

PHYSICAL EDUCATION (048)

Sample Paper

Class XII (2024-25)

TIME ALLOWED: 3 HRS

MAX. MARKS: 70

GENERAL INSTRUCTIONS:

- 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. There is internal choice available.
- 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.

(SECTION -A)

- Q1. How many total matches will be played in a knock out fixture of 19 teams 1
A. 18 B. 17 C. 20 D. 16
- Q2. Given below are the two statements labeled Assertion (A) and Reason (R). Read 1
the statements and choose the appropriate option from the options given below:
Assertion: The knock out tournament is an elimination tournament
Reason: In knock out tournament, winner of each match advances in the tournament and the loser gets eliminated.
In the context of the above two statements, which one of the following is correct?
A. Both (A) and (R) are true and (R) is the correct explanation of (A).
B. Both (A) and (R) are true, but (R) is not the correct explanation of (A).
C. (A) is true, but (R) is false.
D. (A) is false, but (R) is true

Q3. Match the following: 1

List I	List II
I Knock Knee	1 Increase exaggeration of backward curve
II Kyphosis	2 Wide gap between the knees when standing with feet together
III Lordosis	3 Knees touch each other in normal standing position
IV Bow legs	4 Inward curvature of the spine

- A. I-3, II-1, III-4, IV-2
- B. I-1, II-3, III-4, IV-2
- C. I-4, II-2, III-1, IV-3
- D. I-2, II-3, III-4, IV-1

Q4. For developing muscles, which nutrient should be increase in diet

- A. Vitamins
- B. Protein
- C. Minerals
- D. Carbohydrates

Q5. Identify the asana:

1



- A. Paschimottanasana
- B. Halasana
- C. Vajrasana
- D. Dhanurasana

Q6. Which asana is pose like cobra?

1

- A. Bhujangasana
- B. Dhanurasana
- C. Vajrasana
- D. Ardhamatsyendrasana

Q7. Deaflympics Games was first organized in the year.....

1

- A. 1896
- B. 1960
- C. 1924
- D. 1951

Q8. Menarche is defined as the:

1

- A. Ending of menstrual period of women
- B. Beginning of menstrual period in women
- C. Time of pregnancy
- D. Missing of menstrual cycle

Q9. Which of the following are fat soluble vitamins

1

- A. Vitamin d & k
- B. Vitamin b & c
- C. Vitamin a & e
- D. Both option a & c

Q10. Match the following: 1

I Plate Tapping Test	1. Upper body strength boys
II Push up	2. Reaction time
III Partial Curl up	3. Upper body strength girls
IV Modified pushup	4. Abdominal strength

- A. I-2, II-1, III-4, IV-3
- B. I-2, II-3, III-1, IV-4
- C. I-1, II-3, III-2, IV-4
- D. I-2, II-3, III-4, IV-1

Q11. Which of the following is a physiological factor determining flexibility? 1

- A. Bone density
- B. Joint structure
- C. Cardiac output
- D. Tidal Volume

Q12. The ability to tolerate higher concentration of Can help in improving 1
endurance performance.

- A. Lactic acid
- B. Hydrochloric acid
- C. acetic acid
- D. Sulphuric acid

Q13. If a ball is hit and it is stop by gravitational force, this is an example of which 1
law of Motion.

- A. Law of Inertia
- B. Law of acceleration
- C. Law of action and reaction
- D. Both a & b

Q14. In which of the following sport friction plays the least important role. 1

- A. Car race
- B. Football
- C. Ice skating
- D. Hockey

Q15. Instrumental aggression is related to 1

- A. Accepting defeat
- B. Achieving goal
- C. Only performance
- D. Hurting someone to gain something

Q16. Given below are the two statements labeled Assertion (A) and Reason (R). 1

Assertion: Aggression is part of human behavior and is necessary for an individual to
live and struggle for higher achievements

Reason: Aggression is inevitable and inseparable in sport activities

In the context of the above two statements, which one of the following is correct?

- A. Both (A) and (R) are true and (R) is the correct explanation of (A).

