

THEORY

UNIT 1 PHYSICAL FITNESS

05 MARKS

- MEANING AND IMPORTANCE OF PHYSICAL FITNESS.
- COMPONENTS AND TYPES OF PHYSICAL FITNESS.
- FACTORS EFFECTING PHYSICAL FITNESS.

UNIT II TRAINING METHODS

10 MARKS

- MEANING AND CONCEPT OF TRAINING.
- METHODS OF TRAINING: ISOMETRIC AND ISO- KINETIC EXERCISE, CONTINUOUS METHOD, INTERVAL TRAINING AND FERTLEK, CIRCUIT TRAINING, ACCELERATION RUNS AND PACE RACES.

Unit III SOCIOLOGICAL ASPECTS OF PHYSICAL EDUCATION 10 Marks

- Meaning of Sociology and its Importance in Physical Education and Sports.
- Games and Sports as man's cultural heritage.
- Development of leadership qualities and group dynamics through physical Education.
- Value Education through physical Education programmes

Unit IV MORAL EDUCATION

05 Marks

- Need and Importance of Moral Education.
- Moral Education through Physical Education

Unit V SPORTS AND ENVIRONMENT

10 Marks

- Concept of environment.
- Need of environment in physical education programme.

- Role of individual in improvement of environment for health promotion and prevention of sports related accidents.

Unit VI YOGA

05 Marks

- Meaning and importance of yoga.
- Yoga and Indian heritage.
- Elements of yoga.

Unit VII CONCEPT OF MAJOR GAMES/SPORTS 10 Marks

- Cricket, Athletics, Basketball and Table Tennis.
- History of games (Above Games) O Rules, measurement of the field/court. (Above Games)

Unit VIII SPORTS MEDICINE FIRST AID REHABILITATION 05 Marks

- Meaning and Importance of Sports Medicine.
- Doping (meaning, and drugs for doping)
- First Aid and Rehabilitation of the following sports injuries: – Acute injuries: such as dehydration, heat stroke, and exercise-induced asthma.
- Chronic injuries: such as aches and pain of unknown origin, tendinitis (swelling in the tendons), and stress fractures (hairline fractures of the bone due to overuse)

UNIT 1

PHYSICAL FITNESS

Meaning and importance of physical fitness

Components and type of physical fitness

Factors effecting physical fitness.

Meaning and Importance of physical fitness, wellness and lifestyle

DEFINITIONS

According to Webster Encyclopedia: - It is the ability of a person to do daily routine work without fatigue; moreover, to participate in play activity and still reserve 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 lifestyle”.

According to Brown Balle. “Physical fitness depends upon the biodynamic potential which is composed of functional and of his metabolic function.”

PHYSICAL FITNESS

Physical fitness: Physical fitness means the capacity to do the routine work without any fatigue or exertion and after doing the work the person has power to do some more work and recovery is quicker.

There are different views regarding physical fitness. Some say it is related to task or work. For some consider it as good looking physique. Many consider it as proper functioning of physiological system. Whereas it is a term with wide meaning. It is some than the possession of strength, speed and endurance. The person who remains energetic, enthusiastic and cheerful in doing his work is said to be physical fit. Thus it is physical work output ability of an individual.

The level of physical fitness, varies from person to person. It depends upon the nature of work, size, shape, structure, age, sex and adaptability of an individual.

Different games require different levels of physical fitness depending upon the type of activity, event, game and sports. Physical fitness required efficient motor mechanism (movement of body) efficient organic mechanism (physiological functioning) and efficient mental functioning (psychological set –up). A fit individual possesses all these.

Physical fitness has been defined in various ways. Some define it as an absence of disease and some rate this according to the amount of muscular development and few defines physical fitness as the ability to perform certain sports skills the American college of sports medicine (1990) has defined that fitness is the ability to performs moderate the vigorous level of physical activity without under Fatigue and the capability of maintain such ability throughout the life.

