CBSE

Solved Paper 2023

Physical Education

Class-12th

(Delhi & Outside Delhi Set)

Time : 3 Hours **Max. Marks : 70**

General Instructions :

(i) *The question paper consists of 5 sections and 37 questions.*

(ii) ***Section A*** *consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.*

(iii) ***Section B*** *consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.*

(iv) ***Section C*** *consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.*

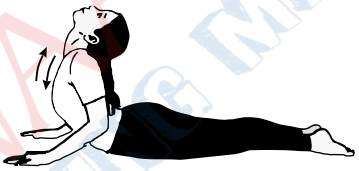
(v) ***Section D*** *consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.*

(vi) ***Section E*** *consists of question 34-37 carrying 5 marks each and are Long Answer types and should not exceed 200-300 words. Attempt any 3.*

SECTION - A

(All Questions are compulsory)

1. Identify the Asana: **1**



(a) Bhujangasana **(b)** Halasana

(c) Vajrasana **(d)** Dhanursana

(Question for Visually Impaired candidates)

_____ pose is like cobra.

(a) Bhujangasana **(b)** Dhanursana

(c) Vajrasana **(d)** Ardhmatsyendrasana

2. Traits like sadness, mood swings and emotional instability are related with _____. **1**

(a) Extroversion **(b)** Agreeableness

(c) Conscientiousness **(d)** Neuroticism

3. Which of the following is NOT the factor affecting projectile trajectory? **1**

(a) Gravity **(b)** Angle of Release

(c) Buoyant Force **(d)** Air Resistance

4. Which of the following factors, does NOT determine flexibility? **1**

(a) Joint Structure **(b)** Previous Injury

(c) Efficiency of Lungs **(d)** Age and Gender

5. Fartlek Training is used to develop _____. **1**

(a) Endurance **(b)** Strength

(c) Flexibility **(d)** Speed

6. Which type of coordinative ability is required in games like judo and wrestling? **1**

(a) Orientation ability **(b)** Coupling ability

(c) Adaptation ability **(d)** Differentiation ability

7. The ability to tolerate higher concentration of _____ can help in improving endurance performance. **1**

(a) Lactic acid **(b)** Hydrochloric acid

(c) Acetic acid **(d)** Sulphuric acid

8. Centre of Gravity is the average location of an object's _____. **1**

(a) Weight **(b)** Force

(c) Resistance **(d)** Velocity

9. Given below are the two statements labelled Assertion **(a)** and Reason (R). **1**

Assertion (A) : Aggression is part of human behaviour and is necessary for an individual to live and struggle for higher achievements.

Reason (R) : 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.

10. Role of water in human body is to _____. **1**

(a) regulate body temperature **(b)** give energy

(c) repair cell **(d)** protect from disease

11. Which of the following are water soluble vitamins? **1**

(a) Vitamin D & K **(b)** Vitamin B & C

(c) Vitamin A & E **(d)** Vitamin A & C

12. Which of the following asana is NOT used to cure Asthma? **1**

(a) Tadasana **(b)** Dhanurasana

(c) Parvatasana **(d)** Bhujangasana

13. How many total matches will be played in a knock-out fixture of 19 teams? **1**

(a) 18 **(b)** 17

(c) 20 **(d)** 16

14. Knock-out tournament is also known as _____. **1**

(a) Elimination tournament **(b)** Round-robin tournament

(c) League tournament **(d)** Challenge tournament

15. First Deaflympic Games was organized in the year _____. **1**

(a) 1896 **(b)** 1960

(c) 1924 **(d)** 1951

16. Match the following: **1**

	List-I		**List - II**
I.	Knock Knee/ Genu Valgum	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

Choose the correct option from the following:

	I	II	III	IV
(a)	3	1	4	2
(b)	1	3	4	2
(c)	4	2	1	3
(d)	2	3	4	1

17. Match the following: **1**

List-I	**List - II**
I. Plate Tapping Test	1. Upper body strength endurance of boys
II. Push-up	2. Speed and coordination of limb movement
III. Partial Curl up	3. Upper body strength endurance of girls
IV. Modified push up	4. Abdominal strength

Choose the correct option from the following:

	I	II	III	IV
(a)	2	1	4	3
(b)	2	3	1	4
(c)	1	3	2	4
(d)	2	3	4	1

18. Menarche is related to: **1**

(a) Ending of menstrual period in women

(b) Beginning of menstrual period in women

(c) Time of pregnancy

(d) Spinal deformity

SECTION - B

(Attempt any 5 questions)

