclusive sports ensure that all students, including those with disabilities or diverse abilities, get equal opportunities to participate. Physical Education (PE) teachers are key facilitators of inclusive practices in schools.

Role of Physical Education Teachers:

- **Providing equal opportunities:** Ensure that every student, regardless of ability, gender, or background, gets a chance to participate in sports and physical activities.
- **Adapting activities and rules:** Modify equipment, rules, and teaching methods to suit students with different abilities (e.g., lighter balls, shorter distances, flexible rules).
- **Encouraging participation and confidence:** Motivate students with special needs and help build self-esteem through positive reinforcement.
- **Creating a supportive environment:** Promote respect, empathy, and teamwork among students to eliminate discrimination and bullying.
- **Collaboration with specialists:** Work with physiotherapists, special educators, and parents to design suitable programs for inclusive participation.
- **Awareness and sensitisation:** Educate students about diversity and inclusion, helping develop acceptance and understanding.

Conclusion: Physical Education teachers act as facilitators of inclusive sports by ensuring accessibility, modifying activities, and promoting a positive and supportive environment where every student can participate and benefit from sports.

Quick Tip

Inclusive PE = Equal opportunity + Adapted activities + Supportive environment
Teacher is the key driver of inclusion.

---

22. Explain the procedure of any one strength test of the SAI Khelo India Fitness Test used for 9 to 18 years / class 4 to 12 children.

Correct Answer: One commonly used strength test in the SAI Khelo India Fitness Test is the **Push-Up Test**, which measures upper body strength and endurance.

Solution:

Concept: The SAI Khelo India Fitness Test battery includes various tests to assess physical fitness components such as strength, endurance, flexibility, and agility. The Push-Up Test is widely used to evaluate upper body strength in school children.

Procedure of Push-Up Test:

1. **Starting Position:** The participant lies in a prone position on the floor with hands placed slightly wider than shoulder-width apart and toes on the ground.
2. **Body Alignment:** The body should remain straight from head to heels without bending the hips or knees.
3. **Execution:** The participant lowers the body by bending the elbows until the chest is close to the ground, then pushes back up to the starting position.
4. **Repetitions:** The participant performs as many correct push-ups as possible without rest while maintaining proper form.
5. **Scoring:** Only correctly executed push-ups are counted. The total number of valid repetitions determines the score.

Purpose of the Test:

- Measures upper body strength and endurance
- Assesses fitness level of children aged 9–18 years
- Helps in talent identification and fitness monitoring

Conclusion: The Push-Up Test is a simple and effective method in the SAI Khelo India Fitness Test to evaluate upper body strength and endurance among school children.

Quick Tip

SAI Khelo India Strength Tests (examples): Push-ups → Upper body strength Partial curl-ups → Core strength Standing broad jump → Leg power

---

23. In the examples given below, which of the Newton's Law of Motion will apply? Justify your answer.

(a) When a swimmer pushes the water backwards.

(b) When a cricket and tennis ball are thrown with the same force, the tennis ball moves with greater acceleration.

Correct Answer: (a) Newton's Third Law of Motion (b) Newton's Second Law of Motion

Solution:

Concept: Newton's Laws of Motion explain the relationship between force, motion, and mass. Each situation can be analysed based on how force and motion interact.

(a) Swimmer pushing water backwards This situation follows **Newton's Third Law of Motion**, which states:

For every action, there is an equal and opposite reaction.

Justification:

- The swimmer pushes water backwards (action).
- Water pushes the swimmer forward with equal and opposite force (reaction).

This reaction force helps the swimmer move forward in water.

(b) Cricket ball vs tennis ball with same force This example follows **Newton's Second Law of Motion**, which states:

$$F = m \times a \quad \text{or} \quad a = \frac{F}{m}$$

Justification:

- Both balls are thrown with the same force.
- The tennis ball has less mass compared to the cricket ball.
- According to $a = \frac{F}{m}$, smaller mass results in greater acceleration.

Hence, the tennis ball accelerates more.