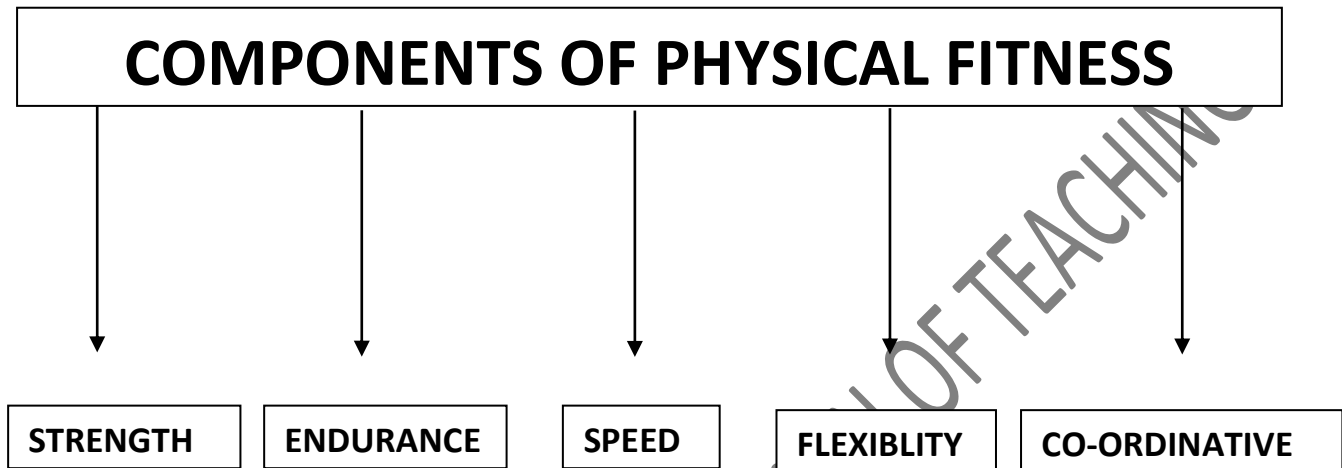
IMPORTANCE OF PHYSICAL FITNESS

- 1) **Harmonious growth and development**: Physical fitness programme provides good and healthy environment which helps in harmonious growth and development of individual.
- 2) **Improvement in physical abilities**: - Physical fitness activities directly improve strength, speed, endurance, flexibility and coordination abilities to a great extent.
- 3) **Improvement in efficiency**: - Through physical fitness overall efficiency of and individual is improved. A physical fit person can perform more work with less fatigue and tiredness. Thus it improves efficiency
- 4) **Better utilization of time**: - Physical fitness programme provide good atmosphere for growth and development. Thus time is utilized in a better way and it gives good chance express one's hidden talent.
- 5) **Improvement in physiological system**: Physical fitness improves the functioning various system of body. Thus body works efficiently and effectively without disorder
- 6) **Good looking personality**: - Physical fitness helps us to maintain good shape and size of body structure. Thus physical personality becomes attractive.
- 7) **To improve mental health**: Physical fitness improves mental health as well. It leads to increase in self confidence and positive body image.
- 8) **To increase the energy, power and capacity of the body**: A physically fit person can do his routine work without undue fatigue. The strength and capacity is increased because of internal energy due to which he can perform extra-curricular task after finishing the routine work. For e.g.- entertainment, aerobics, dance, gardening, etc.
- 9) **Prevents Cardio-Vascular Disease**: Healthy lifestyle protects our body from cardio-vascular diseases it leads to a reduction of extra fat from our body. Thus the heart becomes strong. It leads to improve the blood circulation in the body.
- 10) A physically fit person's body system functions properly.
- 11) Physical fitness decreases the risk of cardiovascular diseases
- 12) Physical fitness people have quicker recovery after illness and injury.
- 13) Physical fitness increases the energy level in the body.

14) Physical fitness does not only mean free from diseases but it also mean free from other psychological disorders like anxiety, stress, strain, tension etc.

COMPONENTS AND TYPES OF PHYSICAL FITNESS

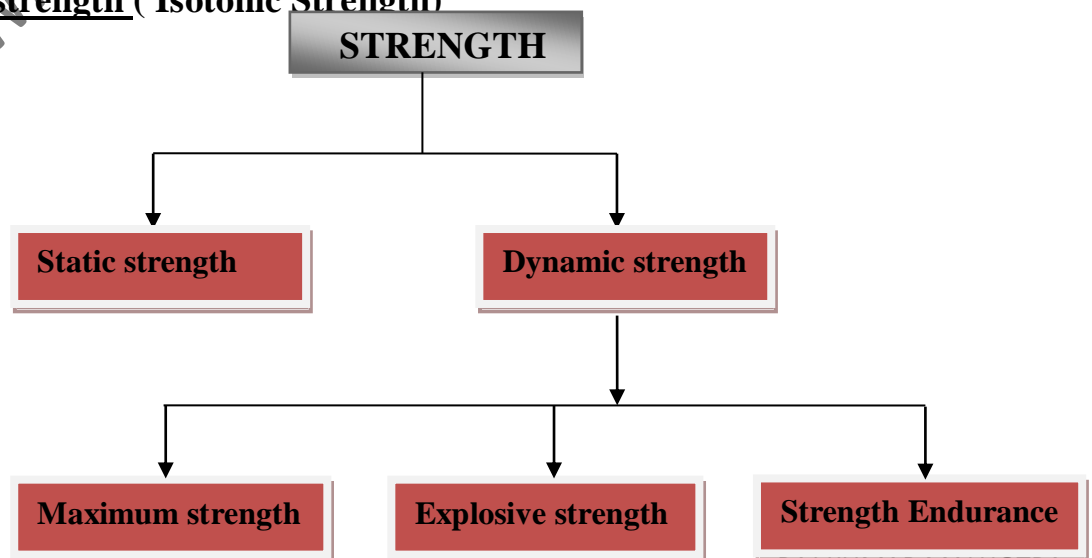
Five main components of physical fitness



1) **STRENGTH** : - Strength may be defined as the force or Tension a muscle can exert against a resistance in maximal strength. The strength of a muscle or muscle group is dependent on its size and quality. Muscles grow in size and quality in relation to general growth, nutrition and amount of exercise varying degrees of strength needed in muscles is depended upon the type of work or activity which is to be done beyond the ordinary daily needs. Muscle strength is just maintained, not increased if no additional effort is added to exercise or activity. Further the development of strength is specific to the muscles involved in a particular activity.