19. Briefly explain any two factors determining endurance. **1+1**

20. What do you understand by "Goal Setting"? **2**

21. Define Flexibility and list down its types. **1+1**

22. Elucidate any four types of fractures. **2**

23. What is BMI? Calculate BMI of a child whose weight is 2 kg and height 1.68 mt. **2**

24. Differentiate between Macro and Micro Nutrients. **2**

SECTION - C

(Attempt any 5 questions)

25. "Participation in physical activities is advantageous for children with special need." Briefly explain any six advantages. **3**

26. Write the functions of Vitamin D and Vitamin K and mention their sources. **1.5 + 1.5**

27. Briefly explain the functions of Directing and Controlling to organize sports event. **1.5 + 1.5**

28. How can we enhance the sports performance with the help of self-talk and self-esteem? Explain. **1.5 + 1.5**

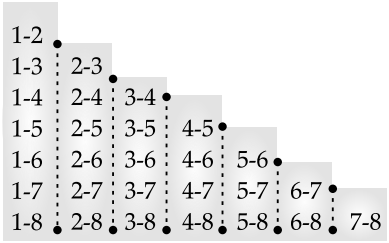
29. Elucidate any six effects of exercise on muscular system. **3**

30. What do you understand by Round shoulders deformity? Suggest any four corrective measures for round shoulders. **1+2**

SECTION - D

(Internal choices available)

31.



On the basis of above fixture, answer the following questions: **4**

(a) Which method is shown in the picture to draw fixture in league tournament?

(b) What is the formula to calculate number of matches?

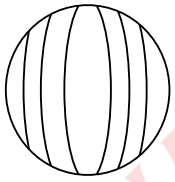
(c) In league or Round Robin Tournament winner will be decided on the basis of _____.

(d) If 7 teams participate in a league Tournament, _____ number of matches will be played.

Explain the responsibilities of any four committees required to organize a sports event.

(For Visually Impaired Candidates)

32. Study the pictures given below:



(A)
Stationary Ball

(B)
Moving Ball

Based on your above study and your knowledge, answer the following questions: **4**

(a) Which law of motion will be applied to initiate motion of the ball as depicted in the illustration **(a)**?

(b) In illustration **(b)** which force is acting upon the ball to slow it down?

(c) Which law of motion will determine the quality of bounce?

(d) _____ of an object directly depends upon the mass of the object and net force applied on it.

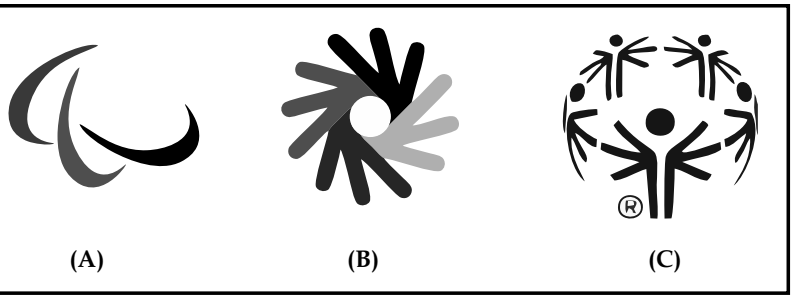
OR

"When a cricket ball is moving with a certain velocity, the player has to apply retarding force to bring the ball at rest in his hands." Which Newton's Law is applied in this illustration?

(For Visually Impaired Candidates)

By giving suitable examples from sports, explain any two Newton's Laws of Motion in detail.

33. In relation to the pictures, answer the following questions: **4**



(A) **(B)** **(C)**

(a) Logo shown in picture _____ refers to Special Olympic.

(b) Who was the founder of Special Olympics?

(c) According to figure 'B', the hand shapes of 'OK', 'Good' and 'Great' that overlap each other in a circle, represent the original sign for _____.

(d) How many countries participated in the first Paralympic Games in Rome (Italy) in 1960?

OR

The moto of Paralympics is _____

(For Visually Impaired Candidates)

Explain any four strategies to make physical activities accessible for children with special needs.

