MARKING SCHEME
SAMPLE PAPER (2026-27)
CLASS: XII
PHYSICAL EDUCATION (153)

Time Allowed: 3 hours **Maximum Marks: 70**

General Instructions:

1. All the Examiners should read the "MARKING SCHEME" carefully.

2. The MARKING SCHEME is a guideline. Any relevant and appropriate information pertaining to answer of a question, other than that given in the marking scheme may be marked correct. Students using their own language for explaining concepts be given due weightage.

3. Marks are not normally deducted for spelling errors but if the answers obliterate the right concepts or meaning of concepts is distorted, marks may be deducted accordingly.

1. The question paper consists of 5 sections and 37 Questions.
2. Section A consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
3. Sections B consist of questions 19-24 carrying 2 marks each and are very short answer types and should not exceed 60-90 words. Attempt any 5.
4. Sections C consist of Question 25-30 carrying 3 marks each and are short answer types and should not exceed 100-150 words. Attempt any 5.
5. Sections D consist of Question 31-33 carrying 4 marks each and are case studies.
6. Section E consists of Question 34-37 carrying 5 marks each and are short answer types and should not exceed 200-300 words. Attempt any 3.

4. Marks are not to be deducted if answers are not written according to the sequence given in the question paper.
5. Marks are not to be deducted for exceeding the word limit.
6. All the Examiners are instructed that while evaluating the answer, if the answer is found to be totally incorrect, (x) should be marked on the incorrect answer and awarded '0' marks.
7. If the question number is found to be incorrect and examiner is able to identify the question number correctly. Number to the answer should be awarded and also correcting the question number.
8. If the answer to the question is repeated answer obtaining higher marks should be awarded.

Wish you good luck

SECTION – A

1. B) Intrinsic Motivation **(9/321)**

2. (C) To increase fat intake immediately after exercise **(6/194)**

3. D. Matsyasana **(3/77)**

Visually impaired - (D) Lying on stomach with palms near shoulders and lifting the chest upward **(3/89)**

4. (B) (iv) (iii) (i) (ii) **(9/336)**

5. B) Sliding friction **(8/290)**

6. (A) Both A and R are true, and R is the correct explanation of A **(5/167)**

7. (C) Increase the budget unnecessarily **(1/02)**

8. B) 6 inches **(6/205)**

9. (A) (a) – (iii), (b) – (iv), (c) – (ii), (d) – (i) **(7/228)**

10. (C) Law of acceleration **(8/270)**

11. D. Diabetes **(5/99)**

12. (D) Acute arthritis **(4/131)**

13. (C) Logistics Committee **(1/07)**

14. (B) Better cardiovascular health and muscle strength **(2/55)**

15. (B) The ability to maintain top speed for a certain duration **(10/381)**

16. C) Widening the base of support **(8/283)**

17. (B) At least 150–300 minutes per week **(2/42)**

18. (A) Both A and R are true, and R is the correct explanation of A **(4/149)**

SECTION – B

19. A lever is a rigid bar that rotates around a fixed point called the fulcrum and is used to transmit force to move a load. In the human body, bones act as levers, joints as fulcrums, and muscles provide the effort. **(8/277)**

The three main parts of a lever are:

1. **Fulcrum (Pivot):** The fixed point around which the lever turns.
2. **Effort (Force):** The force applied to move the load.
3. **Load (Resistance):** The weight or resistance that has to be moved.

20. (a) Self-Esteem: Self-esteem is a person's evaluation of themselves, involving self-belief, respect, and confidence. Esteem from others also motivates performance. High self-esteem is linked to positive body image, accomplishments, and mental health, while low self-esteem can cause depressive symptoms. **(9/342)**

(b) Mental Imagery: Mental imagery is using the senses to create or recreate experiences in the mind. It helps athletes learn techniques, focus, relax, and reduce anxiety. It can be internal (from one's own perspective) or external (viewing oneself from outside), and improves with practice.

21. Need and importance of inclusive education: **(4/145)**

1. Builds Self-Esteem: Inclusive classrooms help students with disabilities gain confidence, reduce stigma, and develop friendships by learning alongside others.

2. Improves Social and Communication Skills: It allows all students to interact, observe, and learn social behaviors through shared classroom experiences, promoting better understanding and cooperation.

3. Enhances Sensitivity: Inclusive education develops empathy, patience, and caring behaviour among students.

4. Better Understanding of Others: Students learn to respect and appreciate individual differences and abilities.

22. Perfect 👍 You're using the **correct CBSE-prescribed formula** for the Harvard Step Test Fitness Index: **(6/203)**

$$\text{Fitness Index (F.I.)} = \frac{\text{Duration of Exercise in seconds} \times 100}{5.5 \times \text{Pulse count (1–1.5 min after exercise)}}$$

Duration = 5 minutes = **300 seconds,** Pulse count = **70**

$$\text{F.I.} = \frac{300 \times 100}{5.5 \times 70};$$

$$\frac{30000}{385} = 77.92$$

Fitness Index Score = 77.9 (approx.)