There are two types of strength

- 1) **Static strength** (Isometric strength)
- 2) **Dynamic strength** (Isotonic Strength)



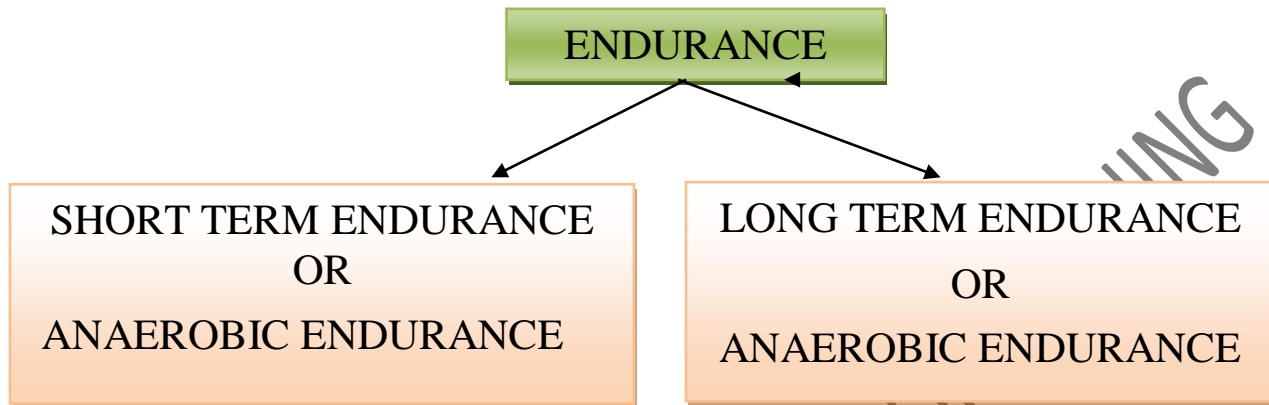
- i) Static Strength:** - It is also known as isometric strength static strength is the above the muscles to act against the resistance from one position e.g. Power lifting, arm wrestling pushing the wall etc.
- ii) Dynamic Strength:** - It is also known as isotonic strength. It is related to movement pull ups and push ups are the examples of dynamic strength. When a person uses dynamic strength the movement of his/her body parts are clearly visible. It is of three types.
- a) Maximum strength:** - It is the ability of a muscle to act against maximum resistance. In other words, it is the ability of the muscle to apply maximum force against the resistance in a single effort. It is also known as power. It is not used in all sports. It is used in those sports only which required his power to act against the resistance. It is used in weight lifting, shot-put, hammer, javelin throw, discus throw and wrestling etc.
- b) Explosive strength:** - It is the ability to overcome strength with high speed. It is the ability to apply strength with speed. It is the ability to perform a movement in the quickest possible time. It is also known as power. It is mostly used in jumping activity and in those sports where very powerful and fast responses are required. This is used in activities like take-off in long jump, high jump, triple jump, jumping in basketball before taking rebound, jumping in volleyball, spiking etc.
- c) Strength Endurance:** - It is defined as the ability to overcome the resistance under fatigue conditions. It is a combination of strength and endurance. It is required at the last movement e.g. strength endurance is required to finish the long distance races. Other activities which require strength endurance are swimming, road cycling, road race, wrestling and mountaineering etc.
- 3) Speed:** - Speed is the performance pre-requisite to do motor action under given conditions in minimum of time. Speed performances are commonly improved not directly by improving the functions of central Nervous system but indirectly by improving the various factors on which speed performances depend speed performances appear in different form in various sports. Speed can be developed by practicing with a faster rhythm. Speed endurance and repetitions method.

There are two types of speed:-

- a) Fast twitch fibers**
- b) Slow twitch fibers**
- a) Fast twitch fibers:-** Contract rapidly and produce maximum force and fatigue quickly.
- b) Slow twitch fibers:-** Contract slowly and produce less force fatigue slowly.

3) Endurance: Endurance is one of the important component for middle and long distance races It is also required for almost all major games like hockey. Football, handball, basketball, kho-kho etc Endurance can be divided into two parts

- a) Short term endurance
- b) long term endurance.



a) **Short term/ Anaerobic Endurance:** - Anaerobic means ‘without oxygen’. This is the endurance where the anaerobic type of activity is done, when the intensity/speed is very fast/ this endurance is for shorter duration and also known as muscular endurance as activity is performed in absence of oxygen with the help of stored muscle glycogen. It produces a lot of fatigue and tiredness. It is required for almost all games and sports.

