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## PART - I

**Q.1 What is the meaning of Physical Fitness and Wellness? What is its important in our daily Life?**

**Ans. Meaning of Physical Education:**

There are different view of different physical Educationists regarding physical fitness. Some say that it is related to work. For some, good physique may reflect physical fitness, for a doctor it is the proper functioning of all body systems. In fact, it is a term wide meaning. It is the capacity of an individual to do his day's routine work effectively and

efficiently without undue fatigue. After the work is over, he is able to recover fast the quicker.

The level of physical fitness varies from individual to individual. It varies with nature of Work, size of individual, shape, structure, age, sex, adaptability, sports or other activity etc.

Physical fitness require efficient motor, mechanism (movement of body), efficient organic mechanism (physiological functioning) and efficient mental functioning (psychological setup), A fit individual possess sufficient reserve of energy to meet emergencies.

**According to Webster Encyclopaedia**—“It is the ability of a person to do daily routine work Without fatigue; moreover, to participate in playful activities and still reserves enough Capacity to meet any emergency.”

**According to David R. Lamb**—“Physical fitness is the capacity to meet the present and potential Physical challenges of life with success.”

**According to Dr. Kroles**—“Successful adaptation to the stresses of one's life style.”

**According to Edward Bortz**—“Physical fitness implies that “the body systems are capable for carrying on their activities satisfactorily.”

**According to Bruco Balle**—“Physical fitness depends on the bio-dynamic potential which is composed of functional and metabolic potentials.”

**Meaning of Physical Wellness :** Wellness is a concept of ideal of fitness. The scientific meaning of wellness is the state of being healthy and free of diseases. The various physical educationists have defined wellness in the following ways:

**(i)** Wellness may be defined as a state of optimal health which includes physical emotional, Intellectual, spiritual and social health.

**(ii)** Wellness is defined as the optimal functioning of body and creative adapting to environment that improves the whole person.

**Importance of physical Fitness & Wellness :** Physical fitness and wellness play a significant Role in ensuring a happy and well-balanced life. These are the functions for future and development of an individual . The importance of Physical fitness and Wellness in a person's life can be explained as follows:

**(i) Total Efficiency is Improved:** The total output of an individual is increased to a great extent. One is able to perform more work, may it be a mental or physical. One's exertion or fatigue is delayed, and therefore, one can perform the work for longer duration. One's recovery from fatigue is very fast.

**(ii) Better Quality of Work:** Individual's efficiency to do work is improved and he is able to work better than others. His responses become more accurate, therefore. Less wastage of energy is there.

**(iii) Proper Growth and Development:** Physical Fitness and Wellness help us to grow physically and mentally. Growth and development reach its optimum level and it is balanced.

**(iv) Better Utilisation of Leisure:** Free-time is utilised in a fruitful way and it gives good chance to express one's hidden talents.

**(v) Understanding of Hygiene:** We learn to maintain hygiene not only at personal level, but also, at communal level. We also learn to keep environment clean and safe for healthy living.

**(vi) Prevention from Various Diseases:** Physical Fitness and Wellness prevents us from various diseases and illness by improving our immune system. We also avoid injuries, diseases or illness.

**(vii) Shape, Size, Structure and Body-weight:** Through physical fitness and wellness programmes, we attain good shape, size and structure of the body. Body weight is also controlled for positive health. We can also cure postural deformities through it.

**(viii) Idea of Balanced-diet:** We learn more about balanced-diet and how to have balanced-diet and what type of food, we should eat and in what quantity according to one's appetite.

**(ix) Outlet to Emotions:** Physical fitness and wellness programmes give us good chance to express our feelings and emotions by taking part in different types of games and sports according to our liking.

**(x) Avoiding Stress:** We learn how to control stress and manage these practices through physical fitness and Wellness programmes.

**(xi) Improvement in Abilities:** Our strength, speed, flexibility, endurance and coordination and reaction time. Abilities are improved to a great extent.

**(xii) Prevents early aging** and encourages us towards optimum wellness and one thinks positive about life.

Or

**What do you mean by Circuit Training? Explain it.**

**[10]**

**Ans. Circuit Training:**

This type of work includes a number of physical activities performed one after the other in the form of a circle or circuit. These are two basic variations: fixed load and individual load. Both follow a similar pattern. The order of events is important.

**(1) Fixed Load:-**

The individual attempts to perform each exercise continually over a given time. When this is achieved, the circuit is redesigned to increase the stress level by setting a new target (e.g., lengthening the work periods or shortening the rest periods).

**(2) Individual Load:-**

The individual establishes their own level of work for each exercise. This is usually between 50% and 60% of the maximum that a person can do for 1 minute of the exercise. They are then timed for each circuit of exercises and aim to be faster each time they do the circuit. With individual load circuits it is possible to increase stress by reducing the rest periods between the exercises and by increasing the load level.

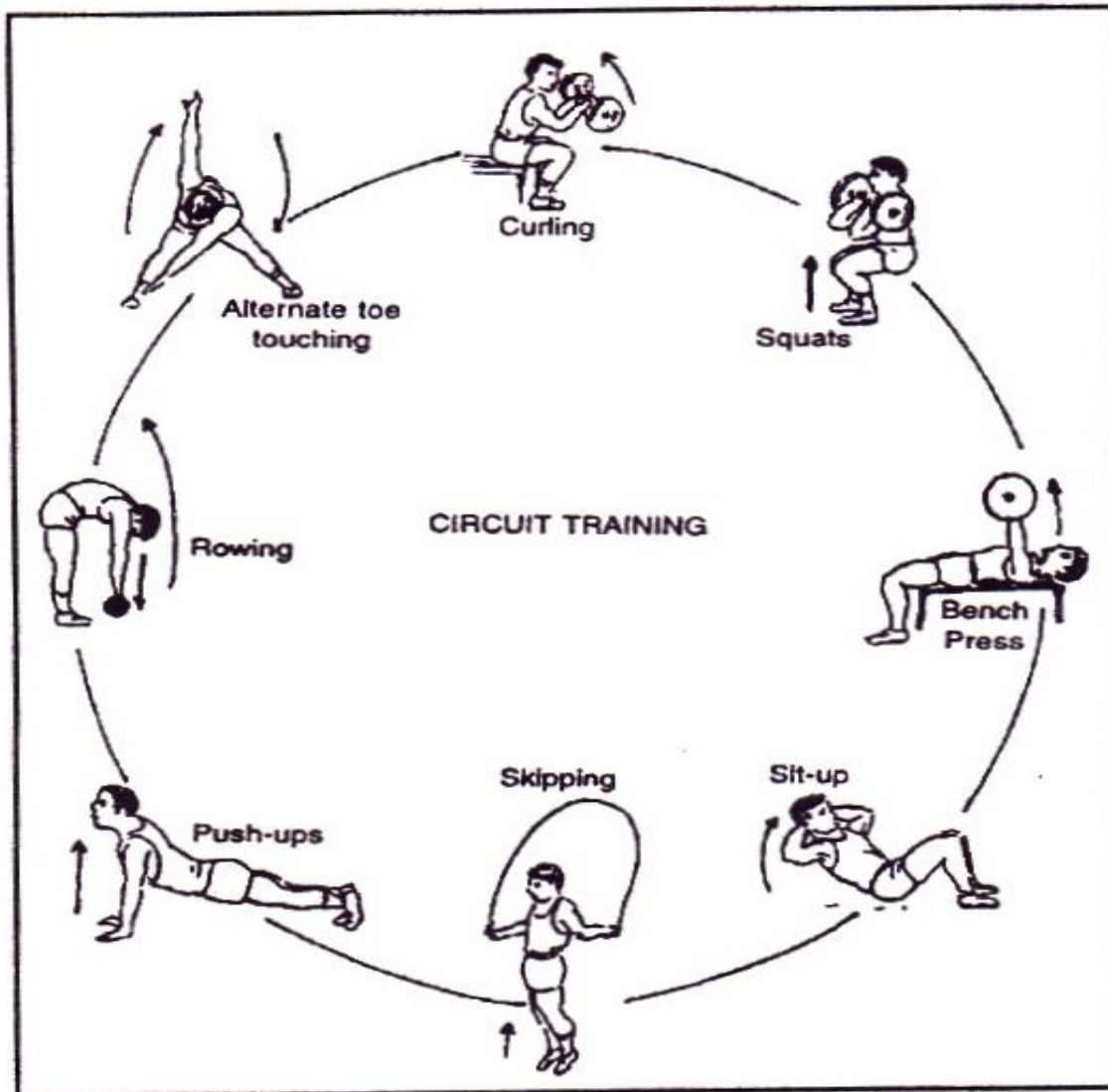
Circuit can be designed to build up strength, increase local muscular endurance or improve total stamina. The picture below shows an example of a simple six station circuit. Note that each exercise puts stress on a different part of the body and that each body part is worked in turn. You could be asked to write out a circuit.

The advantages of circuit training are that:

- The variety of exercises prevents boredom.
- As exercises can be done inside, there is no need to worry about the weather.

- Any kind of exercise can be included.
- It is easy to measure progress.

In circuit training, series of selective exercises are performed at different stations in a small place known as circuit. There are usually 5-10 or 12 selective exercises which are arranged in a



Circuit. At each station, one has to perform those specific exercise allotted to a station and then go to next station, and so on, for completing the circuit. The circuit can be set-up indoor or outdoor. The important thing to be kept in mind while selecting exercise, is that at every successive station, the exercises should be different from previous station. It should not consist of any muscle

groups, which had been used at the previous station, i.e., similar body muscles should not follow at next station.

**Advantages of Circuit Training:**

- (i) The equipments for can be provided easily.
- (ii) It is an interesting method of training.
- (iii) A number of athletics can do circuit training.
- (iv) It is the best method for beginners.
- (v) A single person/coach can control a number of students.
- (vi) It does not create boredom.
- (vii) Amount of training can be increased according to the ability of trainers.
- (viii) It is easy to learn. A trainer can learn to train himself.