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

Q17. Which of these is a type of endurance? 1
 A. Static C. Dynamic
 B. Specific D. Relative

Q18. Which type of coordinative ability is required in game like judo and wrestling 1
 B. Orientation ability
 C. Coupling ability
 D. Adaptation ability
 E. Differentiation ability

(SECTION B- Attempt any 5)

Q19. Enlist any two-exercise guideline by WHO for different age groups. 2
 Q20. How we can say that protein is an essential component of diet? 2
 Q21. Mention the test performed on 9 to 18 yrs. of age group in SAI Khelo
 India fitness test and explain any one? 1+1
 Q22. List down the types of bone injuries 2
 Q23. What do you understand by the term goal setting 2
 Q24. Define Flexibility and list down its type. 1+1

(SECTION C- Attempt any 5)

Q25. Specify the purpose of specific sports programme organised for community services. 3
 Q26. What are the health problem face by a woman due to female athlete triad in its sports and athletic performance. 3
 Q27. Write in detail the aims and objectives of special Olympic Bharat. 3
 Q28. Differentiate between nutritive and nonnutritive components of a diet on the basis of their functions. 1.5+1.5
 Q29. With the help of suitable sports example explain the application of Newtons third law in sports. 3
 Q30. How we can enhance the performance with the help of self-talk and self-esteem. 1.5+1.5

(SECTION D)



Q31.

- I. Choose the function of boarding committee 1
- A. To take teams to the venue of match
 - B. To provide them meals
 - C. To take care of their stay
 - D. To arrange opening ceremony
- II. What is the work of ceremony committee 1
- A. To take teams to the venue of match
 - B. To provide them meals
 - C. To take care of their stay
 - D. To arrange opening ceremony
- III. Ground and equipment committee should not perform 1
- A. To arrange teams match venues
 - B. To provide them meals
 - C. To take care of proper officiating
 - D. To make fixtures
- IV. Why committees are required?
- A. To organize the event in perfect manner
 - B. To distribute the work
 - C. To make the best use of resources
 - D. All of the above
- 1

(Questions for Visually impaired)

Ram is a secretary of state basketball association. He has given the responsibility to organize a sub-junior national tournament. He wants to organize the event at large scale and start distributing the work in various committees. He delegates the duties to different individuals with authority and responsibility.

(Answer the following questions on the basis of above paragraph)

- I. Which committee is responsible to make the event awareness: -
- A. Publicity Committee
 - B. Hospitality
 - C. Registration committee
 - D. Transports

II. is the process of identifying and grouping the work to be performed.

- A. Planning
- B. Directing
- C. Organising
- D. Controlling

III. The reception committee for the tournament is responsible for _____

- A. Welcoming the participants
- B. Arranging accommodation and meals for the participants
- C. Proper upkeep of the venues
- D. Welcoming the chief guest and spectators at the opening and closing ceremony

IV. If the responsibility of a committee is to fix venue, date and timing of the sports events, it is a _____

- A. Post meeting committee
- B. Pre meet committee
- C. During meet committee
- D. All the above



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Q32.

I. The first paralympics was organise in

- A. 1960
- B. 1970
- C. 1965
- D. 1985

II. Special education is a branch of education that deals with

- A. . Educating children in special schools
- B. Instructions designing for students with special needs
- C. To provide opportunity of special education
- D. More than one of the above

III. Why is it called the Paralympics?

- A. The first competition was held in Paraguay
- B. It was originally for paramilitary soldiers injured in WW2
- C. The event runs parallel with the Olympics
- D. It's an event for paraplegics

IV. What is the motto of the Paralympic Games

- A. Spirit in motion
- B. Citius, Altius, Fortius"
- C. "Faster, Higher, Stronger
- D. Diversity, Equality, Inclusion"

(Question for Visually Impaired)

Read the paragraph and answer the following question

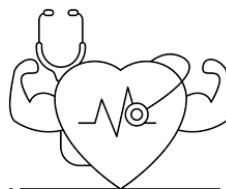
The Paralympic Games are a major international multi-sport event involving athletes with a range of physical disabilities, including impaired muscle power, impaired passive range of movement, limb deficiency, leg length difference, short stature, hypertonia, ataxia, athetosis, vision impairment, and intellectual impairment.