Conclusion:

- (a) Swimmer example demonstrates Newton's Third Law (action-reaction).
- (b) Ball example demonstrates Newton's Second Law (acceleration depends on mass and force).

Quick Tip

Newton's Laws shortcut: Third Law $\rightarrow$ Action = Reaction (Swimming, jumping) Second Law $\rightarrow$ $F = ma$ (Mass vs acceleration problems)

---

24. Briefly explain talent selection and talent transfer in the process of talent identification and talent development.

Correct Answer: Talent selection and talent transfer are important stages of talent identification and development, helping in choosing suitable athletes and redirecting them to sports where they can perform best.

Solution:

Concept: Talent identification and development is a systematic process used to discover, nurture, and guide athletes toward high performance. Two key components of this process are talent selection and talent transfer.

1. Talent Selection: Talent selection refers to the process of choosing individuals who show the highest potential for success in a particular sport.

Explanation:

- Based on physical, physiological, psychological, and motor abilities.
- Includes tests of strength, speed, endurance, coordination, and skill level.
- Helps in selecting the most suitable candidates for specialised training.
- Ensures resources are invested in athletes with high performance potential.

2. Talent Transfer: Talent transfer is the process of shifting an athlete from one sport to another where their abilities may lead to better success.

Explanation:

- Occurs when an athlete's skills are better suited to another sport.
- For example, a gymnast may shift to diving, or a sprinter to cycling.
- Helps utilise existing physical and motor abilities effectively.
- Saves training time and enhances chances of elite performance.

Conclusion: Talent selection identifies promising athletes for specific sports, while talent transfer redirects athletes to more suitable sports. Both processes play a vital role in effective talent identification and long-term athlete development.

Quick Tip

Talent pathway: Identification $\rightarrow$ Selection $\rightarrow$ Development $\rightarrow$ Transfer (if needed)
Right athlete in the right sport = Better performance.

---

25. Compare and contrast the intramural and the extramural tournament.

Correct Answer: Intramural tournaments are conducted within an institution among its members, whereas extramural tournaments involve competitions between different institutions or teams from outside.

Solution:

Concept: Sports tournaments can be broadly classified based on participation level and organisational scope. Intramural and extramural tournaments differ in structure, purpose, and level of competition.

Intramural Tournament:

- Conducted within the same institution (school/college).
- Participants belong to the same organisation (houses, classes, departments).
- Focus on mass participation and recreation.
- Promotes unity, fitness, and sportsmanship.
- Lower level of competition.
- Example: Inter-house sports competition in a school.

Extramural Tournament:

- Conducted between different institutions or organisations.
- Participants represent their schools, colleges, districts, or states.
- Focus on high performance and competition.
- Provides exposure and competitive experience.
- Higher level of competition.
- Example: Inter-school or inter-college tournaments.

Comparison:

Basis	**Intramural**	**Extramural**
Participation	Within institution	Between institutions
Purpose	Recreation	Competition
Level	Low/Moderate	High
Objective	Mass participation	Performance and exposure

Conclusion: Intramural tournaments promote participation and enjoyment within an institution, while extramural tournaments focus on competitive performance and exposure at higher levels.

Quick Tip

Intramural = Within school (Participation) Extramural = Outside competition (Performance)

---

26. Devise a plan of physical activities in accordance with World Health Organization guidelines for adults aged 65 and above.

Correct Answer: A physical activity plan for adults aged 65+ should include moderate aerobic exercise, strength training, balance activities, and flexibility exercises as recommended by WHO.

Solution:

Concept: According to World Health Organization (WHO) guidelines, older adults (65 years and above) should engage in regular physical activity to maintain functional ability, prevent diseases, and improve quality of life.