**Q.2 What do you understand by Methods of Training? Explain the different methods of strength development. [2, 8]**

**Ans. Meaning and Concept of Training:** The word "Training" means to give practical and the theoretical knowledge. But, in physical education this word has a very vast meaning. Training methods are of various ways/means to enhance sports performance. In other words, we can say that these are long termed processes, based on scientific and systematic ways to enhance sports performance. These are based upon the scientific principles in a systematic order. In other words, we can say that these are the methods to improve general and specific performance in games and sports. It gives us knowledge (practical and theoretical) regarding performance and It also guides as to how we should improve further through different ways. IT's knowledge is helpful to coaches as well as the players and athletes.

**Method of Training:**

It is the ability to overcome resistance or act against resistance. Strength can be defined as the amount of force a muscle can exert. It is the most essential component for games and sports or to do any work in daily life. It's level differs from game to game and gender to gender and individual to individual.

**Definition of Strength:**

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(1) According to Barrow and McGee "strength is the capacity of the whole body or of any of its parts to exert force."

**According the Mathews:-** Muscular strength is the force that a muscle or group of muscles can exert-against a resistance in one maximum efforts."

**Types of Strength:**

**(a) Static Strength:** Static strength is also called isometric strength. It is the ability of muscles to act against resistance when body is not in a motion. Static strength can be measured by dynamometer. This type of strength is not seen directly. Static strength is not usually applied in sports, but in weight-lifting it is applied in phases. For example, holding position of all yoga asanas.

**(b) Dynamic Strength:** It is also known as isotonic strength. It is related to movement. Thus, we can say that it is required for movements in sports.

Strength can further be divided into three parts:

**(i) Maximum strength:** It is the ability, to overcome or to act against maximal resistance in a single contraction of muscle. It is required in weight-lifting, power-lifting, wrestling, throwing events, etc.

**(ii) Explosive Strength:** It is a combination of strength and speed abilities. In other words, it can be defined as the ability to overcome resistance with high speed. Explosive strength can further be divided into – start strength, strength, strength speed (power) and speed strength, Start strength – It is the ability to develop maximal muscle-force during the start phase of the movement e.g.s sprints start, weight-lifting, etc. Strength speed (power) – IT is the ability to overcome lower resistance with high speed e.g., Ball games like basketball, volleyball, combat sports (lower weight categories). The explosive strength is of different nature in cycling and cyclic movements e.g. power.

**(iii) Strength Endurance:** It is the combination of strength and endurance ability. It is ability to overcome resistance under fatigue condition. Strength endurance can be a form of static or dynamic strength depending upon the fact whether the movement is static (isometric) or dynamic (isotonic). It is commonly required for long distance races, swimming, road-cycling, etc. Games lasting for longer duration also require strength endurance like football, hockey etc.

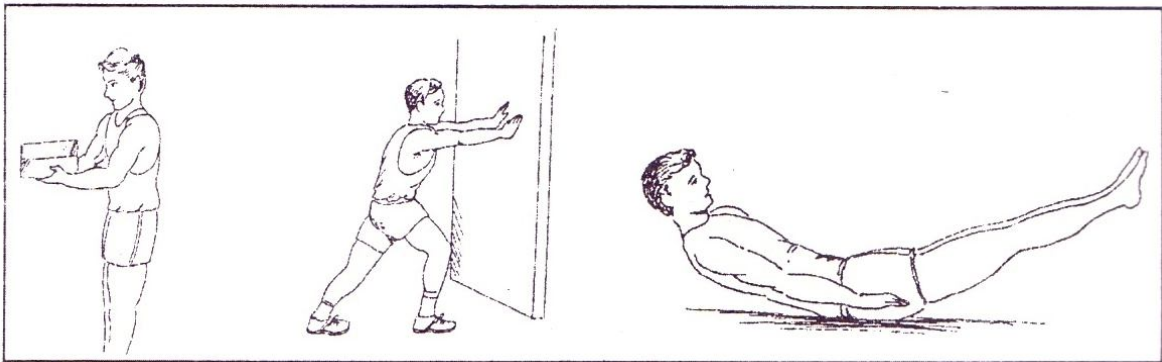
### Methods of Improving Strength:-

There are various exercises for the development of strength, i.e.,

**(A) Isometric Exercises:** These exercises were firstly introduced by Hettinger and Mukker in 1953. They were having the views that tremendous amount of strength can be development through these exercises. Word "Isometric" is derived from the Latin word, which means same length. Isometric is derived from two words ISO and metric.

Iso = Same

Metric = Refer to muscle length



Isometric exercises are those exercises, in which, the movements of muscles are not visible or seen. In fact, these are direct movements which cannot be observed. In these exercises, work is performed, but it is not seen directly. In these exercises, a group of muscles carry out tension against the other group of muscles. When these exercises are done, muscles do not change their length but contraction remain in muscle. They remain fixed or constant. Although muscles do not remain still constant completely. Muscles feel slight tremor in muscles will be. In general terms, we can say that work is done during these exercises, but scientifically, we cannot say that work is done. Work is said to be done, when the point of application of a force moves or we can say that

$$\text{Work done} = \text{Force} \times \text{Distance moved in the direction of force}$$

No, work is not done in isometric exercise. When we do these exercises, expenditure of energy is a usual phenomenon. Sometimes, temperature may increase while performing these exercises. If we performing these exercises. If we perform these exercises regularly, muscles will be changed in relation to size and shape. These exercises are taken for the development of strength. The strength improves through isometric exercises, is usually of not much value in sports. These exercises need less time and can be performed anywhere because no equipment is required to do

these exercises. These exercises are useful for rehabilitation purposes. These exercises can be done even by a person who is injured. These exercises should not be performed by the untrained persons and children. No doubt, isometric exercises improve strength very fast, but application of these exercises should be limited. Some Isometric exercises are as follow: e.g. Pressing and pushing the wall, Lifting very heavy weights, Holding the static position.

These exercises are effective for weight-lifting, gymnastics, judo, wrestling, etc.

**Advantages of Isometric Exercises:**

- (i) It can be performed anywhere.
- (ii) Less or no equipment required.
- (iii) Less time required.
- (iv) Can be performed by an injured player also (Assimilating to his level under care and precautions).
- (v) It develops high level of Static strength and Maximal strength in short time.

**Disadvantages of Isometric Exercises:**

- (i) It develops static strength, whereas in games and sports, dynamic strength is mostly required.
- (ii) It raises the blood pressure (not recommended for heart patients).
- (iii) Loss of interest after few days because of same types of exercises are performed each day.
- (iv) Difficult to monitor for a coach, requires self control.

**(B) Isotonic Exercises:**

These exercises were introduced by De Lorme in 1945. The word isotonic is derived from two words i.e. Iso and tonic.

Iso = Same

Tonic = Muscle tone

Isotonic exercises are those exercises, in which, movements of the muscles can be seen directly. Work is done in these exercises tone-up the muscles. Muscles become flexible. Length of the muscles (flexion or extension) can be increased or decreased by these exercises. These exercises are of much more value in the field of sports. These exercises are best for strength development. Calisthenic exercises, running and jumping on the spot, weight-training exercises, exercises with



medicine-ball are best examples of Isotonic exercises. These exercises can be done with or without apparatus.

**Advantages of Isotonic Exercises:**

- (i) These exercises improve strength because there is full range of movements in the muscles.
- (ii) These strength improvement can be evaluated objectively and easily.
- (iii) They develop more muscle soreness and chances of injuries are very common.

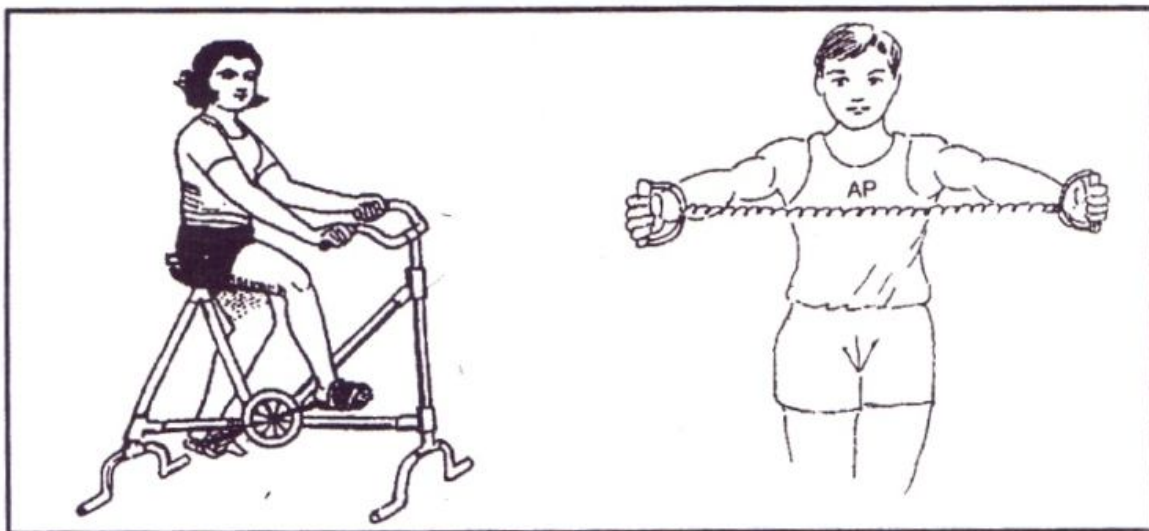
**(C) Isokinetic Exercises:**

These exercises were introduced by Perrine in 1968. Isokinetic exercises are performed on specially designed machines. The word isokinetic is derived from two words i.e. Iso and Kinetic.

Iso = Same

Kinetic = Motion, speed

During these exercises contraction of muscle or application of force and speed of doing exercises remain same throughout the range of movement. These exercises involve a specific type of muscle flexion, which is usually not applicable to sports and games, except in water sports, like rowing and swimming. The sportsman, who performs isokinetic exercises on machines should keep in his mind that he has to apply his force same throughout the range of movement.. By fixing the number of repetition and by reducing or increasing the speed, the isokinetic exercises can be applied effectively to the development of strength.



Isokinetic Exercises

**Advantage:**

It is fastest way to improve strength.

**Disadvantage:**

- (i) It requires expensive machines.
- (ii) It requires expert to monitor and supervise.
- (iii) Good for only well trained players.

Or

Define warming up, write in detail the importance of warming up.