Dr. Ludwig Guttmann known as father of paralympic organized the first official Paralympic Games in Rome featuring 400 athletes from 23 countries.

The Paralympics have grown significantly over the years, now attracting thousands of athletes from over 100 countries. The Paralympic movement has played a vital role in challenging societal perceptions of disability and in promoting the rights and inclusion of people with disabilities worldwide

- I. What is the primary focus of the Paralympic Games?
 - A. To promote physical fitness among children
 - B. To involve athletes with a range of physical disabilities in competitive sports
 - C. To honor the history of the Olympic Games
 - D. To raise funds for sports organizations
- II. Who organized the first event that eventually led to the creation of the Paralympic Games?
 - A. Pierre de Coubertin
 - B. Dr. Ludwig Guttmann
 - C. Lord Zeus
 - D. Norabji Tata
- III. In which year were the first official Paralympic Games held?
 - A. 1948
 - B. 1952
 - C. 1960
 - D. 1964
- IV. Where were the first official Paralympic Games held?
 - A. Tokyo, Japan
 - B. London, United Kingdom
 - C. Rome, Italy
 - D. Sydney, Australia

Q33.



- I. What is the primary effect of exercise on cardio respiratory system.
 - A. Decreased heart rate
 - B. Increased stroke volume

1

- C. Decreased lung capacity
- D. Decreased blood pressure

II. What is stroke volume 1

- A. The volume of blood ejected by the heart per minute
- B. The volume of blood ejected by the heart per beat
- C. The volume of blood in the ventricles at the end of diastole
- D. The volume of blood pumped by the heart during exercise

III. Cardiac output is 1

- A. The volume of blood ejected by the heart per minute
- B. The volume of blood ejected by the heart per beat
- C. The volume of blood in the ventricles at the end of diastole
- D. The volume of blood pumped by the heart during exercise

IV. Blood pressure is 1

- A. The volume of blood ejected by the heart per minute
- B. The force exerted by blood against the walls of arteries
- C. The rate of blood flow through the veins
- D. The amount of oxygen carried by red blood cells

(Question for blind)

Ramesh is an athlete of XYZ school. He is use to do 100m event for his school. He used to do hard work throughout the year to get his best performance. One day he got injury in winter season due to improper warming-up. He has been given first -aid before sent to hospital.

I. Sprain is an injury of

- | | |
|-------------|----------|
| A. Ligament | C. Bone |
| B. Muscle | D. Joint |

II. In PRICE treatment I stands for

- | | |
|------------|---------------|
| A. Iceing | C. Incision |
| B. Incline | D. Irritation |

III. Abrasion is a

- | | |
|----------------------|-----------------------|
| A. Type of fracture | C. Soft tissue injury |
| B. Joint dislocation | D. Internal injury |

IV. Why warming up is necessary

- | | |
|---------------------------|---------------------------------|
| A. To avoid injuries | C. To increase body temperature |
| B. To increase pulse rate | D. All the above |

(SECTION E- Attempt any 3)

Q34. List down any four asanas used for prevention of Hypertension. Explain the procedure, benefits and contraindicate of any one of them with help of a stick diagram. 1+4

Q35. Discuss the purpose of Rikli & Jones fitness test and explain procedure of any two test batteries in detail. 5

Q36. Define strength and differentiate between Isometric, Iso-tonic and Iso-kinetic exercises. 1+4

Q37. What are the various types of friction? With the help of suitable example explain why friction is necessary in sports. 2+3

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Q No.	Answer	Marks
1.	A. 18	1
2.	A. Both (A) and (R) are true and (R) is the correct explanation of (A).	1
3	A. I-3, II-1, III-4, IV-2	1
4	B. Protein	1
5	B. Halasana	1
6	A. Bhujangasana	1
7	C. 1924	1
8	B. Beginning of menstrual period in women	1
9	D. both a and c	
10	A. I-2, II-1, III-4, IV-3	1
11	B. Joint structure	1
12	A. Lactic acid	1
13	A law of Inertia	1
14	A. Ice Skating	
15	A. Achieving goal	1
16	A. Both (A) and (R) are true and (R) is the correct explanation of (A).	1
17	A. specific	1
18	A. Adaptation ability	1
	Section B	
19	Q. Enlist different types of postural deformities. a. Kyphosis b. Lordosis c. Scoliosis	$\frac{1}{2} \times 4 = 2$