WHO Recommendations:

- At least 150–300 minutes of moderate-intensity aerobic activity per week
- Muscle-strengthening activities at least 2 days per week
- Balance and flexibility exercises for fall prevention

Suggested Weekly Physical Activity Plan:

1. Aerobic Activities (5 days/week)

- Brisk walking (20–30 minutes daily)
- Light cycling or swimming
- Gardening or light dancing

2. Strength Training (2–3 days/week)

- Bodyweight exercises (chair squats, wall push-ups)
- Resistance band exercises
- Light weight training

3. Balance Exercises (Daily or 3+ days/week)

- Heel-to-toe walking
- Standing on one leg (with support)
- Tai chi or yoga balance poses

4. Flexibility Exercises (Daily)

- Stretching major muscle groups
- Gentle yoga
- Joint mobility exercises

5. Safety Guidelines:

- Start slowly and increase intensity gradually
- Avoid overexertion
- Stay hydrated
- Consult a physician if chronic illness exists

Conclusion: A balanced activity plan including aerobic, strength, balance, and flexibility exercises aligned with WHO guidelines helps older adults maintain independence, prevent falls, and improve overall health and well-being.

Quick Tip

WHO 65+ Rule: 150–300 min aerobic + Strength (2 days) + Balance + Flexibility Focus = Mobility, independence, fall prevention

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27. Enlist the asanas for obesity. Explain the procedure of any one asana for it.

Correct Answer: Common asanas for obesity include Trikonasana, Bhujangasana, Dhanurasana, Paschimottanasana, and Pavanamuktasana. One such asana is Bhujangasana.

Solution:

Concept: Yoga helps in managing obesity by improving metabolism, reducing fat accumulation, and strengthening muscles. Certain asanas are especially effective for weight reduction and abdominal fat control.

Asanas for Obesity:

- Trikonasana (Triangle Pose)
- Bhujangasana (Cobra Pose)
- Dhanurasana (Bow Pose)
- Paschimottanasana (Seated Forward Bend)
- Pavanamuktasana (Wind-Relieving Pose)

Procedure of Bhujangasana (Cobra Pose):

1. **Starting Position:** Lie flat on the stomach with legs stretched and feet together. Place palms beside the shoulders.
2. **Body Alignment:** Keep elbows close to the body and forehead touching the ground.
3. **Raising the Body:** Inhale slowly and lift the head, chest, and abdomen upward using arm support, while keeping the lower body on the floor.
4. **Final Position:** Stretch the neck backward and hold the position for 10–20 seconds while breathing normally.
5. **Returning:** Exhale and slowly bring the body back to the original position.

Benefits for Obesity:

- Reduces abdominal fat
- Improves metabolism
- Strengthens back and core muscles

- Enhances digestion

Conclusion: Various yoga asanas help control obesity by improving metabolism and reducing fat. Bhujangasana is an effective and simple asana that aids in weight management and overall fitness.

Quick Tip

Yoga for obesity = Twisting + Bending + Core activation Bhujangasana is easy and effective for beginners.

---

28. Prashant began vomiting after lunch at school. He was promptly taken to a nearby doctor, who diagnosed him with food intolerance. Outline three types of food intolerance.

Correct Answer: Three common types of food intolerance are lactose intolerance, gluten intolerance, and food additive intolerance.

Solution:

Concept: Food intolerance occurs when the digestive system is unable to properly process certain foods. Unlike food allergies, it does not involve the immune system but can cause discomfort such as vomiting, bloating, or diarrhoea.

Types of Food Intolerance:

- **Lactose Intolerance:** Caused by deficiency of lactase enzyme, leading to difficulty in digesting milk and dairy products. Symptoms include bloating, cramps, and vomiting.
- **Gluten Intolerance (Non-celiac gluten sensitivity):** Inability to tolerate gluten found in wheat, barley, and rye. It may cause digestive problems, fatigue, and nausea.
- **Food Additive Intolerance:** Reaction to artificial additives like preservatives, colours, or flavour enhancers (e.g., MSG). Symptoms may include headaches, nausea, or stomach upset.

Conclusion: Food intolerance can result from difficulty in digesting certain substances like lactose, gluten, or food additives. Identifying the type helps in managing diet and preventing symptoms.

Quick Tip

Food intolerance Allergy Common types: Lactose, Gluten, Food additives

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29. Elucidate three physiological changes that occur due to ageing.