[2, 8]

Ans. **Warming up and Limbering Down:**

**Warming up:** Warming up is a process of heating-up the body muscles and making them ready to start the work-running, jogging and performing certain exercises prior to the activity or competition. In other words, warming-up is a process by which human machine is brought to a condition, at which it safely responds to the nerve impulses of the person for quick and efficient action.

Warming-up helps the individual to prepare physically, mentally and physiologically to participate in any type of sports or competition. Moreover, warming-up helps in performing an activity skillfully and efficiently and is the most important to bring the exercising muscles in a state of readiness. This preparation is quite necessary before competition or training for better results, is called warming-up. Before getting into any activity or game the temperature of our muscles and body is low and not ready for the hard exercise or can not tolerate or bear the load of the activity. Therefore, we have to warm-up our body with the help of exercise before participating in any hard exercise or events, so that our muscles are enabled to bear the load of the activity or exercise. If we start playing or start exercise without warming-up, the chances of injuries, like muscle pull, muscle cramp, etc., may result.

The need of warming up depends upon the standard of player or person and it should be done in a sequence from top to the bottom (neck to feet), e.g. neck bending sideways, forward backward neck rotation (all directions), arm swinging, arm rotation (left to right and right to left), trunk exercises, leg exercises etc. Some more useful exercises are bending, twisting and rotation

exercises, running on the spot, hopping on one leg or both legs, etc. Warming-up should be done slowly, without wasting much energy.

**DAVRIES** says in his study, "Warming-up increases temperature of blood and muscles improve the performance."

1. "Warming-up is a practice in itself."
2. "Warming-up consists of a series of preparatory exercises either before a training session or competition."
3. "Warming-up is a process of heating-up the whole body by running and performing exercises prior to the activity or competition."
4. "Warming-up is a process, by which, human machine is brought to a condition, at which it safely respond to the nerve impulse of the person for quick and efficient action."

#### **Types of Warming up:-**

There are two types of Warming-up

**(i) General Warming-up:** General warming-up is commonly performed for every activity in similar way. It consists of simple exercises, like jogging, running, stretching, calisthenics, jumping, wind sprints, striding and rotational exercises. This general warming-up, tones up the major muscles and improves the mobility of joints.

**(ii) Specific Warming-up:** Specific warming-up is different from activity to activity. It tones up the smaller muscles, which are commonly used in that particular activity. It raises the mobility of smaller joints. This also improves the eye and body co-ordination. By this, the perfection in skill is improved. It actually prepares the body physically and mentally.

How to perform Warming-up (General & Specific)?

Firstly, go for slow jogging for 5-10 minute covering ½ to 1½ kms. Without using more energy. Because energy has to be preserved for competition or training. Then, perform stretching exercises from top to bottom. Starting from neck exercises towards feet in a sequence. Perform them with sufficient repetitions, like neck rotation, shoulder exercises, alternate arm swinging exercises, waist and hip exercises, forward/backward bending, side-ward bending alternate toe touching, forward lunging, side-ward lunging wrist and ankle rotation, then few jumping jacks, tug jumping and few sit-ups. After this, striding followed by wind sprints 4 to 5 times.

After general warming-up, specific warming-up should be performed.

**Specific warmingup for some of the games and sports:**

**(1) Basketball:** Shuttle running, dribbling, shooting, lay up shoots, dodging and fake practice.

**(2) Badminton:** Arc making with jumps, tossing, high clear, low clears, smashing, dropping practice, court crafting, etc.

**(3) Cricket:** Dummy bowling and batting action, knocking, net practice, catching practice etc.

**(4) Football:** Ball dribbling, ball juggling, kicking, heading, etc.

**(5) Hockey:** Stick rotation, tapping, hitting, scoops, etc.

**(6) Tennis:** Service practice, knocking, passing shots, wall practice, volley clear, slice clear, lob returns, etc.

Physiological Basis of Warming-up: Warming-up has the following physiological basis:

**(1) Increase the Body Temperature:** Warming-up increases temperature in the muscles. This decreases the thickness of the blood, letting the oxygen travel to different parts of the body quickly. It improves performance of the player. The risk of over stretching a muscle and causing injury, is reduced due to warming-up.

**(2) Reduce the Blood Lactic Acid:** Warming-up increases the heart-rate. This enables oxygen in the blood to travel faster. Higher the temperature, higher the consumption of oxygen will be and heart-rate. This reduces lactic acid in blood, which results in slower muscle fatigue.

**(3) Increases Metabolic rate:** Warming-up increases the metabolic rate, which ultimately enhances energy level. In fact, the metabolic rate increases due to rise in temperature by  $0.5^{\circ}\text{C}$ , the metabolic rate increases by 7 percent. If the metabolic rate is higher, there will be huge production of energy.

**(4) Increases Blood temperature:** The temperature of blood increases, as it travels through the muscles and as blood temperature rises, the amount of oxygen it can hold, gets reduced. It means, large amount of oxygen is made available to the working muscles enhancing endurance and performance.

**(5) Decreases the Viscosity of muscles:** Warming-up decreases the viscosity of muscles. If a previously inactive muscle is stimulated repeatedly, the first few contractions are often small and irregular and relaxation is incomplete. After this, the contraction becomes stronger and relaxation

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is complete. It occurs due to decrease in the viscosity of muscles. Hence, the rate of muscular contraction and relaxation becomes faster and efficient. The chances of injury or wear and tear of muscles and ligaments is reduced.

**(6) Decreases the Resistance in muscle capillaries:** Warming-up dilates capillaries, hence, decreases resistance. It lets more oxygen travel in blood with ease.

**(7) Increases the speed of Nerve impulses:** Warming-up increases the speed of nerve impulses hence, improves reaction time. The improved reaction time improves performance in all games and sports.

**(8) Increases Physical Work capacity:** Due to the above mentioned physiological impacts, the capacity to do physical work, is increased. All the systems of body become efficient to do their related work.

**(9) Increases the speed of Oxygen-flow and transfer to tissues:** Warming-up increases the speed of flow of oxygen in blood. Oxygen supply to tissue and muscles increased gets due to dilating capillaries.

**(10) Joints become more flexible:** Warming-up increases the production of synovial fluid located between the joints to reduce friction. This allows joints to work more efficiently.

Q.3 Write down social values which are developed through the physical Education Programmes.

[8]

Ans. **Enjoyment:** Participation and enjoyment no matter the results of the game.

**Effort:** Desire to become better, respect the opponent, value the effort to become better in motor competency.

**Social Relations:** Make friends through PE class, be tolerant and humble.

**Fair-play:** Respect to teammates and opponents, respect to officials, learn to be a good winner and to accept when you lose.

**Emotional Control:** Maintain calm on difficult situations, maintains calm and order personally and within the team no matter the result of the game. Also recognize own errors.

**Respect the rules:** Accept the rules of games and sports; follow teacher instructions and accept results.

**Intervention Techniques:** Case studies, debates, cooperative investigation, small discussions, problem solving activities, moral dilemmas, values discovery activities, methods of learning values, methods of clarifying values, methods of practice the values in real scenarios.

Q.4 Write on the meaning of social institutions and explain the importance of socialization in Physical Education and Sports. [2, 6]

Ans. **Social Institutions:**

A social institution is defined as a collection of individuals banded together in pursuit of a common purpose. Its common purposes include granting its members certain rights and privileges. Members of a social institution also possess certain delineated duties, responsibilities and liabilities. As a group, the people making up a social institution share common objectives and goals. Those in a social institution within society. While a general definition of social institutions includes churches and hospitals, the sociological definition revolves around five primary institutions. These include religion, education and family. Also, government and economy are social institutions. Generally speaking, the term "institution" can have many different definitions, depending on the lens that one is understanding it from. It typically describes a collective of people or ideas.

**Schools:** Schools of all types, from primary schools to institutions of higher education, represent another form of social institution. Schools exist for the common purpose of the instruction of others, such as to teach skills and share knowledge among educators and students or pupils.

**Families:** The general definition of social institutions also includes an extended family. In its basic or essential terms, an extended family is a collection of nuclear families. These nuclear families band together as a group or social institution because of a shared common ancestry. The nuclear families in and of themselves also constitute social institutions. This definition relates to one of the five sociological definitions of social institution which involves kinship.

**Primary Socialization:**

Primary socialization for a child is very important because it sets the ground work for all future socialization. Primary Socialization occurs when a child learns the attitudes, values, and actions appropriate to individuals as members of a particular culture. It is mainly influenced by the immediate family and friends. For example, if a child saw his/her mother expressing a

discriminatory opinion about a minority group, then that child may think this behavior is acceptable and could continue to have this opinion about minority groups.

**Secondary Socialization:**

Secondary socialization refers to the process of learning what is the appropriate behavior as a member of a smaller group within the larger society. Basically, it is the behavioral patterns reinforced by socializing agents of society. Secondary socialization takes place outside the home. It is where children and adults learn how to act in a way that is appropriate for the situations they are in. Schools require very different behavior from the home, and Children must act according to new rules. New teachers have to act in a way that is different from pupils and learn the new rules from people around them. Secondary Socialization is usually associated with teenagers and adults, and involves smaller changes than those occurring in primary socialization. Such examples of Secondary Socialization are entering a new profession or relocating to a new environment or society.

**Effect of Social Institutions on the individual:-**

Throughout one's life, one is exposed to and part of many different social institutions. Depending on the degree of quality of the social institutions, the life that one leads can be negatively or positively affected. For example, the school system has a huge bearing on a child's growth and development. Someone who attends a high-caliber school system is likely to do much better in the long run, than someone who attends a low caliber school system.

## **PART-II**

Q.4 Write down the fundamental and terminology of Badminton. [4, 4]

Ans. **Fundamental Skills:**

**(1) Service:** High serve, Low serve, Reverse hand, Drive.

**(2) Clears:** High clear, Low clear, Offensive clear.

**(3) Strokes:** Forehand and Backhand overhead strokes:

(i) Lob

(ii) Toss

(iii) Clear (offensive and defensive)

(iv) Drop

(v) Smash

(a) Forehand and backhand side arm strokes: Drive

(b) Forehand and Backhand under arms strokes: Net strokes

(c) Forehand and Backhand Cross Court Strokes

(4) Tacties and Strategy:- Systems of play:

(i) Singles Play

(ii) Doubles pattern of play – Front and Back – Side by Side – Rotation

Brief description of some skills.