SECTION - E

(Attempt any 3 questions)

34. List down any four asanas used for prevention of Hypertension. Explain the procedure and contraindication of any one of the them with help of a stick diagram. **1+4**

35. What is the purpose of Riklli and Jones fitness test? Explain the procedure of its any two test items in detail. **1+4**

36. Define strength and explain any two methods to develop it. **1+4**

37. What is Friction? Write the advantages and disadvantages of friction by giving suitable examples from sports. **1+4**

■■

Solutions

SECTION - A

1. **Option (a) is correct.**
   Explanation: Bhujanga in Sanskrit means 'Cobra'. In Bhujangasana, one imitates a cobra with its hood fully expanded.
2. **Option (d) is correct.**
   Explanation: Neuroticism is one of the personality traits of the big five theory. Individuals who are high in this trait tend to experience mood swings, anxiety, irritability, and sadness.
3. **Option (c) is correct.**
   Explanation: The Buoyant force is not a factor affecting projectile trajectory as it is an upward force exerted on an object when it is completely or partially immersed in water.
4. **Option (c) is correct.**
   Explanation: Factors determining Flexibility are- Age and Gender, Joint Structure, Previous Injury, Quality of Movement, Activity Level, etc.
5. **Option (a) is correct.**
   Explanation: The Fartlek Training Method was developed by Holmer. It is a form of interval or speed training that is effective in improving endurance.
6. **Option (b) is correct.**
   Explanation: Coupling ability: It is the ability to coordinate body part movements in relation to a definite goal, oriented body movement.
7. **Option (a) is correct.**
   Explanation: It is a vital factor in determining anaerobic capacity. For activities that last for about 40 seconds or more, lactic acid tolerance is important.
8. **Option (a) is correct.**
   Explanation: Centre of gravity is the balance point of the body around which the weight is evenly distributed or balanced.
9. **Option (b) is correct.**
   Explanation: Aggression is an interpersonal behavior that is necessary for an individual to strive for higher achievements. Aggression can have negative or positive effects on performance in a sports activity.
10. **Option (a) is correct.**
    Explanation: Water helps in regulating body temperature, carries nutrients to cells, helps in digestion, normalizes blood pressure, etc.
11. **Option (b) is correct.**
    Explanation: Vitamins A,D,E and K are insoluble in water.
12. **Option (c) is correct.**
    Explanation: Parvatasana
13. **Option (a) is correct.**
    Explanation: The formula for calculating the number of matches is (n – 1)= 19 – 1=18 matches will be played.
14. **Option (a) is correct.**
    Explanation: A competition in which only the winners of each stage play in the next stage, until one competitor or team is the final winner.
15. **Option (c) is correct.**
    Explanation: The Deaflympics were held in Paris in 1924 and were also the first-ever international sporting events for athletes with a disability.
16. **Option (a) is correct.**
    Explanation: Kyphosis is a deformity of the spine in which there is an increase of exaggeration of a backward curve or a decrease of a forward curve whereas Lordosis is an increased forward curve in the lumbar region.
17. **Option (a) is correct.**
18. **Option (b) is correct.**
    Explanation: Menarche is defined as the first menstrual period in a female adolescent that typically occurs between the ages of 10 and 16.

SECTION - B

19. **Factors determining endurance:**
    (a) Oxygen Uptake: It is the highest rate at which oxygen can be taken up and consumed by the heart per minute. The oxygen uptake in the muscle cell depends upon the rate of diffusion.
    (b) Cardiac Output: Cardiac output is the amount of blood pumped by the heart per minute.
20. Goal Setting is a process of setting specific and attainable action plans designed to increase an individual's commitment toward achieving a personal goal. Goal setting helps in optimizing sports performance.
21. Flexibility is the range of movement of joints. Flexibility can be defined as the ability to execute movement with greater amplitude or range. There are two types of flexibility:
    - Active flexibility.
    - Passive flexibility.
22. **4 Types of fractures are:**
    - **Comminuted Fracture:** The bone breaks into several pieces.
    - **Greenstick Fracture:** An incomplete fracture in which the bone is bent; occurs most often in children.
    - **Impacted Fracture:** The broken ends of the bone are jammed together by the force of the injury.
    - **Transverse Fracture:** The broken piece of bone is at a right angle to the bone's axis.
23. Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters. BMI is used to determine a person's body weight category—underweight, healthy weight, overweight, and obesity.
    BMI= weight/h^2
    =72/1.68×1.68
    =72/2.82
    =25.5 Ans.
24. **Macro nutrients:** Macronutrients are the nutritive components of food that the body needs for energy and to maintain the body's structure and systems.
    Micronutrients: Micronutrients are the elements required by us in small quantities. Micronutrients, such as vitamins, minerals and antioxidants are involved with cellular and chemical processes in our body.