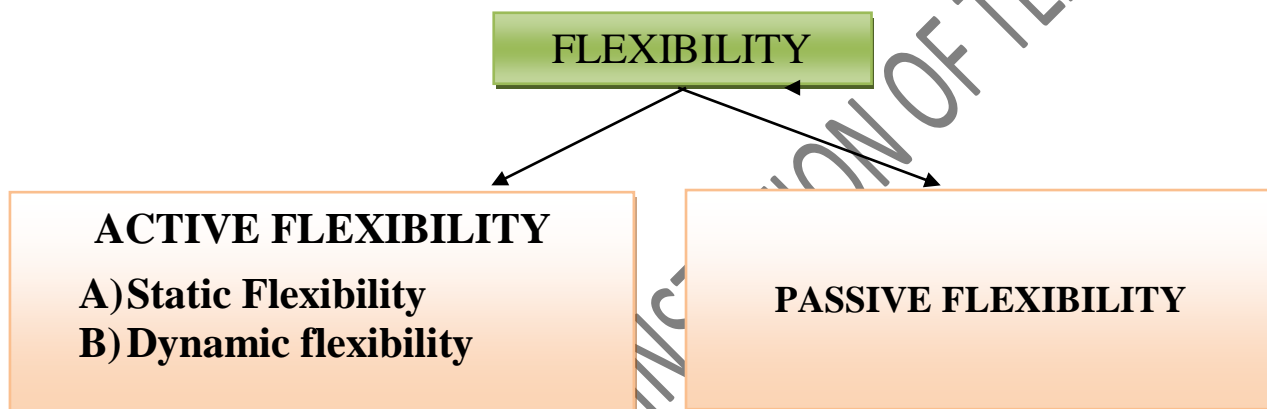
b) **Long term /Aerobic endurance:** - _Aerobic means ‘With oxygen’. In this endurance the activity is done for longer duration and the intensity/speed is lower. In other words, this type activity is of aerobic nature and speed is slow. It helps and relays fatigue. It is required for long distance races. Road cycling, Cross country and Marathon races.

4) **Flexibility:-** It is very essential for physical fitness. It is the ability of joints to move maximum range. In other words, this is the range of a joint due to its structure, surrounding, joining ligaments, tendons and muscle. Flexibility is not only required for players but it is essential for every common man. An individual with flexibility body can perform and type of activity easily. He can work more by using less power. Sports injuries can be avoided to a great extent, if sports person is flexible.

There are two types of Flexibility.

- i) **Active Flexibility**
- ii) **Passive Flexibility**

- i) **Active flexibility**: - The ability of joints to move up to maximum range without any outside help is said to be active flexibility. It can also be divided into two parts.
- a) **Static flexibility**: - It is the flexibility performed from stationary position e.g. Chakra asana, toe touching, sideward bending etc.
- b) **Dynamic flexibility**: - It is the flexibility performed while in motion or movement. This required for gymnastic, diving etc.
- ii) **Passive flexibility**: - To move the joints up to maximum range with external help is called passive flexibility. Passive flexibility is always more than active flexibility. In fact the basis of active flexibility is passive flexibility.



5) **Coordinative Abilities**: - Coordinative abilities are understood as relatively stabilized and generalize pattern of motor control and regulation process. These abilities enable the sports man to do a group of movements with better quality and effect. It covers both motor ability and motor fitness. The coordinative abilities can be improved by practicing physical exercises.

FACTORS AFFECTING PHYSICAL FITNESS

1. **Regular exercise**: It is the most important factor which affects the physical fitness of an individual is improved. Exercise effects the physical fitness to a great extent. Regular exercise is important for maintaining physical fitness and can contribute positively in maintain a healthy weight, healthy bone density, muscle strength and promotion physiological well being and strengthening the immune system.
2. **Amount of Training**: The amount of training also affects the physical fitness. If the amount of training is not up to desirable level he will be incapable of improving his physical fitness. It should be increased slowly.
3. **Rest and Relaxation**: It also affects the physical fitness of an individual. If proper rest and relaxations are taken, there will be positive effect on the physical fitness of an individual.
4. **Stress and Tension**: It tends to have a negative effect on physical fitness and wellness. Stress and tension decreases the psychological power of on individual.
5. **Age**: It is also one of the major factors which affects the physical fitness and wellness of an individual.
6. **Gender**: It also affects the level of physical fitness and wellness. Infact there are anatomical, physiological, and psychological difference between males and females.
7. **Environment**: The environment, which includes climate, temperature, altitude, social, and cultural factors affect the physical fitness and wellness of a person. Clean, safe and hygienical environment helps to gain physical fitness and wellness, whereas dirty, polluted and unhygienical conditions decline physical fitness.
8. **Balance diet**: It also influences the level of physical fitness and wellness. Good diet helps not only in maintaining the physical fitness but it also improves the level of physical fitness.
9. **Posture**: Posture also plays an important role in physical fitness. Good posture contributes towards physical fitness whereas bad posture restricts it.
10. **Health Problems**: - The physical fitness and wellness are greatly affected by health problems like diseases, injury etc. We should follow preventive and curative aspects of health education so that physical fitness and wellness should not be affected.