**(1) High Service:** The server stands in the serving court with body-weight on to the from leg, then he directs the shuttle to the head of the racket with the other hand and as the shuttle moves down, he hits it hard and high, diagonally, in the court of the opponent, so that it falls near the long service line for Singles.

**(2) Low Service:** In this type of service, not much flight is given to the shuttle. The shuttle is hit in such a way, that it crosses over the net. The shuttle should fall just behind the short-service line.

**(3) Smash:** This stroke is played in such a way that the shuttle goes sharply downwards to the opponent’s court. The shuttle is hit hard by swinging the arm and strightning it at elbow.

**(4) Drop:** This stroke is played in such a way that the shuttle just crosses over the net and falls into the opponent’s court. The player gently hits the shuttle with quick action of arm and with flip action of the wrist.

Related Terminology	
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Alley	The 45 cm ( $1\frac{1}{2}$ " ) wide extension on both sides of the court used in Doubles-play.
Backhand	Any stroke made on the side of the body, opposite the racket side.
Bird	Another name for the shuttle.
Carry	An illegal shot, where th shuttle does not rebound immediately off the racket at the point of contact.



Clear	A high shot (or lob) which falls close to the back-line.
Crosscourt	A shot, in which the shuttle crosses the net in a diagonal direction.
Footfault	Illegal position or movement of the feet by either the server or receiver.
Handdout	Team used in Doubles to show that player has lost service.
Rally	An exchange of shot either in practice or during a match.
Server	The player who puts the shuttle into play.
Sideout	When the individual (in Singles) or team (in Doubles) loses serve and becomes the receiver.
Smash	The hard overhand stroke hit downwards with a great velocity and angle. It is the principal attacking stroke in badminton.
Throw	An illegal shot, in which the shuttle is carried or thrown by the racket.
Let	When the referee is not satisfied for the service or it is done without referee's signal it may be called 'let' by the referee. Point is disallowed for the service. In other words 'let' is called by the referee to stop the game as a result of accidental hindrance.
Deuce	At deuce, score is equal, may be 13 all or 14 all.
Long service	The long service for Singles at the end of the court. The distance for long service is 5.825 m.
Or Deep service	19 ft. 5 inches from the net. In Doubles, the distance is 0.60 M (22 ft.) from the net.
Posts	Two posts, to which the net is tied.
Service	A service is done by a player at the beginning of every point or at the starting of the game from his court to the opponent's court diagonally, away from the short-service line.
Shuttle cock	A shuttle cock is made of feathers and cork. Its length is 7cm (2.3/4") and its weight.
Shuttle	Is 5.50 gms, with 14 to 16 feathers. Game is played with shuttle.
First Hand	In Doubles-game the first service is known as first hand.
Second Hand	In Doubles, when 1 <sup>st</sup> service is lost may be due to any reason, then the 2 <sup>nd</sup>

	hand service is done by the 2 <sup>nd</sup> player.
Love all	To the start of the game and after deuce, it is called love all.
Lob	When the shuttle is played very high and goes to the opponent's court is lob return.
Drop	When the shuttle falls near the net in opponent's court while it is returned by a player, it is called drop.
Smash	When a shuttle is hit hard, and it moves downwards in opponent's court, is called smash.

Or

**Describe the History and Playground of your choice of game by making a picture. [4, 4]**

**Histry of Badminton:-**

Badminton game took its name from Badminton House in Gloucestershire, the home of Duke of Beaufort. The Badminton developed from a similar game. Battledore or shuttle cock played in China and Siam for centuries before modern era. The game was further developed in India and was called Poona, name after the city of Pune, where it was played by army officials. Badminton Association of England was formed in 1883 and framed some sets of rules for the game. Gloucetershire is now the base of international Badminton Federation (IBF). The IBF was founded in 1934. The world championship has been held every two years since 1977. The first major IBF tournament Thomas Cup. (World men's team championship) was held in 1948. Badminton was included in the Olympic games in 1992 as Barcelona Olympics. The Badminton Association of India was formed in 1935. The first Badminton tornament in India was held in 1929 in Punjab. It was known as the Punjab state Championship. The first national was held in 1936 at Bambah. India became the member of IBF in 1938. Badminton was included in the Asian games in 1962.

**Latest Rule of the Game:-**

**(1) The Service:** The first service of a side in each game be made from the right hand service court. The receiver shall stand in the court diagonally, opposite to the dserver. The shaft of the racket of server should face downwards while serving while serving.

**(2) The Service in Singles:** When the score of a server is an even number (2, 4, 6 .....), he shall serve from the right service court. And when the score of a server is an odd number (1, 3, 5 .....), he shall serve from the left service court.

**(3) The Service in Doubles:** In Doubles only one player can serve from the team starting the game. Then the players take their chance of service and then the service and then the service is again given to the team in service.

**(4) Scoring:** The point can be scored only by the player or team in service.

**(5) The Match:** A match consists of best of the 3 games. Any player or team that wins 2 games, wins the match.

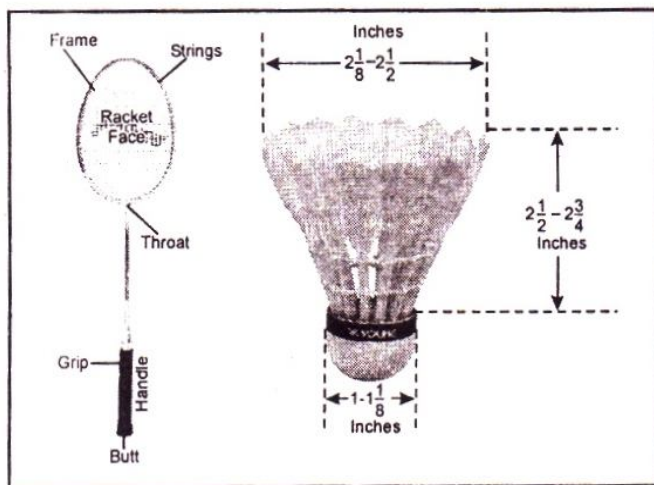
**(6) Fouls:** A foul is given, if:

- (i) a server, serves from above waist level.
- (ii) a player jumps, while serving.
- (iii) a part of equipment of a player touches the net or the pole.
- (iv) a player strikes the shuttle, before it passes over to his side.
- (v) The service does not land diagonally in the opposite court.

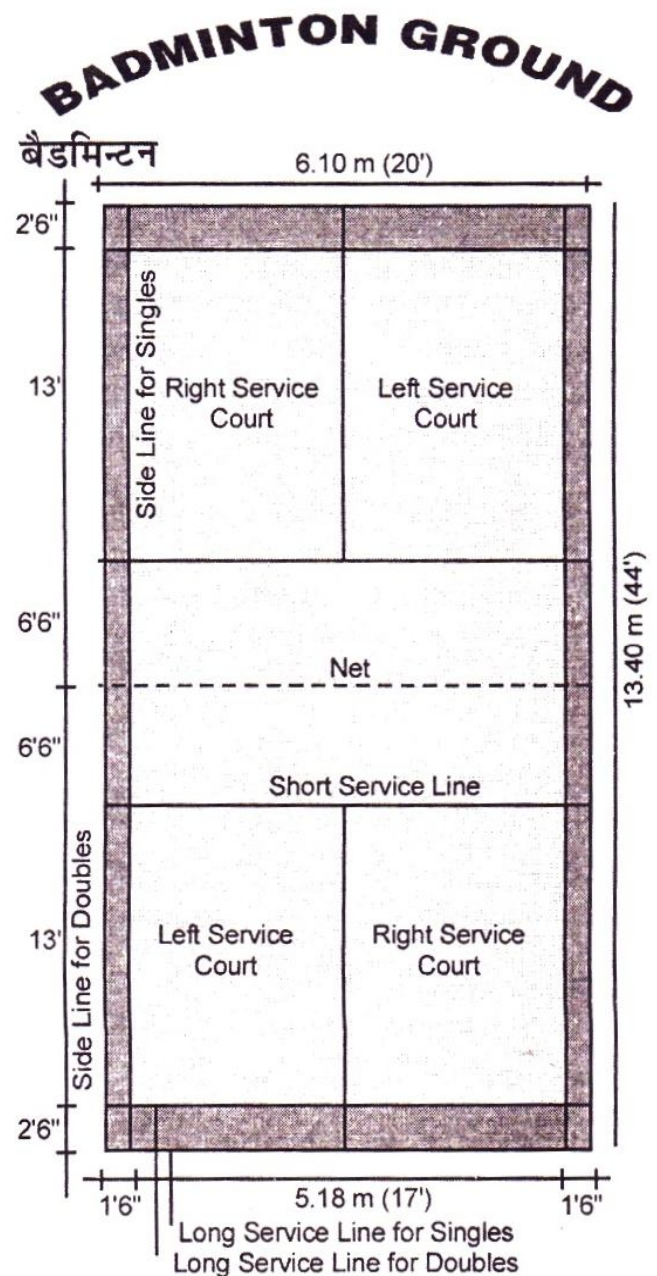
**Specifications of Court & Related Sports Equipment:**

**Tips to Remember:-**

1. The size of badminton court for the doubles, play =  $13.40m \times 6.10m$  (or  $44' \times 20$  feet)
2. The size of the badminton court (Single's play) =  $13.40m \times 5.18m$  (or  $44' \times 17'$  feet)
3. The breadth of the net = 760 mm
4. The height of the net at the centre = 1.524 m
5. The height of the net at the posts = 1.55 m
6. Weight of the shuttle = 4.74 gms to 5.50 gms
7. Number of feathers of a shuttle = 16
8. The length of the feathers of a shuttle = 62 mm to 70 mm
9. Number of points in the Double's Play (New Rule) = 15 to 18
10. Points in the Single's play for women (Old Rule) = 11 to 13



*Badminton Racket and Shuttle*



*Badminton Court*

**(1) Court:** The size of Badminton court for Doubles, is 13.40 m in length and 6.10 m in width (44 × 20 feet), and for Singles, the size is 13.40 m in length and 5.18 m in width (44 × 17 feet). The court is divided into two equal halves. From the centre, line, here is a short service line marked both sides at the distance of 1.98 m (6'6"), there is side gallery to both sides of full length of the court 40 cm (1'-6") and back gallery is marked on both ends, the size 72 cm (2'6"). All the lines are included in the court and the lines of the court are 40 mm in width.