SECTION - C

25. Advantages of Physical Activities for children with special needs:

- It strengthens the heart muscle thereby improving cardiovascular efficiency, lung efficiency and exercise endurance. This helps in controlling repetitive behaviors among disabled children.
- Besides improving fitness, physical activity develops social relationships with other children, teammates and teachers.
- This brings positive changes in the social behavior of these children.
- It helps to improve energy levels in the body. Regular physical activity often makes children more energetic and, allows them to become active.
- It regulates blood pressure, cholesterol level and diabetes. Physical activity reduces stress levels.
- It helps to control weight. Children with disabilities are not physically active or may have deficit of calories, which takes fat away and lowers weight and regular exercises help in regulating weight.

26. Vitamin D: It contributes to collagen production, healing wounds, and bone formation. It carries out tasks like strengthening blood vessels, iron absorption, and supporting the immune system.
Sources: Sunlight (exposure to UV rays), fatty fish, beef liver, eggs, mushrooms, etc
Vitamin K: It is essential to prevent blood loss by promoting blood clotting at the site of injuries.
Sources: Natto, spinach, pumpkin, figs, parsley, etc.

27. Directing: Directing is the process of supervising, motivating, leading and communicating with the subordinates to achieve organizational objectives. Some of the key functions of directing in organizing a sports event include:

- Motivating team members to work towards a common goal
- Ensuring that team members have clear roles and responsibilities
- Providing necessary resources and support to the team members
- Encouraging effective communication and collaboration among team members
- Providing feedback and coaching to team members to improve their performance
- Ensuring that the event is organized in a timely and efficient manner. **(Any three)**

Controlling: The task of controlling involves establishing standards of performance, measuring current performance, comparing it with established standards and taking corrective actions, if there is any significant deviation between actual and planned performance. Some of the key functions of controlling in organizing a sports event include:

- Establishing clear performance standards and expectations
- Monitoring the progress of the event against these standards
- Identifying and addressing any performance issues or deviations from the standards
- Taking corrective actions to resolve any issues and ensure that the event stays on track
- Evaluating the overall success of the event and identifying areas for improvement. **(Any three)**

28. Sports Performance can be enhanced with the help of self-talk and self-esteem.
Self-talk: Self-talk refers to the internal dialogue that individuals have with themselves. Self-talk helps us to regulate our thoughts and emotions which can help us to reduce performance-related anxiety and enhance our performance. Positive self-talk is effective for improving and maintaining athletic performance.
Self-esteem: Self-esteem refers to an individual's sense of self-worth or value. Self-esteem plays an important role in enhancing sports performance by improving our decision-making process, building confidence, and boosting motivation toward attaining higher performance goals.

29. Effects of exercise on the muscular system:

- **Improves blood supply:** The supply of blood increases in the whole body during exercise.
- **Increases strength of ligaments and tendons:** There is an increase in the strength of ligaments and tendons with regular exercise. It helps to strengthen bones, ligaments and tendons. It promotes performance and prevents injuries.
- **Changes in size and shape of muscles:** Exercise leads to an increase in the thickness of muscle fibers that results in an increase in muscle size also known as muscle hypertrophy.
- **Increases Muscle Flexibility:** Due to an increase in blood flow and a rise in temperature, the elasticity of muscles increases.
- **Increases food storage:** With the help of regular exercises, food storage capacity in the body increases which can be utilized as per the need of the body.
- **Improves movement of muscles:** Regular exercises help in improving the movement of muscles and make them efficient and smooth.

30. Round shoulder deformity: The term rounded shoulders is used to describe a resting shoulder position that has moved forward from the body's ideal alignment. It is a postural deformity in which the shoulders are drawn forward, the head is extended and the chin points forward. It can be caused due to carrying a heavy load on shoulders, poor posture at work or while sitting and standing, etc.
Corrective measures for round shoulders are:

1. Stand in a correct posture.
2. Keep the finger tips on your shoulders and encircle your elbows in clockwise and anticlockwise direction.
3. Perform Chakrasana and Dhanurasana for some time.
4. Hold the horizontal bar for some time.