23. Food intolerance affects an individual's diet and performance by limiting the variety of foods they can safely consume. Due to difficulty in digesting certain foods like dairy, gluten, or beans, individuals may suffer from symptoms such as stomach-ache, bloating, nausea, or diarrhoea. These digestive issues can lead to poor nutrient absorption, low energy levels, and discomfort, ultimately reducing physical performance, endurance, and concentration during daily activities or sports. **(5/186)**

24. For Flat Foot: **(2/45)**

1. Walking, standing or jumping on toes and heels in all four directions.
2. Picking up marbles or writing numbers in the sand with the toes to strengthen foot muscles and develop the arch.

For Knock Knee:

1. Practicing Yoga Asanas like *Vajrasana* and *Adhomukhasvanasana* to improve leg alignment.
2. Performing therapeutic leg massages and strengthening exercises to correct knee positioning.

SECTION – C

25. Three Short-Term Changes on the Muscular System: **(7/240)**

Increased Blood Supply: During exercise, muscles require more oxygen and nutrients. To meet this demand, blood circulation increases and more blood reaches the active muscle groups, helping them work efficiently.

Increased Muscle Temperature: Continuous muscle contractions during exercise generate heat energy. This raises the temperature of the muscles and the body, allowing muscles to perform activities more effectively.

Increased Muscle Flexibility: An increase in blood flow and muscle temperature improves the elasticity of muscles. Stretching and mobility exercises further enhance flexibility and make movement easier.

26. Differentiation Ability: It is the ability to make precise movements using minimal effort, controlling the force, speed, and direction of body parts. **(10/392)**

- Importance in Sports: Helps athletes perform skills with accuracy and efficiency.
- Example: A gymnast adjusting the angle of a handstand or a basketball player controlling the strength of a pass.

Coupling Ability: It is the ability to coordinate two or more movements in sequence to achieve smooth and effective performance.

- Importance in Sports: Ensures movements are well-timed and synchronized for better skill execution.
- Example: A long jumper coordinating the run-up with the take-off or a swimmer coordinating arm strokes with breathing.

27. Source and functions of three fat-soluble vitamins: (5/173)

1. Vitamin A: Source: Carrot, spinach, milk, egg yolk
Functions: Maintains healthy vision, improves immunity, and supports skin health.
2. Vitamin D: Source: Sunlight, milk, egg yolk, fish oil
Functions: Helps in absorption of calcium and phosphorus and strengthens bones and teeth.
3. Vitamin E: Source: Nuts, seeds, vegetable oils, green leafy vegetables
Functions: Acts as an antioxidant and protects body cells from damage.

28. Differences between Intramural and Extramural tournaments: **(1/24)**

Basis	**Intramural Tournament**	**Extramural Tournament**
Meaning	Competitions conducted within the same institution or school.	Competitions conducted between different schools or institutions.
Participants	Students of the same institution participate.	Teams from different institutions participate.
Objective	To encourage mass participation and recreation.	To achieve higher performance and competitive excellence.
Level of Competition	Lower and friendly level of competition.	Higher and more competitive level.

29. Compare and contrast the introvert and extrovert types of personality. **(9/312)**

Basis	**Introvert**	**Extrovert**
Social Interaction	Prefers solitude, enjoys spending time alone or in small groups	Enjoys socializing, thrives in large groups and social activities
Energy Source	Gains energy from being alone or in quiet settings	Gains energy from interacting with others and external stimulation
Behavior	Reserved, reflective, cautious in expressing thoughts	Outgoing, talkative, expressive, and spontaneous
Focus	Focuses on internal thoughts and feelings	Focuses on external environment and social interactions

30. Eating Disorder: Skipping meals or restricting food intake leads to insufficient energy for the body's needs, affecting overall health and performance. **(2/64)**

Amenorrhea: Irregular or absent menstrual periods occur due to hormonal imbalances caused by low energy and low body fat.

Osteoporosis: Insufficient nutrition and hormonal changes weaken bones, increasing the risk of fractures and low bone mineral density.

SECTION – D

31. (i) (B) Knock-out tournament **(1/11)**

(ii) (D) 20

(iii) (B) 11

(iv) (C) Economical and time-saving

32. (i) (A) Spirit in Motion **(4/127)**

(ii) (B) Agitos

(iii) (D) Stoke Mandeville Games

(iv) (B) International Paralympic Committee (IPC)

(For visually impaired candidates only)

(i) (D) Deaflympics **(4/136)**

(ii) (B) To ensure fair participation of hearing-impaired athletes

(iii) (C) International Committee of Sports for the Deaf

(iv) (A) Recognition of abilities and promotion of social inclusion

33. (i) (B) Pulmonary diffusion **(7/243)**

(ii) (D) Increased residual volume

(iii) (C) Increased respiratory rate

(iv) (B) Decreased resting heart rate

SECTION – E

34. To improve his flexibility, two effective methods can be used: the Ballistic Method and Proprioceptive Neuromuscular Facilitation (PNF). **(10/388)**

1. Ballistic Method:

- This method involves **rhythmic swinging movements** to stretch muscles using the body's momentum.
- **Purpose:** Extends the range of motion by moving dynamically in a controlled rhythm.