Correct Answer: Three major physiological changes due to ageing include reduced muscle mass and strength, decreased cardiovascular efficiency, and decline in bone density.

Solution:

Concept: Ageing is a natural biological process that leads to gradual decline in the efficiency of body systems. Physiological changes affect physical performance, metabolism, and overall health.

Physiological Changes Due to Ageing:

- **Loss of Muscle Mass and Strength (Sarcopenia):** With age, muscle fibres decrease in size and number, resulting in reduced strength and endurance. This affects mobility and daily functioning.
- **Reduced Cardiovascular Efficiency:** The heart's pumping capacity declines, and blood vessels become less elastic. This leads to decreased aerobic capacity, slower circulation, and reduced stamina.
- **Decrease in Bone Density:** Bones lose minerals like calcium, becoming weaker and more fragile. This increases the risk of fractures and conditions like osteoporosis.

Conclusion: Ageing brings several physiological changes such as decline in muscle strength, reduced cardiovascular efficiency, and weakening of bones. Regular physical activity and a healthy lifestyle can help slow these effects.

Quick Tip

Ageing effects: Muscles ↓ Strength Heart ↓ Efficiency Bones ↓ Density Exercise can slow ageing.

---

30. Describe three factors that affect the trajectory of a projectile.

Answer: Three main factors affecting projectile trajectory are the angle of projection, velocity of projection, and height of release.

Solution:

Concept: A projectile is any object thrown into the air that moves under the influence of gravity. Its path is called a trajectory. Several factors determine how far and high the projectile travels.

Factors Affecting Projectile Trajectory:

- **Angle of Projection:** The angle at which the object is launched greatly influences the trajectory. An angle of around 45° generally provides maximum horizontal range (in ideal conditions). Different angles change height and distance.
- **Velocity of Projection:** The speed at which the projectile is released determines how far it travels. Greater velocity results in longer range and higher trajectory.
- **Height of Release:** The initial height from which the object is projected also affects its path. A higher release point increases flight time and horizontal distance (e.g., javelin throw vs ground throw).

Conclusion: The trajectory of a projectile is mainly influenced by the angle and velocity of projection and the height of release. Proper manipulation of these factors helps improve performance in sports like throwing and jumping events.

Quick Tip

Projectile basics: Angle + Speed + Height = Trajectory More speed or height $\rightarrow$ Greater range.

---

31. (i) In which round will the match between team 4 and team 3 be held?

Correct Answer: Round I

Solution:

Concept: The fixture follows a single league (round-robin) format where each team plays every other team once.

From the rotation method used in league fixtures for 7 teams, the pairing of team 4 and team 3 occurs in **Round I**.

Conclusion: The match between team 4 and team 3 will be held in **Round I**.

Quick Tip

In round-robin fixtures, check the rotation pattern of teams to identify specific match pairings.

---

32. (ii) How many rounds will be played in the tournament?

(A) 6

(B) 7

(C) 5

(D) 4

Correct Answer: (B) 7

Solution:

Concept: In a single league tournament:

$$\text{Number of rounds} = n \quad \text{(if number of teams is odd)}$$

Here, total teams = 7 (odd number).

$$\text{Rounds} = 7$$

Conclusion: The tournament will have **7 rounds**. Hence, option (B) is correct.

Quick Tip

If teams are odd $\rightarrow$ Rounds = n If teams are even $\rightarrow$ Rounds = n - 1

---

33. (iii) In which round will team number 2 get a bye?

Correct Answer: Round VI

Solution:

Concept: In a league tournament with 7 teams, each team gets exactly one bye because one team remains idle in every round.

By analysing the rotation pattern of the fixture, team number 2 gets its bye in **Round VI**.

Conclusion: Team number 2 will receive a bye in **Round VI**.

Quick Tip

In odd-team league fixtures, every team gets exactly one bye during the tournament.

---

34. (iv) How many matches will be played in the above fixture?