**(2) Posts and the Net:** The posts shall be 1.55 m in height (5'.1") on the sides (on the poles). The posts shall be placed on the Doubles side lines (posts shall be fixed on the centre-line, outer line of the side gallery). The net shall be made of fine cord of dark colour and of evenly thickness with a mesh of not less than 15 mm and not more than 20 mm. The net shall be 760 mm in depth and atleast 6.1 m wide. The top of the net shall be edged with a 75 mm white cloth tape doubled over a cord or cable running through the tape. This tape must upon the cord or cable. The net in the centre shall be 1.524 m. (5'.0").

**(3) Shuttle:** The shuttle weight is 4.74 to 5.50 grams, may be of natural and, or synthetic materials, but un flight characteristics should be similar to those produced by a natural deathered shuttle with cork-base covered by a thin layer of leather. It shall have 14 to 16 feathers fixed in the base. Measured from the tip to the top of the base shuttle can be between 62 mm to 70 mm. The diameter of the circle formed by the tip of the feathers shall be 58 mm to 68 mm. The base of the shuttle be 25 mm to 28 mm in diameter and rounded at the bottom.

**Fundamental Skills:**

**(1) Service:** High serve, Low serve, Reverse hand, Drive.

**(2) Clears:** High clear, Low clear, Offensive clear.

**(3) Strokes:** Forehand and Backhand overhead strokes:

(i) Lob

(ii) Toss

(iii) Clear (offensive and defensive)

(iv) Drop

(v) Smash

(a) Forehand and backhand side arm strokes: Drive

(b) Forehand and Backhand under arms strokes: Net strokes

(c) Forehand and Backhand Cross Court Strokes

**(4) Tacties and Strategy:-** Systems of play:

(i) Singles Play

(ii) Doubles pattern of play – Front and Back – Side by Side – Rotation

Brief description of some skills.

**(1) High Service:** The server stands in the serving court with body-weight on to the front leg, then he directs the shuttle to the head of the racket with the other hand and as the shuttle moves down, he hits it hard and high, diagonally, in the court of the opponent, so that it falls near the long service line for Singles.

**(2) Low Service:** In this type of service, not much flight is given to the shuttle. The shuttle is hit in such a way, that it crosses over the net. The shuttle should fall just behind the short-service line.

**(3) Smash:** This stroke is played in such a way that the shuttle goes sharply downwards to the opponent's court. The shuttle is hit hard by swinging the arm and straightening it at elbow.

**(4) Drop:** This stroke is played in such a way that the shuttle just crosses over the net and falls into the opponent's court. The player gently hits the shuttle with quick action of arm and with flip action of the wrist.

**Q.5 Discuss any two Jumping events in Athletics.**

$\left[3\frac{1}{2}, 3\frac{1}{2}\right]$

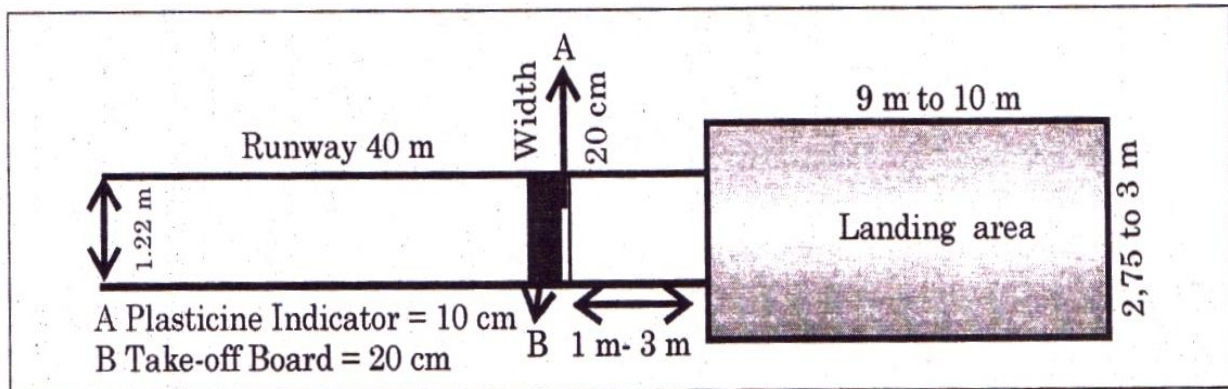
Ans. **Long Jump:** The long jump is a jumping event, where athlete combines speed, strength and agility in a horizontal jump for distance. Jumper makes their approach down the runway at top speed, plant a foot on the take-off board, and leap into the air.

**Tips to Remember:-**

- |   |   |                              |
|---|---|------------------------------|
| 1. Length of runway of long jump                | = | 40-45 m                      |
| 2. Width of runway of long jump                 | = | 1.22 m-1.25 m                |
| 3. Dimension of take-off length                 | = | 1.22 m                       |
| 4. Dimension of take-off width                  | = | 20 cm                        |
| 5. Dimension of take-off Depth                  | = | 10 cm                        |
| 6. Landing area of long jump Length             | = | 9 m                          |
| 7. Landing area of long Jump Width              | = | 2.75 m                       |
| 8. Playticine Indicator Length                  | = | 1.22 m                       |
| 9. Plasticine Indicator Width                   | = | 99 mm – 102 mm               |
| 10. Plasticine Indicator Height                 | = | 7mm, tapered at angle of 30° |
| 11. Distance of take off board from landing pit | = | less than 1 m                |

**Techniques of Long Jump or Broad Jump:**

(1) **The Approach Run:** It is manner in which the jumper approaches the take-off board and takes the jumps. Generally, the jumpers take 13 to 15 strides before they reach the take-off. A jumper can not put check-marks to know whether his strong foot will cone on the take-off borad or not.



*Long-jump Pit*

(2) **Take-off:** The jumper pushes-off on one foot, placed flat on the take-off board, while his shoulders rise to help him attain height and his arms remain in a running position.

(3) **Flight:** The movements the jumper makes when he is in the air, do not change his trajectory, but keep him from tipping forward. The hitch hick or extension styles help the jumper to keep his balance and prepare for the best possible landing so that the jump is not unnecessarily shortened.

(4) **Landing:** The athalete throws his legs and arms forward to land as far as possible from the take-off board. As the action in air ceases, the athlete gets benefits by arising and extending the legs as apart as possible. At that time, the head should be forcefully brought down to the thighs. The arms work in conjunction with the head, they swing from behind and over the top down and post the legs. When the feet have contacted the pit, both arms must be brought forcefully to keep the athletic from falling backwards. Whether landing will be in a sitting or tucked position it all depends upon the ability of the athlete.

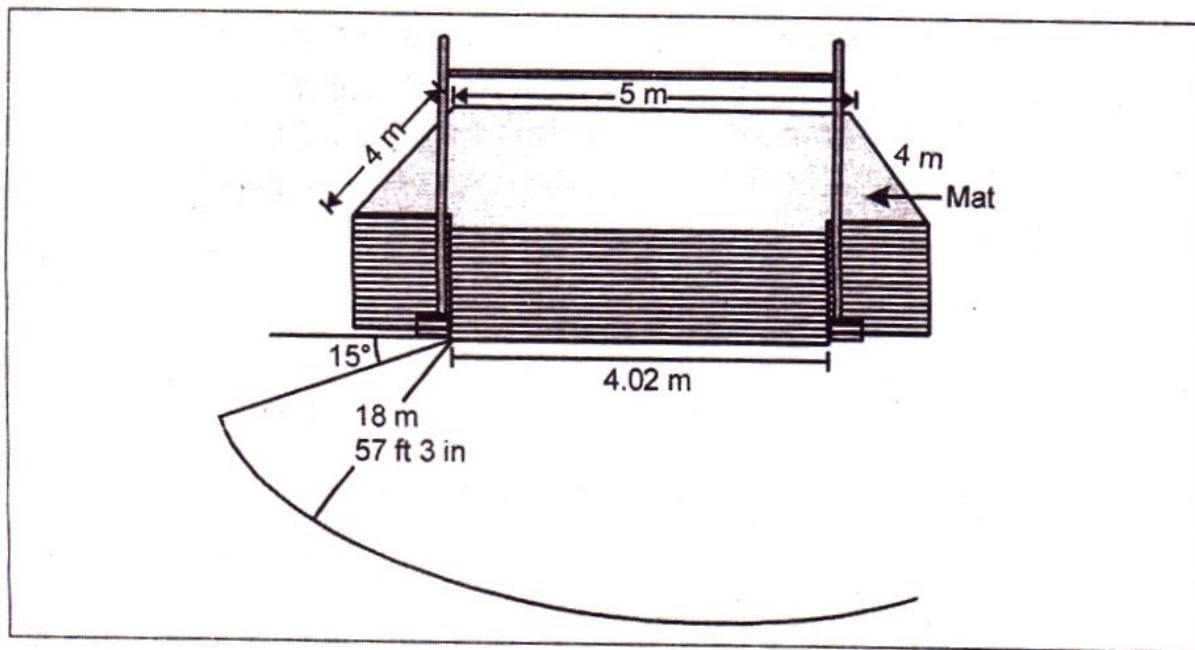
### High Jump:-

#### Tips to Remember:-

1. Length of runway = 15m
2. Length of the cross-bar = 3.98 to 4.02 m
3. Weight of cross-bar = 2 kg

4. Distance between the upright Poles	=	4.00 m to 4.04 m
5. Dimensions of the landing pit Length	=	6m
Dimensions of the landing pit Width	=	4m
Dimensions of the landing pit Height	=	70 cm

High Jump is an event in which an athlete tries to propel his/her body over a bar that rests across two upright poles. The jumper must take-off from one foot after an approach from any angle along a semi-circle runway.



*Layout of High Jump*

### Techniques of High Jump:-

There are four techniques of high jump:-

(a) **Scissors Cut:** Crossing legs alternately over bar and landing on feet.

(b) **Straddle:** Crossing by rolling over the bar and landing with the opposite leg. If take-off is with right leg then landing will be with left leg and vice-versa. Jumping angle from cross-bar is 35° to 40°.