IMPORTANT QUESTION

- Q1. Explain the meaning of physical fitness?**
- Q2. Discuss briefly the importance of physical fitness?**
- Q3. Define strength. Discuss it types**
- Q4. Explain any two components of physical fitness**
- Q5. What do you mean by Endurance? How can you prove it to be an ability to resist against fatigue?**
- Q6. What is endurance? Explain the components of physical fitness.**

UNIT II TRAINING METHODS

10 MARKS

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TRAINING METHODS

Introduction: - Today game and sports is a specialized field. It requires a specific, scientific and systematic type of training to improve performance of players. Each activity requires a specific type of physical fitness, components and training methods to develop that component. The programme of training sports is known as 'Sports training'; it helps to improve performance along with specific component of physical fitness

Sport training is the branch of science which helps to increase sports performance. There are various types of training method to improve performance by developing physical fitness in a proper way. Sports training programmes improve physical fitness components along with health and wellness.

MEANING CONCEPT OF AND TRAINING

The word "training" means to give practical an theoretical knowledge but in physical education this word has a very deep meaning. Training methods are of various ways or means to enhance sports performance. In other words these are long term processes based on scientific and systematic ways to enhance sports performance. Training method are based upon the scientific principles in a systematic order. It is based on various aspects in its process like specific individual care; improve specific fitness, scientific ways, psychological feedback, technical help, good machines and apparatus, considering climate, diet, safety means, etc. It helps to develop basic skills, advanced skills, techniques, tactics, strategies, emotional stability during completion, motivation forces, etc. In simple words, we can say that these are the methods to improve general and specific performance in games and sports. It given us knowledge (Practical and theoretical) regarding performance and it also guides how to improve further through different ways. Its knowledge is good for coaches as well as important for a player.

According to Mathew:- Sports training is the basic form of preparation of sportsman”.

Martin: - It is a planned and controlled process of achieving goals in which the changes or motor performance and behavior are made through measure of content, methods and organization.

Training method consist of training periods which split into training session and training sessions are further divided into training schedules. in training periods the work our or load is performed in sessions which are made up of various schedules. Training methods are further programmed for quarterly, half yearly, annually or bi-annually result based processes. It is performed in progressive way though **macro-cycle (Months workout plan)**, **Meso – cycle (Weeks workout plan)** and **micro-cycle (day’s workout plan)**.

METHODS OF TRAINING

- 1) ISOMETRIC EXERCISE**
- 2) ISOTONIC EXERCISES**
- 3) ISOKINETIC EXERCISES**

1) Isometric Exercise: - These isometric exercises were first introduced by Hettinger and Muller (1953). They were having the views that tremendous amount of strength can be developed through these exercises.

Isometric is derived from Latin word which mean same length. In these strength training exercises, the length of muscles remains the same during workout. These exercises have no external movements and work done is zero. Hence these exercised have no visible movement, though lot f pressure is experienced by the person performing it. In isometric exercise muscles contract but do not move the joint, thus muscle fibres maintain constant length. In these exercise, muscle develop slot of tension, i.e. muscles become hard but there is no movement taking place and the length of muscles does not change during these exercises. In the exercises, the flexor and extensor muscles feel tremendous resistance over muscle whereas there is no movement of muscles. These exercises are effective for weightlifting, gymnastics, judo, wrestling, kabaddi, etc Example of these exercise are pressing or pushing the wall, lifting very heavy weight, holding the static position, pulling rope in tug of war, arm-wrestling etc.

Advantage of isometric Exercises

- It can be performed anywhere moreover, no helper is required
- In isometric exercise, less or no equipments are required as immovable objects are used

- Less time is required to perform whereas effects are more
- Isometric strength training exercises develop high level of static strength and maximal strength, thus effective for total muscular strength.
- These exercises can be performed during warming-up sessions

Disadvantage of Isometric Exercises:

- These exercises are used for rehabilitation of an injured sportsmen
- It improves only static strength as well as maximum strength.
- It can be performed any time at any place.
- These exercises require less time.
- Less or no equipment/apparatus is required

2) Isokinetic Exercises:- The word Isokinetic is derived from two words 'Iso' means 'same' and 'Kinetic' means 'speed' or motion. Isokinetic strength training exercises were introduced by **J.J Perrine (1968)** in these exercises, there is movement along with continuous tension in both flexor and extensor muscles. In these the muscles contract maximally throughout the full range of movement at a constant speed, i.e. both flexor and extensor muscles contract simultaneously. Here both the flexor and extensor muscles have tension along with full range of movement (may be upward or downward). In these isokinetic exercises, flexor and extensor muscles are developed simultaneously. These range of movement (may be upward or downward). In these isokinetic exercises, flexor and extensor muscles are developed simultaneously. These require special equipment like cycling (upward), swimming, weight training machines with spring or elastic resistance etc.