SECTION - D

31. (a) Staircase tournament
(b) The total number of matches in a single league tournament shall be $[n = n - 1]/2$.
(c) In league or round robin tournament, the winner is decided on the basis of the points table.

(d) 21 matches will be played.

(for visually impaired candidates)

1. **Transports committee:** This committee is responsible for making necessary arrangements for transportation facilities regarding the transportation of various teams to the venue of the sports event or to the place of boarding and loading as the case may be.
2. **Boarding and lodging committee:** Boarding and lodging committee is responsible for making necessary arrangements for providing accommodation and serving meals to the sports persons and officials.
3. **Ground and equipment committee:** This committee is responsible for making the grounds or laying out the track and field this committee also makes necessary arrangements for equipment related to the games / athletic meet.
4. **Reception committee:** The members of this committee are responsible to welcome the chief guests at the opening and closing ceremonies is also the duty of this committee to welcome the other guests and spectators.

32. (a) **Law of inertia:** If a body is in a state of rest, it will remain in the state of rest and if it is in the state of motion, it will remain moving in the same direction with the same speed unless an external force is applied to it.

(b) A moving ball slows down because the surface on which it is moving is in contact with it and applies frictional force opposite to the direction of its motion.

(c) The quality of bounce of an object, such as a ball, can be explained by the third law of motion, also known as Newton's law of action and reaction. This law states that for every action, there is an equal and opposite reaction.

(d) The acceleration of an object is directly proportional to the net force applied on it and inversely proportional to its mass.

OR

According to Newton's second law, the force with which the ball is moving is equal to its mass multiplied by its acceleration. When we catch a ball, the momentum of the ball is transferred from ball to hand.

(for visually impaired candidates)

1. **Newton's First Law of Motion Law of inertia:** This law states that a body at rest will remain at rest and a body in motion will remain in motion at the same speed and in the same direction till any external force is . applied on it to change that state. Application in sports

   Example: In basketball, players on the court must keep in mind about dribbling because the ball will continue to bounce for some time if they lose control. If the ball bounces too far away from the player, his or her team can lose possession.
2. **Newton's Second Law of Motion :** This law states that the acceleration of an- object is directly proportional to the force producing it and inversely proportional to its mass.

   Application in sports example: Runners struggle while stopping at the finish line because it requires a very sudden change in motion. Shot-put throw.
3. **Newton's Third Law of Motion:** This law states that to every action, there is always an equal and opposite reaction.

   Application in sports While swimming, the swimmer pushes the water backwards using his hands and thus attains a forward push due to an equal and opposite reaction from the water.

33. (a) (C)

(b) The founder of Special Olympics is Eunice Kennedy Shriver.

(c) Deaflympics.

(d) In the first Paralympics Games held in Rome, Italy in 1960, 23 countries that participated.

OR

The Paralympics motto is "Spirit in Motion". The motto was introduced in 2004 at the Paralympics Games in Athens. The previous motto was "Mind, Body, Spirit", introduced in 1994.

(For Visually Impaired Candidates)

Strategies to make physical activities accessible for children with special needs-

1. Physical activities should be based on the interest of the child to ensure active participation of the child.
2. Limitations of the children should be considered while planning physical activities for children with special needs.
3. Medical check-ups of the children must be done.
4. Modified Equipment should be used which should be according to the capability and level of children.

SECTION - E

34.
- Tadasana (Mountain Pose)
- Vakrasana (Spinal Twist Pose)
- Bhujangasana (Cobra Pose)
- Shavasana (Corpse Pose)

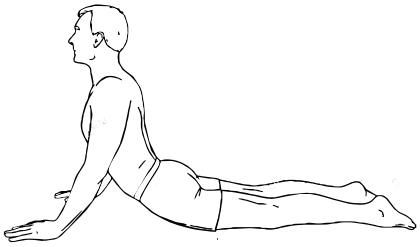
Bhujangasana: Bhujangasana or Cobra Pose is a reclining back-bending asana in hatha yoga and modern yoga as exercise. In Bhujangasana, one imitates a cobra with its hood fully expanded. It is commonly performed in a cycle of asanas in Surya Namaskar, Salute to the Sun, as an alternative to Urdhva Mukha Svanasana, Upward Dog Pose.