(c) **Western Roll:** Crossing by rolling over the bar and landing with back. Jumping angle is 45° from the cross bar.

(d) **Fosbury Flop:** This is latest technique in which body curve/arc is used to clear the bar with the back and landing on to shoulders.



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**Techniques of Fosbury Flop:-**

**(1) Start:** Before starting, the athlete stops on the ground the exact place where he begins his run, makes his curve and takes-off as how many strides he will take. High jumpers run an average of 12 m between the start and the bar. In this style one adopts an angular runway.

**(2) Approach:** The athlete accelerates moderately for about 7 long strides during which, his speed might reach 8 meter per second. In the next 3 to 5 strides, he resists the force of the curve, so that he does not slow down. He begins to increase the frequency of his strides.

**(3) Link between approach and take-off:** In the second-to-last stride, the leg on the outside of the turn is bent, while the other leg which becomes the take-off leg, is fully extended.

**(4) Take-off:** The athlete pushes strongly the take-off leg. This push enables him to prepare for the rotation that he will make with his legs, hips and shoulders.

**(5) Drive:** This is the extension of the take-off. The athlete relaxes his body to concentrate on position and continues his rotation by raising his free-leg to the level of his take-off leg to prepare for achieving a horizontal position, with his back to the cross-bar.

**(6) Arc:** By tipping his shoulders back and bringing his heels under his thighs, the athlete arches his body, enabling his hips to rise over the cross-bar. The athlete's centre of gravity is sometimes underneath the bar.

**(7) Landing:** When his hips have passed the bar, the athlete strongly flexes his hips which raises his chest and legs very rapidly. Forming this angle with his body, enables him to avoid contact with the cross-bar and prepare for landing on his shoulders.

**Or**

**Define the History of Olympic Games in brief.**

**[7]**

Ans. **Ancient Olympic games:**

The origin of the ancient Olympic Games is lost the midst of pre-history, but for many centuries they were only a festival of the Greek people. The Games were first held in honour of the Greek God, Zeus in 776 BC in the plain of kingdom of Elis, nestled in lush Valley between the Alpheus River and Mount Kronion, 15 km from the Ionian Sea. The Olympiad celebrated that year was considered as the first and was used to date subsequent historic events. But religious ceremonies and games were held in Olympia before that time. The oldest sanctuary of Greece was there, the

altar of the Great Mother of Gods, Rhea (Earth). On the day of the feast, the priest stood in front of the altar, ready to perform a sacrifice. Women were forbidden to be present and the male contestants were naked. Young men waited at a distance on one stadium (about 200 yds.). As soon as a signal was given they ran and the first to arrive at the altar received the torch from the priest's hand and lit the sacrificial fire.

The old Olympiads were held after every four years and the Greeks measured time in terms of Games started on the first new moon after the summer solstice, around mid-july. The ancient Olympic Games lasted for five days and the events took place in a precise order. On the first day, there were sacrifices and opening ceremonies. On the second day there were special competitions for the "ephebians". On the third day was devoted to events for adult competitors: dromos, diaulos, dolichos, pugilism, wrestling, pancratium. On the fourth day, there were equestrian events, pentathlon, and race with arms. On the fifth and the final day, there were closing ceremonies and proclamation of the heroes. During the first six Olympic games, however, the prize had been a portion of meat or 'meria' taken from an animal sacrificed to the Gods. It was only after VII Games that the olive crown was given to the winners and the moral significance of the prize was considerable. Once the prizes were awarded, a flock of pigeons was released to carry the names of the champions to all the corners of the Greece.

The Games came to a sudden end when the Roman Emperor Theodosius banned the competitions and their attendant sacrificial offerings as pagan manifestations. From 395 AD onwards the fall of Olympia was very rapid. In that year the first damage was caused by the invasion of Alaric's barbarians. A year earlier the famous chryselephantine statue of Zeus had been taken to Constantinople. It was destroyed in 475 AD during the great fire. Following the attacks of the Goths, a fire destroyed the temple of Zeus; earthquakes from 522 to 551 and the most severe of all in 580 brought down whatever had remained standing. Glory had vanished and of the vast riches there were now left but a few ruins and the name of Olympic spirit.

### **Modern Olympic Games:**

The revival work of the Games was undertaken by Baron Pierre de Coubertin nearly 1,500 years after the last of the ancient Games. He was born into a family of Italian origin which had settled in France. It was on November 25, 1892, during a conference at Sorbonne about the history of

physical exercises, that he first pronounced those famous six words in public. "The Restoration of the Olympic Games". He said that the games would ennoble and strengthen amateur sports, to give them strength and lasting quality for an essential role in the world of modern education.

It was at the international Congress for the study of the Propagation of the principles of Amateurism held in Paris in June 1894 that the delegates led by Baron Pierre de Coubertin and associates unanimously voted to restore the Olympic Games and to create an International Olympic committee to oversee them. De Coubertin had planned to propose Paris for the site of the first modern Olympics in 1900 but the enthusiasm and zeal of the delegates was so great that they insisted the first Games to be held in 1896. Athens was, therefore, the venue for the 1896 Games. Since then these Games are held every four years. The aims of the Olympic Movement are to promote the development of these fine physical and moral qualities which are the basis of amateur sports and to bring together the athletes of the world in a great quadrennial festival of sports. The honour of holding the Olympic Games is entrusted to a city and not a country or area. The choice of a city for the celebration of an Olympiad is with the international Olympic Committee.

The XXII Olympic Games were held in Moscow from July 19 to August 3, 1980. Only 80 of the 140 member countries of the international Olympic Committee participated due to a Western-sponsored boycott of the Games. The XXIII Games were held in Los Angeles from July 28 to August 12, 1984. The Games were boycotted by the Soviet Union and other Eastern bloc countries except Rumania because of security reasons. The Games also saw the re-entry of China after an absence of 32 years. It was America's year at the Games just as it was Russia's year in the XXII Games in Moscow in 1980 when Americans had boycotted. The XXIV Games were held in Seoul, the capital of South Korea, from September 17 to October 2, 1988. The Soviet Union was the biggest medals winner of the Games which was participated by 160 countries. The XXV Games were held in Barcelona, the second largest city of Spain, in July August 1992. Athletes from 171 countries participated and Olympic medals were awarded to a record 64 nations, breaking the mark of 52 set at the 1988 Seoul Olympic.

The XXVI Modern Olympic Games were held in Atlanta (USA) from July 19 to August 4 in 1996. Over 10,000 athletes from 197 countries participated in the 26 sports and 37 disciplines. The Mascot of the Atlanta Olympics was a computer-generated creature called 'Izzy'.

**Olympic Symbol:-**

It comprises of five rings or circles, linked together to represent the sporting friendship of all people. The rings also symbolize the continents Europe, Asia, Africa, Australia. Each ring is of a different colour, i.e., blue, yellow, black, green and red.

**Olympic Flag:**

The Olympic flag created in 1913 at the suggestion of Baron Pierre de Coubertin was solemnly inaugurated in Paris in June 1914 but it was raised over an Olympic stadium for the first time at the Antwerp Games (Belgium) in 1920. There is also a second Olympic flag which is used for the Winter Games. These Flags are made of white silk and contain five intertwined rings. From left to right the rings are blue, yellow, black, green and red. The rings are meant to represent five continents viz., Africa (black), America (red), Asia (yellow), Australia (green) and Europe (blue). At least one of these colours is found on the flag of every country.

**Olympic Flame:**

It was at the Amsterdam Games in 1928 that for the first time an Olympic flame was ceremonially lit and burned in a giant torch at the entrance of the stadium. The modern version of the flame was adopted in 1936 at the Berlin Games. The Olympic flame symbolizes the continuity between the ancient and modern Games. The torch used to kindle the flame, is first lit by the sun's rays at Olympia, Greece and then carried to the site of the Games by relay of runners. Ships and planes are used when necessary. On July 15, 1976, space age technology was used to transport the flame from one continent to another.

**Olympic Motto:**

The Olympic motto is "Citius-Altius-Fortius" (faster, higher, stronger) Rev. Father Didon (1840-1900), headmaster of a school near Paris and a great promoter of sports in the French Catholic colleges near the end of the nineteenth century, first used the motto and had it embroidered on the pennants of his school clubs. This succinct definition of the philosophy of sport appealed to father Didon's friend, Baron Pierre de Coubertin who was responsible for the revival work of the

Olympic Games nearly 1,500 years after the last of the ancient games. It was adopted at his suggestion at the international Congress for the "Study and Propagation of the Principles of Amateurism" on June 23, 1894, the same day on which the restoration of the Olympic Games and the creation of the International Olympic Committee were also decided.

**Olympic Prizes Medals and Certificates:**

While in ancient times the Olympic heroes received a crown of olive branches for their exploits, modern, Olympic champions are rewarded with medals and certificates. The winning athlete now receives a gold medal, the athlete in the second place is awarded a Silver medal and the third placed athlete wins a BRonzemedal. In addition, a;; athletes ranking from first to sixth receive a certificate. Each medal is 60 mm in diameter and 3 mm thick. The first and second place medals are made of 92.5 per cent silver and the medal for the fisrt winner is then plated with 6 gram of fine gold. Thus this medal is not of full gold. The third place medal is of bronze.

### **Part-III**

**Q.6 How we can prepare for disaster and how we shall take care of health during disaster?**

**[3, 7]**

**Ans. Preparation of Disaster:**

Disaster will strike anytime. And worse is that if it strikes you and your family, the damages can be overwhelming. Emergency plans and effective disaster management is simply a number of the most effective ways that you'll be able to prepare your people from the worst case situations. However what if all emergency skills you have got been learning are applicable only prior to a disaster incidence. Would you recognize the way to deal, respond and survive during and after a disaster? As a defender of your family, learn these before, during and after disaster preparation tips.

Abasic disaster preparation technique is to put an emergency kit that's enough for the next 3 days or seventy 2 hours. Your disaster preparation kit should contain adequate water, food, flashlight, batteries, radio, medicines, first aid kit, sanitation materials and useful clothing. Conduct a disaster preparation drill or a route plan to orient every member of the family on wherever to pass a disaster, keep a duplicate of your vital files like birth certificates, ATMs, record and photos.