Advantage of Isokinetic Exercises

- Isokinetic exercises develop high level of dynamic as well as static strength.
- These are effective for almost every game or sport.
- Isokinetic exercises improve endurance along with strength.
- It improves all types of strengths like explosive strength, maximal strength, strength endurance.

Disadvantage of Isokinetic Exercise

- It requires special type of equipments.
- These exercises should be performed under observation of a coach.

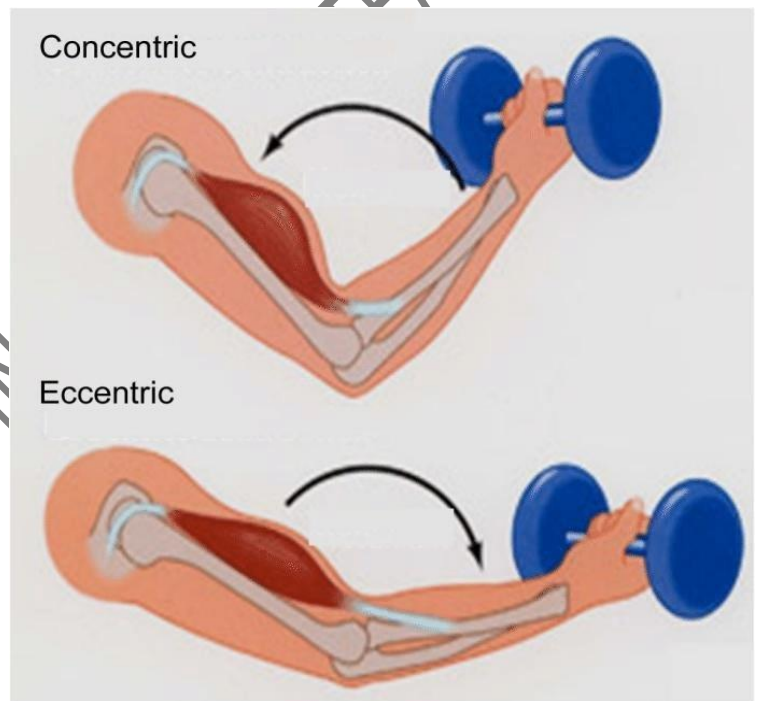
3) Isotonic exercise:- In the year 1953, **De Loone** introduced this exercise. In this exercise, work is done and a shortening/contraction of muscles is visible. In this exercise, the weight of resistance is less than the force applied, due to which contraction of muscle takes place. The word isotonic is derived from two Latin words i.e. 'Iso' and 'tonic'. 'Iso' means 'Same' and 'Tonic' means 'movement'. When a person performs isotonic exercises without weights, with free weights, or with fixed resistance machines, a constant resistance is moved through a joint's full range of motion and strength gains occur through the full range of motion. Most daily activities are isotonic in nature. These exercises are most common in sports e.g. Calisthenics' exercises, on spot jumping and weight training exercises etc.

Isotonic exercises are performed in two ways:-

a) Concentric:-

b) Eccentric:-

a) **Concentric:-** It is the upward movement of a section in which the flexor (antagonist) muscles shorten during actions whereas extensor (antagonist) muscles lengthen in size. In these exercises, one group of muscle (flexor muscles) contracts and the opposite group of muscles (extensor muscles) relaxes. Examples of concentric exercises like biceps curling, lifting the dumbbells, throwing the ball, chin-ups etc.



b) **Eccentric:-** In this exercise the antagonist muscle group contracts e.g. triceps, and the agonist biceps muscle group relaxes, due to this extension in the elbow joint takes place.

Advantage of Isotonic exercises

- it develops both dynamic as well as specific strength.
- These exercises are used in almost all games/sports
- These exercises also increase muscular endurance.

- In these type of exercise improvement can be easily measured by the amount of weight lifted.

Disadvantages of Isonic exercises

- Chances of injuries are more.
- A supervision is require for proper training
- Sometimes equipments are required to perform

METHOD OF ENDURANCE DEVELOPMENT

Methods of Endurance Development: - Endurance is the ability to sustain or continue activity. In other words, it is the ability to resist fatigue. it is one of the important components for middle and long distance races, and is required for almost all major games like football, hockey, basketball, handball, etc. It can be measured through distance run or time factor races.