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	d. Knock-Knee e. Flat Foot f. Bow legs (any four)	
Q20	How we can say that protein is an essential component of diet? Protein is essential component of diet because protein is known as building block of life and it increase the strength of muscle fibers, repair and maintenance of body tissue and also connected with immune mechanism of the body.	2
Q21	Mention the test performed on 9 to 18 yrs. of age group in SAI KheloIndia fitness test & explain any one? - Body Composition (BMI) - Strength - Abdominal (Partial Curl-up) - Muscular Endurance (Push Ups for Boys, Modified Push Ups for Girls) - Flexibility (Sit and Reach Test) - Cardiovascular Endurance (600 Meter Run/Walk) - Speed (50 mt. Dash)	$\frac{1}{2}$ *4 =2
Q22	Q. List down the types of bone injuries - Stress fracture - Green stick fracture - Comminuted fracture. - Transverse Fracture - Impacted fractures	$\frac{1}{2}$ *4 =2
Q23.	What do you understand by the term goal setting? A. Goal setting is one of the best motivational strategies. It improves performance by directing attention, increasing effort and persistenc. These goals can be short-term or long-term and are designed to help athletes focus their efforts, stay motivated, track progress, and ultimately improve their performance.	2
Q24.	Define Flexibility and list down its type.	

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	A. It is the ability which helps to do the movements with greater amplitude or with a great range of motion or we can say that flexibility refers to the range of movement in a joint or series of joints, and length in muscles that cross the joints to induce a bending movement or motion. Type of Flexibility a. active & passive	1+1
	Section C	
Q25	Specify the purpose of specific sports programme organised for community services. A. These days it is very common that specific sports programmes are organised to make people aware regarding particular cause or any particular issue. These programmes are not related to competitions only, but it has special reason. They create awareness related to a disease like AIDS, Swine Flu, collecting funds for special cause like flood, earth quakes etc.	3
Q26	What are the health problem face by a woman due to female athlete triad in its sports and athletic performance. A. The female athlete triad is a problem face by a women consist of Eating Disorder, Osteoporosis and Amenorrhea. The following problem are faced by a woman due to the female athlete triad in sports performance: - a. Increased risk of injury b. Feeling tired c. Shortness of breath d. Stomach inflammation e. Muscle weakness f. Weak bones g. Hormonal imbalance h. Psychological effects.	$\frac{1}{2} \times 6 = 3$
Q27.	Write in detail the aims and objectives of paralympic committee A. The Paralympic games are a multi – sports event for athletes with physical, mental and sensorial disabilities. This includes mobility, disabilities, amputees, visual disabilities. The main objective of Paralympics are as follows: -	3