During a disaster, here is what you would like to orient your family about. First, grab the emergency kit and exit the house once there's a requirement. During an earthquake, lightning storm or cyclone, stay in the safe room. Additionally a decent disaster preparation tip is to require time to shut off electricity and gas pipes. When evacuating home, direct each family member to travel to your selected facility or a nearby relative. If somebody is badly hurt and needs medical attention, request help bring him directly to the nearest hospital or medical facility.

Another sensible disaster preparation tip is to always stay collective cool and calm. Panicking will never be for you good, and then teach each member of the family to be additionally watchful. When a disaster takes place, make certain that every member of the family is safe and good. If you're evacuated, ask permission from emergency officials regarding safety. If you stayed at home, activate your battery powered radio and listen for the news. Use caution on cracks and falling objects in your house.

Again, if your family's been evacuated, wait until you're given clearance by authorities. If staying at home, on the other hand, appears to be dangerous, search for a safer place in the neighborhood the soonest time. Remember, that disaster preparedness doesn't cover previous events, however additionally during and after a disaster.

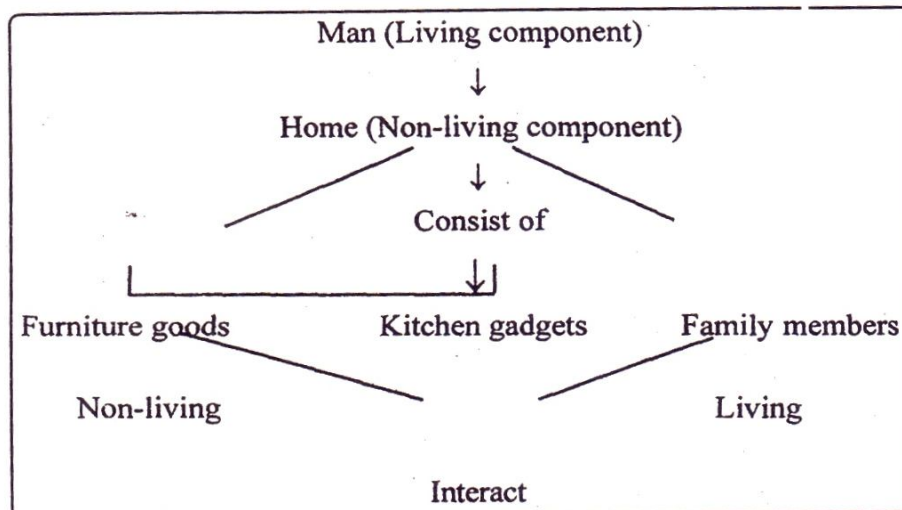
**Or**

**What is meant by healthful environment? Write in detail its scope.**

**[2, 8]**

**Ans. Concept of Environment:-**

Environment is the immediate surrounding around the man in which he lives like home, schools, colleges, parks, recreational areas, offices, shops, commercial complexes etc. All those areas from which living things get essential items of life and in turn give them other essential items is termed as environment. It includes all living things and non-living things of that area in which one can live. These living and non-living things interact with each other to form congenial surroundings on this earth to live. This environment can be easily understood by a simple diagram.



*showing Home environment and the interdependence of non-living and living things in a home.*

Growth, reproduction and development of all living organisms are effected by the environment in which they live. On the other hand by their activities the living organisms them selves effect their environment. Environment contains all living organisms from man to small invisible micro-organisms and non-living components like soil, water, air, atmosphere, gases etc. They all react with one another continuously to perform their vital activities of life. The major components of environment are climate and soil and all animals and plants including man fadapted themselves according to soil type and climate of that area. The mutual relationship between them is well studied by hierarchial representation of organisation and ecosystem. This environment includes all those things which this nature has given to us. Man has played an important role in destructing and exploting this natural environment. Ecosystem is actually the self-sufficient and self-regulating segment of nature that consists of a biotic community and its physical environment both biotic and physical components of environment interact with each other and exchange materials. This ecosystem may be natural or artificial, permanent or temporary. Abiotic or non-living components include climate, soil, water, temperature, light, inorganic nutrients and dead organic matter whereas biotic components include micro-organisms, plants animals and man. As already stated that man has altered this natural ecosystem or environment according to his own need and this led to various developmental activities like building of industries, urbanization, over exploitation of natural resources, deforestation. Use of non-biodegradable

material like polythenes, plastic things, radioactive materials, agricultural waste etc. These thoughtless and ruthless changes made by man imbalance the ecosystem and have degraded environment to such an extent that due to global warming, global cooling, sinking of coatalareas, extention of flora and fauna, quality degradation of potable water, food stuffs, noise level, various diseases will occur, which will pose threat to man's own survival. Natural disasters like flash flood, earthquakes, high speed storms, land-sliding, heavy and unexpected rainfalls, heavy snowfalls, acid rains, land slipping are few examples of deteriorating the environment. These not only affect the nature but also the physical health of man because man is an important component of environment. Various kinds of pollutions like water pollution, air pollution, soil pollution, noise pollution, food adulteration affect the health of the common man. This is the reason that man can be easily prone to various diseases. Children feel more fatigue and are weak because the environment in which they are living does not contain pure basic things like pure water, pure air, pure food, pure milk. It is the need of the hour to save environment which gives us life and continuously supporting us from time past from decades.

**Scope of Environment:** Living environment: Living environment is the environment in which man and other individual lives perform all the basic activities of life in that area or space. A living environment can be a room, a community centre, marriage party, a bird house, a zoo, soil (as it contains living organisms like micro organisms, earthworms, various kinds of fungus, protozoas, algae, plants herbs, bushes etc.), an office, a shop, play ground etc., but it also consists of various abiotic components. Without these components living environments cannot be developed e.g. players in the play-ground are living where ground, playing material (voley ball, basket ball, football, disc, cricket kit etc) are non-living. So all these things collectively form the living environment. This living environment must have clean air, dust free area, proper hygienic conditions should be there because if hygienic conditions are not taken into consideration it can lead to various harmful effects. For instance people who live in slum areas have bad sanitary conditions-no sewerage, no drainage, waste lying here and there. Moreover their children use to urinate in streets and their faecal matter remains lying in streets. These people have many individuals living in one room or in one hutment, their living environment is very poor and do not



obey the normal quality norms given by World Health Organisation. On the other hand middle and high class families live in good hygienic conditions and have almost all essential facilities of life but they over use the sources, degrading the environment.

So, it is concluded that living environment is the place where man lives either it is slum, flat, small hut, bungalow. These living environments must have proper sanitation and hygienic facilities so that their health should not be deteriorated and it should be disease free.

**Work-place environment:** Every individual on this earth continuously works for making money without taking care of his health. Work-place environment means the place where an individual works to earn his/her living. This can be an open road or street for a player and so on. This work-place environment has great impact on the life of an individual because maximum life-time of an individual passes in his work place. It has direct effect on man's health. For healthful work-place environment, some of the following points are as:-

1. It should be neat and clean.
2. It should have low level of noise so that work efficiency of an individual should not deteriorate.
3. It should be disease-free, so that others could not be affected.
4. It should not be stressful because stress is the major health deteriorant now a days which will affect mental and physical health of an individual.
5. There is no stagnation of work. It can lead to joint problems, headaches and other physical anomalies.
6. Workers should be provided with life saving uniforms while handling hazardous material in the work place.
7. In industries where noise is very high due to mechanical works, workers should be provided with ear muffs so that high noise level may not affect them.
8. In pharmaceutical industries various chemicals used in preparation of medicines are harmful to human being when raw. Workers should be provided with gloves and masks to save them from congestion and ingestion of various gases and chemicals.
9. Work place should have natural light and fresh air to maintain health.

10. Congested and small cabins have dim and unnatural light. Working in those places leads to mental stress and eyesight can be effected.
11. Work place must have provision for sun-rays because dark and damp work places are the homes of various disease causing organisms and insects, ,osquitoes which effect the health of individuals.
12. Toilets and Rest Rooms should be cleaned regularly and proper hygiene should be taken into consideration.
13. Eating places and utensils should be cleaned property for fbetter health.
14. Small brekes should be given to every worker or employee of the work place for proper movement of joints and body.
15. Water, which is an essential element of life and also one of the mediums for diseases transfer must be pure, safe and filtered, so that health of employees should not be affected. So, these are some of the points which are essential for proper functioning of officials, workers and employers in the work-place environment.

**Environment for leisure activities:** Leisure activities are the activities which we can do in the leisure hour or past time activities. When we are free we use to do those works which give us peace of mind and happiness. Leisure activities can be painting, dancing, reading, playing games, exercising, hearing music etc., but these leisure hours can be changed to save this environment are as:-

(A) Gardening is the leisure activity and is useful for maintaining environment. This is one of the hobbies for many people. They use to water their small gardens, lawns, pot and maintain their individual or home environment as well as environment in whole.

(B) Planting of trees and sapling in leisure hours of schools, collages by students in their premises as well as in those areas which are without trees is also an environment for leisure activities.

(C) Cleaning of the school grounds by the students in their games period can be judicially used for environment conservation.

(d) National social service caps wich come under the category of physicaleducation help in cleaning and conserving environment. N.S.S camps educate students as well as rural people in rural capms of judicious uses of nature and natural resources.

(e) Leisure activities like picnics, excursions and tours of schools and colleges should be taken to visit zoos, national parks, wild life sanctuaries, dams, pastures so that students may enjoy and realise the beauty of environment and nature.

(f) This environment has given us many such things with which we can rejuvenate ourselves like visit to natural forests, hills, natural, waterfalls, natural caves etc. These visits can make leisure time memorable.

**Q.7 What are the problems of adolescents and how can we manage these problems? [7]**

**Ans. Need:** The word adolescence is derived from a Latin word which means “to grow to maturity”. Adolescence is the growing period from childhood to maturity. Jersild has defined, “Adolescence is the period through which a growing person makes transition from childhood to maturity.” Adolescence starts with puberty and continues till maturity i.e. from 13 years to 19 years of age. It is also known as “teen age”. In this period there is rapid change in physical, mental, emotional and social development. The balance between physical and mental development is lacking, so it is a critical period. Here sexual growth is unmatching with emotions. This stressful period is difficult for an individual as well as family members. The main features of this adolescence period are as under:

**(i) Physical changes:** In this period there happen rapid physical changes. Puberty brings sex difference which changes the shape of an individual-such as breast development, muscular changes, bone hardening, moustaches and change in voice etc.