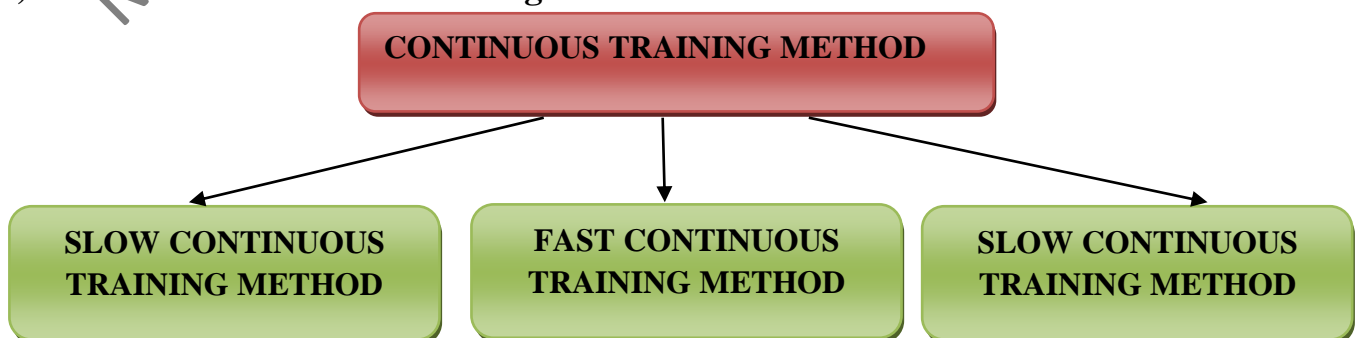
Development of endurance indirect develops strength and speed. Endurance is required for almost every major game and sport. Nowadays teams and players have equal level of skills and tactical ability where endurance makes a difference in the result of competition.

There are many methods of endurance development. Some of the important methods for developing endurance are explained below.

- a) **Continuous Method:** - In this method, the exercise are performed for a long time without taking any rest. To do exercise for a long time in these method the intensity is kept low. This method develops very high level endurance. It is practiced only one or two times in a week

This method is further divided into three parts

- i) **Slow continuous training method**
- ii) **fast continuous training method**
- iii) **Variable continuous training method**



- i) **Slow Continuous Training Method:** - This method is basically used by cross-country runners or Marathon Runners, Distance cycling, Triathlon, Athletes, Football players, Hockey players etc. as it develops high level of aerobic endurance. In this method, the speed or pace is set slow but the duration of workout or distance is long. Duration of workout is approximately 1 to 2 hours whereas the distance covered is 10 to 20 km. Heart rate is kept around 140 to 170 beats/minute. Work is done with slow pace to medium pace approximately 50 to 70 per cent of the maximum ability. In the end of workout limbering-down is performed with maximum stretching exercises.
- ii) **Fast continuous training Method:** - This method is used basically to Sprinters, Middle Distance runners, Skill games player like Badminton, Tennis, etc. Where they require anaerobic endurance along with speed. The load or workout is performed with faster pace or the workout is faster. It is performed for the duration of 15 to 30 minutes whereas distance covered is 5 to 10 km. Heart rate is kept around 160 to 200 beats/minute. Workout is done at 70 to 90 per cent of maximum ability as the intensity of workout is very high for longer duration. The cooling down should be done in the end with more stretching exercises.
- iii) **Variable Continuous Training Method:-** In this method an individual works continuously but with changing pace. Change of pace is pre-planned.

In this method, heart rate is maintained between 140 to 200 beats/minute. Workout is done with variation speed upon 40 to 100 per cent of best ability. In beginning speed of workout is fast, as fatigue increases the speed of workout is brought to medium and so on. Variable continuous training method develops anaerobic and aerobic endurance. This training method is effective for players of almost all games and sports.

Advantage of continuous Training Method:- Following are the advantages of continuous training method.

- i) Slow continuous training method improves the general endurance.
- ii) It improves the will power of an individual.
- iii) Glycogen in muscles and liver increases.
- iv) Fast continuous training method improves the size and number of mitochondria.
- v) This method improves the specific endurance.
- vi) The variable pace method improves the aerobic capacity (i.e. VO_2 max, muscle glycogen, oxidative enzyme etc)
- vii) This training has a positive effect on the heart.

b) **Interval Training Method:** - this method was first introduced by **Woldermar and Greshler** and again modified by **Reindell**. This method is considered as the best method for development of endurance. In this method, the principle of “effort and incomplete recovery” is followed. Interval training method is a special endurance training that involves burst of high intensity workout or load followed by low activity or rest. This method is based upon the scientific principles where effort/load or workout is controlled through various factors to provide incomplete recovery, such as According to **Harre** (1979), interval training method is classified according to duration of activity as mentioned below:

(a) **Short Time Interval Method: Duration load 15 seconds to 2 minutes.**

(b) **Middle Time Interval Method: Duration of load — 2 minutes to 8 minutes**

(c) **Long Time Interval Method: Duration load 8 seconds to 15 minutes.**

Each of these three methods can be placed under Intensive or Extensive Interval because intensity can be changed.