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	a. Promote Para sport worldwide, without unlawful discrimination on the grounds of disability, race, skin colour, national, ethnic or social origin, age, sex, gender, sexual orientation, language, political or other opinion, religion or other beliefs, circumstances of birth, or other unlawful ground. b. Support and encourage educational and cultural activities and exchanges that contribute to the development and promotion of the Paralympic Movement, enhance awareness of disability, and drive social inclusion.													
Q28.	<table><tr><td colspan="2">Differentiate between nutritive and nonnutritive components of a diet o</td></tr><tr><td>Nutritive Component</td><td>Non- Nutritive Component</td></tr><tr><td>Nutritive components of food are those elements that provide a considerable quantity of energy to the system, such as protein, carbohydrates, and fats, all of which are essential to the body.</td><td>Non-nutritive components of the diet are those components that do not have any nutritional value but are nonetheless necessary for the body in tiny quantities.</td></tr><tr><td>Provide Energy</td><td>Provide flavour and texture</td></tr><tr><td>Support growth and repair</td><td>Acts as food additive</td></tr><tr><td>Regulate metabolism</td><td>Provide antioxidant</td></tr></table>	Differentiate between nutritive and nonnutritive components of a diet o		Nutritive Component	Non- Nutritive Component	Nutritive components of food are those elements that provide a considerable quantity of energy to the system, such as protein, carbohydrates, and fats, all of which are essential to the body.	Non-nutritive components of the diet are those components that do not have any nutritional value but are nonetheless necessary for the body in tiny quantities.	Provide Energy	Provide flavour and texture	Support growth and repair	Acts as food additive	Regulate metabolism	Provide antioxidant	1.5+1.5
Differentiate between nutritive and nonnutritive components of a diet o														
Nutritive Component	Non- Nutritive Component													
Nutritive components of food are those elements that provide a considerable quantity of energy to the system, such as protein, carbohydrates, and fats, all of which are essential to the body.	Non-nutritive components of the diet are those components that do not have any nutritional value but are nonetheless necessary for the body in tiny quantities.													
Provide Energy	Provide flavour and texture													
Support growth and repair	Acts as food additive													
Regulate metabolism	Provide antioxidant													
Q29.	With the help of suitable sports example explain the application of Newtons third law in sports. A. Newton's third law states that for every action, there is an equal and opposite reaction. In swimming, Newton's third law is evident in the propulsion generated by a swimmer's arm strokes against the water. When a swimmer pulls their arm through the water with force (action), the water exerts an equal and opposite force backward on the swimmer's hand (reaction). This reaction force propels the swimmer forward through the water.	3												
Q30.	How we can enhance the performance with the help of self-talk and self-esteem. A. Self-talk and self-esteem play significant roles in enhancing sports performance. Motivational self-talks are necessary and productive. It boosts performance by helping you to build confidence, enhance your belief in your ability to perform. It	1.5+1.5												

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	also athletes maintain a positive mindset, enhance their confidence, and improve their performance. Self-esteem is also crucial in sports performance. It helps in taking effective decision, Educated anxiety & stress. Individuals with high self-esteem are better equipped to bounce back from setbacks and failures.	
Q31.	a. To take care of their stay d. To arrange opening ceremony a. To provide them meals Committees are important for proper planning, organization, control during the tournament. Appropriate path and guidelines are provided by these committees during the tournament. Through committees all understand their work duties and responsibilities no body interferes in any others work. (Question for blind) There should be an organizing committee which should be responsible for the successful and smooth conduct of the sports competitions Committees required pre event:- Publicity Committee Committee for the ground and equipment Committee for Accommodation and Sitting Arrangements Committee for Entries Committees required during event:- Committee for First-Aid: Committee for Refreshment Committee for officials: Committee for Information and announcement Committees required post event:- Committee for closing ceremony Evaluation Record Maintenance	1 1 1 1
Q32.	A) i. 1960 B) ii. Instructions designing for students with special needs C) iii The event runs parallel with the Olympics D) i. Spirit in motion (Question for Blind)	1 1 1 1

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	Inclusion in physical education refers to the students with disabilities to participate in all the activities. It means that these students get equal chance to participate in all activities, and they too learn the same curriculum just like other students. It helps in increases social skills of students with disabilities. Inclusion is needed to increase motor skills of students with disabilities. A disabled student gets equal chance to participate in age-appropriate activities so, it increases the confidence level.	
Q33	i. Decreased heart rate ii. The volume of blood ejected by the heart per beat i. The volume of blood ejected by the heart per minute ii. The force exerted by blood against the walls of arteries (Question for Blind) Long term effect of exercise on cardio respiratory system are: Increase in heart size:- Regular exercise leads to increase in size and strength of heart muscles. The heart wall grow stronger and thicker. Stroke volume increases at rest:- Resting heart rate is able to slow down , because the heart is now trained to pump a larger quantity of blood with every beat. Faster recovery rate:- Regular exercise leads to faster recovery rate. An athletes heart rate becomes normal earlier compared to a beginner. Rate of respiration also becomes normal quickly. Thus the recovery becomes fast. Short Term effect Short Term / Immediate Effect Increase in heart rate:- On of the short term effect is increase in heart rate, when we doing exercise the heart rate will continue to rise from its normal beat in direct proportion to the intensity of exercise until maximum heart rate is achieved. Cardiac Output:- It is the amount of blood the heart pumps in a period of one minute. It also increase during strenuous exercise. Blood Pressure:- The pressure exerted by blood on the wall of heart, The upper range is called systolic and bottom range is called diastolic. Regular exercise also have effect on our blood pressure, generally there is change in systolic pressure but the diastolic pressure usually remains unchanged during intensive exercise	1 1 1 1
	Section E	
Q34.	List down any four asanas used for prevention of Hypertension. Explain the procedure, benefits and contraindicate of any one of them with help of a stick diagram. A. Blood pressure is the force of your blood pushing against the walls of your arteries. Each time your heart beats, it pumps blood into the arteries. The four asana used for the prevention of hypertension are as follows:- • Tadasana, • Katichakransan,	2+3