(A) 21

(B) 23

(C) 19

(D) 18

Correct Answer: (A) 21

Solution:

Concept: Total matches in a single league tournament are calculated using the formula:

$$\text{Matches} = \frac{n(n-1)}{2}$$

Here, $n = 7$

$$\text{Matches} = \frac{7 \times 6}{2} = 21$$

Conclusion: The total number of matches played in the tournament will be **21**. Hence, option (A) is correct.

Quick Tip

League tournament formula: Total Matches = $n(n-1)/2$

35. (iv) The other name for a league tournament is:

Correct Answer: Round Robin Tournament

Solution:

Concept: A league tournament is a format in which every team plays against every other team at least once. This structure ensures equal opportunity and is widely used in school and professional competitions.

Explanation: The league format is also commonly known as a **Round Robin Tournament** because:

- Each team competes with all other teams in rotation.
- Matches are scheduled in rounds.
- Points are awarded based on wins/draws.

Conclusion: The other name for a league tournament is the **Round Robin Tournament**.

Quick Tip

League Tournament = Round Robin Format Everyone plays with everyone.

---

36. (i) What type of injury did Rohan suffer?

(A) Strain

(B) Abrasion

(C) Sprain

(D) Laceration

Correct Answer: (C) Sprain

Solution:

Rohan had unbearable ankle pain with swelling after collision. This indicates ligament injury, which is called a **sprain**.

Quick Tip

Sprain = Ligament injury (joint swelling, pain).

---

37. (ii) Sachin had _____ on his forehead.

(A) Contusion

(B) Fracture

(C) Laceration

(D) Incision

Correct Answer: (A) Contusion

Solution:

A collection of blood outside a blood vessel is called a **contusion** (bruise).

Quick Tip

Contusion = Bruise caused by bleeding under skin.

---

38. (iii) If Sachin suffered abrasion during the injury, which symptom would he have?

(A) Tear of ligament

(B) Rubbing away of upper layer of epidermis

(C) Tear of muscles

(D) Instability of joints

Correct Answer: (B) Rubbing away of upper layer of epidermis

Solution:

An abrasion involves scraping of skin where the upper epidermis is rubbed off.

Quick Tip

Abrasion = Skin scrape (outer layer damaged).

---

39. (iv) A fracture in a soft bone in which the bone bends is known as:

(A) Comminuted fracture

(B) Transverse fracture

(C) Greenstick fracture

(D) Oblique fracture

Correct Answer: (C) Greenstick fracture

Solution:

A **greenstick fracture** occurs mostly in children where soft bones bend and partially break instead of snapping completely.

Quick Tip

Greenstick fracture = Bone bends (common in children).

---

40. (i) What type of challenges Akriti is facing?

(A) Visually impaired

(B) Hearing and speech impaired

(C) Physical disability

(D) Learning disability

Correct Answer: (B) Hearing and speech impaired

Solution:

Akriti is deaf and mute by birth and communicates through gestures and lip movements. This clearly indicates **hearing and speech impairment**.

Quick Tip

Deaf + mute = Hearing and speech impairment.

---

41. (ii) Why does Akriti feel isolated in her physical activity class?

(A) Because she is not interested in studies.

(B) Because her teacher is not supportive.

(C) Because other students hesitate to interact with her.

(D) Due to lack of physical fitness.

Correct Answer: (C) Because other students hesitate to interact with her.

Solution:

The passage states that other students hesitate to talk and play with her, which makes her feel isolated.

Quick Tip

Isolation often results from lack of peer interaction, not disability itself.

---

42. (iii) Which of the following is the key principle of inclusive physical education?

(A) Segregation

(B) Integration

(C) Exclusion

(D) Adaptation

Correct Answer: (D) Adaptation

Solution:

Inclusive physical education focuses on modifying activities, rules, and environment to suit all learners. This principle is called **adaptation**.

Quick Tip

Inclusive PE = Adapt activities so everyone can participate.

---

43. (iii) What strategy can be used to facilitate communication with Akriti during physical activities?

(A) Using loud verbal instructions

(B) Using sign language or gestures

(C) Ignoring her needs

(D) Focusing only on written communication

Correct Answer: (B) Using sign language or gestures

Solution:

Akriti is deaf and mute and communicates through gestures and lip movements. Therefore, the most effective communication strategy is **sign language or gestures**.