Caution: While it increases flexibility, it can lead to injury if not performed carefully, so modern therapists often prefer safer alternatives.

2. Proprioceptive Neuromuscular Facilitation (PNF) Technique:

- Also known as **post-isometric stretch**, this technique involves contracting the muscle maximally for 5–7 seconds, followed by a gradual stretch held for 8–10 seconds.
- This process is repeated 4–8 times for each muscle group.
- **Purpose:** The muscle gains maximum relaxation after contraction, allowing a greater range of motion and improved flexibility.

35. In a **javelin throw**, a higher release angle does not always guarantee a longer distance because the flight of the javelin is affected by multiple factors. Five important factors are: **(8/298)**

1. **Gravity:** Gravity pulls the javelin downward, giving it a parabolic trajectory. Heavier javelins are less affected, but gravity always limits the distance.
2. **Air Resistance:** The javelin experiences drag as it moves through the air. Factors like its surface area, shape, and speed influence how much air resistance slows it down.
3. **Speed of Release:** The faster the javelin is thrown, the farther it will travel. Muscle strength and technique largely determine the release speed.
4. **Angle of Release:** Although an optimal angle exists (usually less than 45° for javelin), too high or too low an angle can reduce distance because the horizontal component of motion decreases.
5. **Height of Release:** Releasing the javelin from a higher point above the ground increases horizontal distance, as it has more time in the air before hitting the ground.

36. Suggested Asana: Bhujangasana (Cobra Pose) (3/116)

Procedure:

1. Lie flat on the stomach with legs extended and tops of the feet resting on the floor.
2. Place palms under the shoulders and keep elbows close to the body.
3. Inhale deeply and gently lift the chest off the ground, using the back muscles while keeping the pelvis on the floor.
4. Hold the pose for a few breaths, then exhale and slowly lower the chest back to the floor.

Benefits:

- Strengthens the muscles of the lower back.
- Increases flexibility of the spine.
- Relieves stiffness and mild back pain caused by prolonged sitting.
- Improves posture and stimulates abdominal organs.

Ardha Chakrasana (Half Wheel Pose)

Meaning: Ardha = Half, Chakra = Wheel, Asana = Pose

Ardha Chakrasana means Half Wheel Pose. It is an easier form of Chakrasana.

Technique:

- Stand straight with feet together.
- Clasp both hands together.
- Raise arms above the shoulders/head.
- Slowly bend the upper body backward as much as possible.
- Hold the position comfortably for a few seconds.
- Return slowly to standing position.
- Variation: Hands can also be placed behind the hips while bending backward.

Benefits

- Strengthens back and abdominal muscles.
- Improves digestion and stimulates abdominal organs.
- Helps in correcting posture and reducing back problems.
- Expands the chest and strengthens shoulders and arms.
- Prepares beginners for full wheel pose (Chakrasana).

37. SAI Khelo India Fitness Test for 9–18 Years Old Students (6/208)

1. Cardiovascular Endurance Test – 600 Metre Run/Walk

- **Purpose:** To assess cardiovascular fitness and endurance.
- **Equipment/Infrastructure Required:** Stopwatch, whistle, marker cones, lime powder, measuring tape, and a 200 or 400 m track (minimum 1 m width) on a flat surface with clearly marked start and finish lines.
- **Procedure:** Participants run 600 metres at the fastest possible pace. Walking is allowed, but the goal is to cover the distance in the shortest time. The test begins on the signal "Ready, Start," and elapsed time is recorded as each participant crosses the finish line.
- **Scoring:** Time taken to complete the 600 m run/walk is recorded in minutes and seconds; shorter times indicate better cardiovascular endurance.

2. Speed Test – 50 Metre Dash (Standing Start)

- **Purpose:** To determine acceleration and speed.
- **Equipment/Infrastructure Required:** Measuring tape or marked track, stopwatch, cone markers, and a flat, clear surface of at least 60 metres.
- **Procedure:** After a proper warm-up and practice starts, participants start from a stationary position with one foot in front of the other behind the starting line. The tester may provide hints for maximizing speed, such as keeping low and driving hard with arms and legs. Participants sprint through the finish line as fast as possible.
- **Scoring:** Time taken to complete the 50 metres is recorded in seconds; lower times indicate higher speed.