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- Uttanpadasana,
- Ardha Halasana

Procedure benefit and contraindication of Tadasana:

Tadasana

The word Tada in Sanskrit means 'palm tree'. This asana is called tadasana because in this asana the person stands straight like a palm tree stretching his whole body upwards.

Procedure:

To perform Tadasana the following steps should be performed:

1. Stand erect, feet together, hands by the side of the thighs. Keep the back straight and look in front.
2. Stretch the arms upward; keep them straight and parallel to each other in vertical position, with the palms facing each other.
3. Slowly, raise the heels as much as you can and stand on toes. Stretch body up as much as possible.
4. Maintain the position for 5-10 seconds comfortably.
5. To come back, bring the heels on the floor first. Slowly bring down the hands by side of the thighs and relax.

Benefits:

1. It gives stretch to whole body muscles.
2. It helps in strengthening thighs, knees and ankles.
3. By doing this asana regularly, children can increase their height.
4. It helps to remove laziness and lethargy.

Precautions

1. The inner upper arms should touch the respective ears.
2. Stretch the arms and fingers in full capacity.
3. Keep the head, neck and the body in one straight line.
4. Avoid bending forward or backward.

Contraindications

1. Those having complaints of vertigo should avoid practicing this asana.

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Q35.	Discuss the purpose of Rikli & Jones fitness test and explain procedure of any two test batteries in detail. A. Even in old age, everybody wants to be able to continue to do what he wants, without pain, for as long as possible. It requires proper fitness during such age. In the beginning, there were not enough tests to assess the functional fitness. Recognizing the need for a tool to evaluate the functional fitness performance of older adults, Dr. Roberta Rikli and Dr. Jessie Jones developed the senior fitness test at Fullerton University. This test is also known as Fullerton Functional Test of senior citizens. The test is based on a functional fitness framework, which points out that being able to perform everyday activities. 1. Chair stand test for lower body 1. Lower body strength, leg strength & strength Endurance 2. Arm curl test for upper body 2. The upper body strength, arm flexor, strength, strength & endurance 3. Chair sit & reach test for lower 3. The lower back flexibility body flexibility 4. Back-scratch test for upper body 4. The upper body flexibility of the body flexibility & range of motion of the shoulders. 5. Eight foot up & Go test for agility 5. The motor agility, speed & balance 6. Six minute walk test for 6. Cardio-vascular endurance & recovery Chair Stand Test for Lower Body Strength Purpose: The purpose of the Chair-Stand is to measure the strength of lower body of adults over 60 years of age. Lower body strength is important for activities such as getting out of a chair, on the bus, out of the car, and rising up from a kneeling position in the house or garden. The strength of your lower body can directly affect the ease with which you perform the activities you do every day. Equipment required: A straight back or folding chair without arm rests (seat 17 inches/44 cm high), stopwatch. Procedure: 1) Place the chair against a wall where it will be stable.	2+3
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	2) Sit in the middle of the chair with your feet flat on the floor, shoulder width apart, back straight. 3) Cross your arms at the wrist and place them close to the chest. 4) On the command 'go' you will rise up to a full stand and sit again as many times as you can during the 30 second interval. 5) Count the total number of complete chair stands (up and down equals one stand). If the subject has completed a full stand from the sitting position when the time is elapsed, the final stand is counted in the total. Scoring: The score is the number of completed chair stands in 30 seconds. Below is a table showing the recommended ranges for this test based on age groups. Arm Curl (Bicep) Test for Upper Body Strength Purpose: This test measures upper body strength and endurance. Equipment required: 5-pound weight (women), 8-pound weight (for men). A chair without arm rests, stopwatch. Procedure: 1) The subject sits on the chair holding the weight in the hand using a suitcase grip (palm facing towards the body). 2) This test is conducted on the dominant arm side (or stronger side). 3) On the command 'go' do as many curls as you can in the allotted 30 second time period. 4) Do not swing the weight. 5) If you have started raising the weight again and are over halfway up when time is called, you may count that curl. Scoring: The score is the total number of controlled arm curls performed in 30 seconds. Below is a table showing some recommended ranges for this test based on age groups.	
Q36.	Define strength and differentiate between Isometric, Iso-tonic and Iso-kinetic exercises.	