Quick Tip

For hearing impairment → Use gestures, signs, and visual cues.

---

44. (iv) How can physical activities be made inclusive to meet Akriti's needs?

(A) By providing training in a comfortable and emotionally secure environment.

(B) By excluding her from activities

(C) By providing separate programs

(D) By focusing only on individual activities

Correct Answer: (A) By providing training in a comfortable and emotionally secure environment.

Solution:

Inclusive physical education ensures participation in a supportive and emotionally safe environment. Providing comfort and security encourages confidence and integration.

Quick Tip

Inclusive PE = Safe, supportive, emotionally secure environment.

---

45. Differentiate between Scoliosis and Lordosis deformities. Suggest corrective measures for Knock-knee and Flat foot deformities.

Correct Answer: Scoliosis and lordosis are spinal deformities differing in direction of curvature, while knock-knee and flat foot deformities can be corrected through specific exercises and postural measures.

Solution:

Concept: Postural deformities affect body alignment and movement efficiency. Understanding differences between spinal deformities and corrective measures for lower limb deformities is essential in physical education.

Difference between Scoliosis and Lordosis:

Basis	Scoliosis	Lordosis
Definition	Sideways curvature of spine	Excess inward curvature of lower spine
Shape	S or C shaped curve	Hollow back posture
Region affected	Thoracic or entire spine	Lumbar (lower back) region
Appearance	Uneven shoulders/hips	Protruding abdomen and buttocks

Corrective Measures:

1. Knock-knee (Genu valgum):

- Walking on outer edges of feet
- Horse riding or cycling
- Strengthening inner thigh muscles
- Avoiding incorrect sitting posture

2. Flat Foot:

- Walking on toes or heels
- Picking objects with toes
- Skipping and running on sand
- Using arch-support footwear

Conclusion: Scoliosis involves lateral spinal curvature, while lordosis involves excessive inward lumbar curvature. Knock-knee and flat foot deformities can be managed with regular corrective exercises and proper posture training.

Quick Tip

Spine deformities: Scoliosis → Side curve Lordosis → Inward lumbar curve Foot issues → Correct with strengthening exercises.

---

46. Raghav plans to conduct strength and flexibility tests specifically for the lower body, targeting his grandfather's friend. Explain in detail the procedure and scoring system to administer these tests.

Correct Answer: Suitable lower body tests for older adults include the Chair Stand Test (strength) and Chair Sit-and-Reach Test (flexibility), commonly used in senior fitness assessments.

Solution:

Concept: For elderly individuals, safe and reliable field tests are recommended to assess lower body strength and flexibility. The Senior Citizen Fitness Test battery includes standardized methods such as the Chair Stand Test and Chair Sit-and-Reach Test.

1. Lower Body Strength Test: Chair Stand Test

Procedure:

1. Use a standard chair without armrests placed against a wall.
2. The participant sits in the middle of the chair, back straight, feet flat on the floor.
3. Arms are crossed over the chest.
4. On the signal "Go", the participant stands up fully and sits down again.
5. The participant performs as many full stands as possible in 30 seconds.

Scoring:

- Count the total number of correct stands completed in 30 seconds.
- A higher number indicates better lower body strength and endurance.

2. Lower Body Flexibility Test: Chair Sit-and-Reach Test

Procedure:

1. The participant sits on the edge of a chair.
2. One leg is extended straight with heel on the floor and toes pointing upward.
3. The other foot remains flat on the floor.
4. With both hands overlapped, the participant slowly bends forward, reaching toward the toes of the extended leg.
5. Hold the final position briefly without bouncing.

Scoring:

- Measure the distance between fingertips and toes using a ruler.
- If fingers reach beyond toes → Positive score (+).
- If fingers fall short → Negative score (–).
- Greater reach indicates better flexibility.

Safety Considerations:

- Ensure warm-up before testing.
- Provide support to avoid falls.
- Stop if pain or dizziness occurs.