Procedure:
- Lie flat on your stomach, face down.
- Put your hands beside your rib cage with palms flat on the ground.
- Press your palms into the floor, inhaling deeply as you lift your upper body (that is, your head, neck, shoulders and upper chest) off the ground.
- Keep your breathing normal and steady.
- Hold this position for 30 seconds.

Contra indications:

You should avoid performing Bhujangasana if you have any of the following health issues:
- Hernia
- Pregnancy
- Headaches

- Back injuries
- Carpal tunnel syndrome
- Recently undergone abdominal surgeries
- Cobra pose for back pain is strongly contraindicated



35. The Rikli and Jones Senior Citizen Fitness Test for assessing the functional fitness of older adults describes easy to understand and effective tests to measure aerobic fitness, strength and flexibility using minimal and inexpensive equipment. These tests include-

- Chair Stand test for lower body strength.
- Arm Curl Test for upper body strength endurance.
- Chair sit and reach test for lower body flexibility.
- Back scratch test for upper body flexibility.
- Eight-foot up and go test for coordination and agility.
- **Sit and Reach Test:** This test is used to measure the flexibility of the back and leg (hamstring muscle) It is a kind of absolute and linear test of flexibility.

Equipment required: A testing box or a flex measure and a yardstick.

Procedure: The subject is asked to remove shoes and place his/her feet against the testing box while sitting on the floor with straight knees. Now the subject is asked to place one hand on top of the other so that the middle finger of both hands are together at the same length. The subject is instructed to lean forwards and place his/her hands over the measuring scale lying on the top of the box with its 10 inch mark coinciding with the front edge of the testing box. Then, the subject is asked to slide his/her hands along the measuring scale as far as possible without bouncing and to hold the farthest position for at least one second.

Score: Each subject is given three trials and the highest score nearest to an inch is recorded and 10 inches are subtracted from the recorded reading to obtain the flexibility score which is compared with the standards given in.

Eight foot up and go test

This test is a coordination and agility test for senior citizens.

Purpose: To assess speed, agility and balance while moving.

Equipment required: A chair with straight back(about 44 cms high) a stopwatch, cone marker, measuring tape, and an area without hindrances.

Procedure: Keep the chair next to the wall and mark 8 feet in front of the chair and a cone is kept over there. The participant starts completely seated, with hands resting on the knees and feet flat on the ground. On the command 'go' the stopwatch is started and the participant stands and walks (no running at all) as quickly as possible to and around the cone and returns to the chair to sit down. Time is noted as he /she sits down on the chair. Two trials are given to the participant.

Scoring: The best trial is recorded to the nearest 1/10th second.

36. Strength is the ability to overcome resistance or to act against resistance.

Methods to develop strength- ISOMETRIC EXERCISE:

Isometric exercises are those exercises, which are not visible. In fact there are no direct movements, hence they can't be observed. In these exercises, work is performed but is not seen directly. These exercises can be performed anywhere as no equipment is required. In these exercises, a group of muscles carry out tension against the other group of muscles. With the help of these exercises, static strength is developed. For example, pushing against a sturdy wall.

ISOTONIC EXERCISE

Iso means constant and tonic means tension, hence isotonic means constant tension. In this exercise the length of muscles changes (shortens or lengthens) during action along with the tension in them i.e. the movement can be seen directly. . There is no significant change in resistance throughout the movement, so the force of contraction remains constant These exercises tone up the muscles and the muscles become flexible. These increase the length of the muscles..

For example, Exercises with a medicine ball, Weight Training exercises, etc.

37. Friction is the force acting along two surfaces in contact which opposes the motion of one body over the other. The larger the area of contact between the surfaces, the greater the force of friction. When both the surfaces are smooth, the force of friction reduces almost to zero. The roughness or irregularities of the surface and the strong atomic or molecular force of attraction between the two surfaces at the point of actual contact cause friction. For example, when a cricket ball or a hockey ball is hit it moves very fast in the direction of the force in the ground. After sometimes its motion becomes less and ultimately it comes in static position.

Advantages

Friction has a great significance in the field of sports. It prevents the player from sliding and slipping.

For example: In the game of football, friction opposes the movement of the ball which slows down the ball and helps the players to throw or kick the ball.

Disadvantages

Some games do not require friction. For example, In cycling, there should not be more friction between the road and the tire of the cycle. Thus the tire should be fully inflated to reduce the force of friction. If there is more friction it will be more waste of energy for the cyclist.