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Strength is the ability of muscles to overcome the resistance. Strength is necessary for the performance of physical activities, whether it is a physical activity associated with daily living.

Barrow and McGee have defined “Strength as, ‘The Capacity of the whole body or any of it’s parts to exert force.’

1+4

Isometric Exercises	Isotonic Exercises
(i) Movements of exercising body parts or object are not visible to third person.	(i) Movements of exercising body parts are visible to third person.
(ii) Length of exercising muscles doesn't change.	(ii) Length of exercising muscles change.
(iii) Less muscular endurance is developed.	(iii) More muscular endurance is developed.
(iv) These exercises can be performed at any place.	(iv) These require specific place.
(v) These develop strength at one place.	(v) These develop uniform strength.
(vi) Isometric exercises develop strength and less flexibility.	(vi) Isotonic exercises develop strength along with flexibility.
(vii) Isometric exercises create boredom.	(vii) Isotonic exercises are interesting because they are self testing.
(viii) Recovery from muscular fatigue is slow.	(viii) Recovery from muscular fatigue is faster.
(ix) e.g. Exercise by pushing a wall.	(ix) e.g. Exercise with light weights.

Isokinetic Exercises
(i) This involves movement but maintains a constant speed.
(ii) Isokinetic generally involves muscle contraction against an electronic resistance and is specific to a particular sport.
(iii) It develops explosive strength as well as strength endurance.
(iv) Iso-same, kinetic-speed. Isokinetic exercises are done with machine that regulates movement, velocity and resistance.
(v) Excellent development of power.
(vi) Better development of speed as compared to Isotonic.
(vii) Examples are
(a) Running on Treadmill with prefixed speed of steps,
(b) Bicycling with a set of fixed number of revolutions per minute etc.

PHYSICAL EDUCATION (048)

Class XII

2024-25

Answer Key

TIME ALLOWED: 3 HRS

MAX. MARKS: 70

Q37	What are the various types of friction? With the help of suitable example explain why friction is necessary in sports A. Friction is a force which oppose efforts to slide or roll one body over another. Without friction it would be impossible to walk or run but on the other hand it increases the difficulty of moving. The amount of friction between one surface and another depends upon the nature of the surface and forces pressing them together generally speaking smooth surface have less friction than rough. Types of Friction:- • Static Friction:- is the opposing force which acts between two surface in which one tends to move over the other • Dynamic Friction:- which acts between two surfaces in which one is actually moving over the other it may be two types. – Sliding – Rolling Friction is both helpful in sports: Friction is Necessary: Nothing would be able to move without friction. Friction is how things accelerate. Without friction we would not be able to walk we would just be slipping. Without friction we cannot give better performance in sports. Examples: athletes use spikes and footballers use studs to have appropriate friction while they run fast. A Gymnast uses lime powder on his/her palms to perform many activities like horizontal bar uneven bar Roman Rings. In Badminton players are usually seen to rub their sole of shoes with lime before going to the wooden court. It is done to provide better grip on the floor so that one can move safely	2+3
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