Conclusion: The Chair Stand Test and Chair Sit-and-Reach Test are safe and effective methods to evaluate lower body strength and flexibility in older adults, with simple procedures and clear scoring systems.

Quick Tip

Senior lower body tests: Chair Stand → Strength Chair Sit-and-Reach → Flexibility
Safe and ideal for elderly fitness assessment.

---

47. What do you understand by motivation? Which motivational techniques are used to improve the performance of the players? Explain in detail.

Correct Answer: Motivation is the internal or external force that stimulates individuals to act toward achieving goals. Various motivational techniques such as rewards, goal setting, praise, and positive environment help improve players' performance.

Solution:

Concept: Motivation plays a vital role in sports performance. It energizes, directs, and sustains an athlete's behavior toward achieving excellence.

Meaning of Motivation: Motivation is the psychological process that arouses, directs, and maintains goal-oriented behavior. It encourages athletes to train hard, overcome challenges, and perform better.

It can be:

- **Intrinsic motivation:** Comes from within (interest, enjoyment, passion).
- **Extrinsic motivation:** Comes from external factors (rewards, praise, recognition).

Motivational Techniques to Improve Performance:

- **Goal Setting:** Setting short-term and long-term achievable goals keeps athletes focused and improves consistency.
- **Rewards and Incentives:** Medals, certificates, scholarships, or recognition motivate players to perform better.
- **Positive Reinforcement:** Praising good performance boosts confidence and encourages repetition of desired behavior.
- **Constructive Feedback:** Providing corrective guidance helps athletes identify weaknesses and improve skills.
- **Creating Healthy Competition:** Competitive environment enhances effort and pushes athletes to give their best.
- **Role Models and Inspiration:** Sharing success stories of great athletes motivates players to emulate them.
- **Supportive Environment:** Encouragement from coaches, parents, and teammates builds self-belief and reduces anxiety.

- **Visualization Techniques:** Mental imagery of success improves confidence and performance readiness.

Conclusion: Motivation is essential for enhancing sports performance. By using techniques like goal setting, rewards, positive reinforcement, and supportive coaching, athletes can stay driven and achieve higher levels of success.

Quick Tip

Motivation = Drive to perform Use goals + rewards + praise + positive environment for best performance.

---

48. What is speed? Explain the methods to develop speed in detail.

Correct Answer: Speed is the ability to perform a movement in the shortest possible time. It can be developed through various training methods such as acceleration runs, interval training, resistance training, and proper technique drills.

Solution:

Concept: Speed is an essential component of physical fitness and sports performance. It enables athletes to move quickly, react faster, and perform explosive actions efficiently.

Definition of Speed: Speed is the ability of an individual to perform a movement or cover a distance in the minimum possible time. It includes reaction speed, movement speed, and acceleration.

Methods to Develop Speed:

- **Acceleration Runs:** Short-distance sprints (20–60 m) help improve starting speed and acceleration.
- **Interval Training:** Repeated high-intensity runs with rest intervals enhance speed endurance and recovery ability.
- **Repetition Method:** Performing maximum effort sprints with full recovery between repetitions improves pure speed.

- **Resistance Training:** Running with resistance (parachutes, sleds, uphill runs) builds explosive strength and sprinting power.
- **Plyometric Exercises:** Jump training like bounding, hopping, and box jumps increases fast-twitch muscle activation.
- **Technique Training:** Proper running mechanics (stride length, arm movement, body posture) improve efficiency and speed.
- **Reaction Time Drills:** Quick-start drills using visual or auditory signals enhance response speed.
- **Flexibility Training:** Stretching improves muscle elasticity, allowing faster and smoother movements.

Important Guidelines:

- Adequate warm-up before speed training
- Full recovery between repetitions
- Gradual increase in intensity
- Proper rest and nutrition

Conclusion: Speed is the ability to move quickly in minimal time and can be improved through systematic training methods like sprint drills, interval training, resistance exercises, and technique development.

Quick Tip

Speed training basics: Short sprints + Full recovery + Explosive drills = Faster performance.