**(ii) Mental changes:** As compared to physical development mental changes are at lesser pace. The identity of good and bad is not up by the mark in teens-may be due to lack of experience. Though the intelligence of an individual is developing but it is practical approach. Teens try to hide their mistakes.

**(iii) Emotional changes:** The emotions in adolescence are very sudden and very intense. These emotions are sometimes uncontrollable to the adolescent. Teens often have an aggressive attitude and rebellion behaviour.

**(iv) Social Changes:** A teen-ager enjoys the company of his friends, thus family attachment declines. His loyalty towards group is more and he wants to prove his importance in his friends.

**Management of Adolescence problems:** At this delicate stage one needs proper guidance, counselling, check and channelization of energy.

**(i) Proper knowledge of adolescence psychology:** Parents, teachers and guardians must be aware of adolescence psychology and must understand the behavioural changes in teens. They must be saved from falling a prey to mental tensions, worries and other stresses. Parents, teachers guardians and friends must have good coordination. They must help each other to solve the problems at the earliest in best possible way.

(ii) Providing healthy atmosphere for growth & development: The atmosphere in home and school should be cheerful, playful and healthy, so that fullest of growth and development takes place towards maturity. Proper facilities and opportunities should be provided to meet the developing demands of teens. There must be safe and healthy environment.

(iii) Proper sex education: At this stage sex difference brings prominent changes. The adolescents must be made aware about these changes in a systematical way. They must be properly guided to tackle these sex problems and their doubts must be made clear regarding sexual development.

(iv) Correction and checking of mistakes: At this stage the teens must be given some-what liberty to take independent decisions. In case these decisions are not correct they must be guided in a proper way. Their faults, mistakes and errors must be politely and sympathetically treated instead of beating, blaming or giving punishment.

**(v) Proper use of time:** Teen-agers have a lot of energy & need good programmes to channelize it in a proper way. Participation in physical activities such as sports, games, adventures and exploring activities are good to channelize this energy. These activities satisfy the instinct of play, curiosity, aggression, competition zeal, adventure and expression. These also give an outlet to the inner talent.

**(vi) Mode of education:** Adolescents must be properly guided by teachers and parents. Education must be provided to them in an interesting way so that they may explore their inner capabilities. Proper teaching method should be used to make education interesting and enjoyable. Sufficient opportunities must be provided towards vocational education. Education must be related to the future profession. Parents and teachers must check the educational progress of their children from time to time.

**(vii) Moral Values development:** At this age sometimes children lose their moral character development. This depends upon the parents, teachers and guardians to develop good moral values in them and check their immoral acts. They must be properly taught about their culture, traditions, customs and to follow them. Social circle should be kept limited upto good and sincere friends.

**(viii) Spiritual guidance:** At this stage sometime children show less interest in spiritual ideas. They should be guided properly about the religion and the secular ideas. They should be active towards environment and help to control the pollution. The destructive ideas in mind can be controlled through religious thoughts.

**(ix) Friendly attitude:** At this stage adolescents want to accept the friendly attitudes. So parents & teachers should act more as friends rather strict disciplined & rigid parents. Moreover this friendly attitude will bring them more close instead of making gaps.

**(x) Independent ideas and liberty with proper check:** Children can be given freedom for some decisions. They can also have independent ideas which can be followed with some liberty under proper check.

Or

**How many types of injuries are known? Explain in detail any one injury. [3, 4]**

**Ans.** There are various types of common sports injuries which are as follows:

- (1) Soft-tissue injuries
- (2) Joint-injuries
- (3) Bone-injuries

**(1) Soft-tissue injuries:**

Every athlete or a player is prone to injuries irrespective of his fitness level. Nature of soft-tissue injury depends upon the nature of activity he participates. Soft-tissue **injuries can be classified into two groups:**

- (1) Minor soft-tissue injuries
- (2) Serious soft-tissue injuries

**(i) Minor soft-tissue injuries:** It is minor in nature with localized inflammation which is caused due to some damage to tissues, muscles or tendons. This is caused by overuse of affected part and relieved by sufficient rest and support. In some cases specific treatment is also needed.

**(ii) Serious soft-tissue injuries:** In this, there is damage of some tissues such as bursting of muscles, sprain of ligament, loss of tissues or continuity or rupture of blood vessels, localized inflammation and acute pain around the affected part of the body. Some of the serious soft-tissue injuries are:

**(i) Abrasion:** It is the skin-injury is caused when skin is scrapped or rubbed by friction or fall during any game.

It causes severe pain and sometimes bleeding.

**Treatment of abrasion:-**

- (a) Avoid further friction and infection.
- (b) Clean the part with antiseptic cream or soap and clean water.
- (c) Cover the part with medicated cotton or bandage.
- (d) Anti-tetanus injection to be taken within 24 hours.
- (e) If there is severe pain, some analgesic pain-killer may be used.

**(ii) Laceration/Wound:** It is the cut over the skin caused due to severe impact of an object or due to sharp edge. In such case bleeding is caused.

Treatment of laceration/wound:-

- (a) Clean the surface of the affected part and stop bleeding at the earliest.
- (b) Apply ice or cold compression.
- (c) If injury is deep, go to the doctor for stitches at the earliest.
- (d) Extreme care should be taken till the injury is totally healed.

**(iii) Strain:** It is the injury of muscle which is caused by the stress over the muscles or due to pull. In other words, this is caused by the violent stretch of muscles or overstretch of muscles beyond its normal limit. It can be mild or severe. In strain, the muscles get damaged or ruptured causing acute pain, loss of function of injured muscles, local inflammation and swelling.

**Treatment of strain:** Principle of RICER (Rest, Ice, Compression, Elevation and Rehabilitation) should be followed in treatment of soft-tissue injuries like strain, sprain and contusion.

**(a) Rest:** Give Complete rest to the injured muscle and restrict the movement immediately with crape bandage or elastic bandage.

**(b) Ice:** Apply ice to stop internal bleeding. Repeat it several times after at short intervals.

**(c) Compression:** Apply the crape bandage to injured part for compression. After two days or ore days, it depends upon the intensity of the injury, apply inflammatory cream and give gentle massage to the damaged muscle. The strokes of massage should be towards the heart. This will help to drain the abses or end products like dead cells.

**(d) Elevation:** After applying compression, the injured body part should be elevated or raised by providing sufficient support. This will help in quick drainage of impure blood, abses and injred issue. Thus injury will be healed quickly.

**(e) Rehailitation:** After complete treatment of the injury, perform rehabilitation exercises to restrengthen the muscles. This should be in a progressive way. Isotonic exercises may be given if pair does not persist.

(All these steps are also known as RICER – Rest, Ice, Compression, Elevation and Rehabilitation).

**(iv) Sprain:** It is the injury of ligament at the joint. Usually, it occurs at joints, likewrist-joint, ankle-joint, etc. It occurs due over stretching of ligament or by twisting of joint. In this, there is ruture of ligament and tissues. Sprain is very painful and it restricts the movement of joint. There is more swelling, as there is a lot of internal bleeding. In this injury, commonly affected joints could be knee, ankle, wrist shoulder, joint, etc.

**(v) Contusion:** It is an injury caused by the blow or impact, without breaking or rupture of the skin. In other words, it is crushing of soft tissues by a violent external force without breaking the continuity of skin. It causes acute pain, loss of movement of functionof an injured part, pain and sometimes swelling on the affected part. Contusion is very common in boxing, wrestling kabaddi, etc. In contusion, blood vessels in the muscles are broken and sometimes bleeding can occur internally in the muscle, which may cause stiffness and swelling on the affected part or area.

**(vi) Bruises:** In bruises, the upper skin remains unaffected, but inner tissues are damaged. The affected area turns bluish. In bruises, the blood spreads under the skin because of rupturing of blood vessel.

**(2) Joint Injuries:**

**Dislocation:** It is an injury of joint, in which, adjoining bones are displaced from their original position. It may be associated with sprain or fracture. Dislocation is mainly caused due to direct or indirect impact over the joint. It may be simple dislocation, fractured dislocation or complicated dislocation.

Deformity may arise if treatment is not given properly. Dislocation is common, in throwing events, but can be prevented by strengthening muscles, warming-up, controlled range movement and less jerky movements.

**Treatment of dislocation:**

- (1) Immobilise the joint and patient to be kept at comfortable position.
- (2) Apply cold compression by ice packs to reduce pain and internal bleeding.
- (3) Provide support by using sling and bandage.
- (4) Patient should be handled by an expert doctor, where X-rays and other diagnosis should be done properly.
- (5) The expert should manage immobility by applying plaster so as to enable the joint to take its real position.
- (6) This immobility should be of 3 to 6 weeks.
- (7) After full treatment of the dislocated joint, the progressive rehabilitation exercises should be followed to restore the strength of the joint.

**(3) Bone-Injuries:**

**Fracture:** It means the cracking or breakage of bones. Fractures are of different types which are as follows:

**(i) Simple fracture:** A simple fracture is that fracture, in which, bones are cracked or broken without wounds. Sometimes hair line fracture is there.

**(ii) Compound fracture:** A compound fracture is that fracture, in which bones are cracked or broken with wounds and resulting with bleeding.

**(iii) Complicated fracture:** When the broken bone injures the delicate part of the body, is said to be complicated fracture, e.g. intrusion of ribs into the lungs.

**(iv) Green-stick fracture:** In this fracture, bone does not break. It can bend or turn.



**(v) Depressed fracture:** The side bone of the upper-part of skull is dressed into it on being broken.

**(vi) Commuted fracture:** Bone is creacked into many parts in this fracture, e.g. involvement of hand into a working faooder-cutter.

**(vii) Impacted fracture:** In this fracture, the edge of a broken bone impacts into another one and sets there.

**(viii) Transverse fracture:** It is a break of a part of one fo te bones of the spine. Mostly, these injuries occur in the upper and middle part of the vertebra and lumber region of spine.

**(ix) Oblique bone fracture:** In oblique bone fracture, the bone bresks diagonally. Oblieve bone fracture tend to occur on longer bones like at the humerus or femer bones.