In the words of **Tonney (a German Coach)**, "When an athlete runs at the speed of 80%, his pulse rate will be 160 to 180 and during rest the pulse rate should come down 120 to 140. This is the best recovery time for speed endurance. This training is also based on 'effort and recovery'. The intensity in this method is very high. This method is generally used for, development of speed endurance, strength endurance. This method is valuable when preparation time is less.

In fact, this training method is based upon 'effort and recovery' recovery'. During interval training period is given to athlete after each speedy workout to bring the heart rate at normal level. In this manner, the load is repeated many times and is increased by changing one of: following variables. Fox and Mathew explained these variables of interval training in the 1974.

- (a) Rate and distance of work.
- (b) Number of repetitions.
- (c) Duration of rest.
- (d) Type of activity during the rest-intervals.
- (e) Frequency of training per week.

There are two types of interval training method:

- (i) Intensive interval training or fast interval training.
- (ii) Extensive interval training or slow interval training.

i) Fast or intensive Interval training method:

- 1) Volume or total distance is 2 to 5 km
- 2) Distance in each interval is 80 meters to 300 meters.

- 3) Speed or intensity is 80% to 100%
- 4) No. of repetitions is 15 to 25 times.
- 5) Duration of rest is ½ minutes to 2 minutes.
- 6) Heart rate is kept around 170 to 200 beats/min.
- 7) Mode of recovery is walking or slow jogging.

ii) Slow or Extensive Interval training method:

- 1) Volume or total distance to 6 to 12km.
- 2) Distance in each interval is 300 to 800 meters
- 3) Speed or intensity of work is 50% to 70%.
- 4) No. of repetitions is 15 to 25 times.
- 5) Duration of rest is 1 to 3 minutes.
- 6) Heart rate is kept around 140 to 170 beats/minute.
- 7) Mode of recovery is walking or slow jogging.

FARTLEK TRAINING METHOD

Fartlek is a Swedish term which means 'Speed Play'. This method was introduced by **O. Astrand and Gosta Holmer**. This is an effective method for the development of endurance and speed. In this method, athlete uses natural resources and environment for workout. Thus the natural track is utilized for running. Athlete is set free to run from a starting point with his own pace, may he run fast or slow. Athlete himself regulates or controls his speed. Athlete is made free to choose his path, may it be shortcut or long route. Athlete may take rest by sitting or sprint etc but the thing to be kept in mind is that he has to reach the finishing point in the desired time.

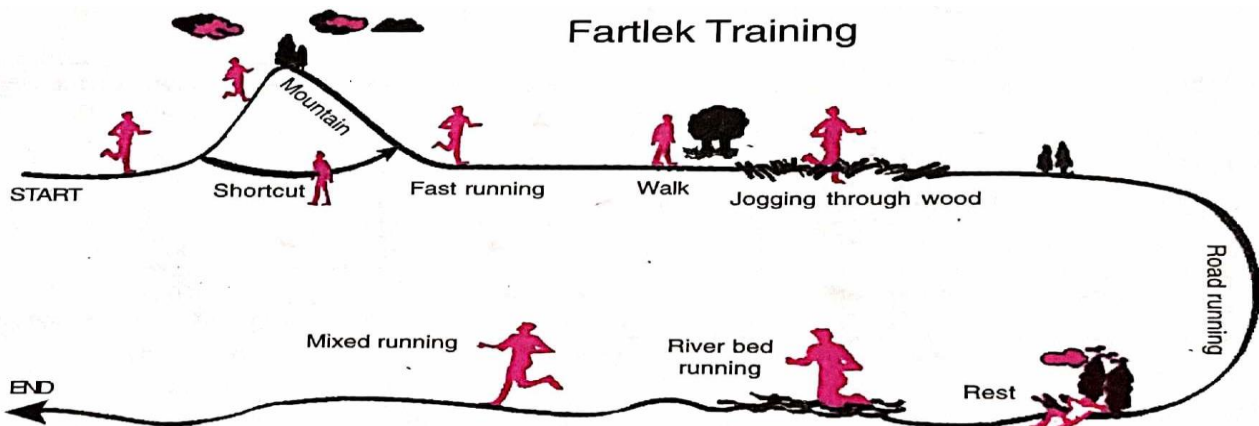
In fartlek Training method, the natural course is selected as it should have hills, forests, sand, river bed, roads, country side fields, etc. Before starting, athlete should perform

Fartlek Training

- The word Fartlek is Swedish and means 'speed play'
- This method of training involves many changes of speed.
- Improves aerobic and anaerobic fitness.
- Fartlek training is very effective for games players, since games involve the ability to change pace.
- To overload increase the time or speed for each activity or choose more difficult ground. E.g. running uphill or on sand.



proper warming-up. The approximate distance to be covered is 10 to 20 Km. The duration should be kept around 1 to 2 hours.



off-season. Athlete should carry water as well as safety tools for emergency

Advantage:

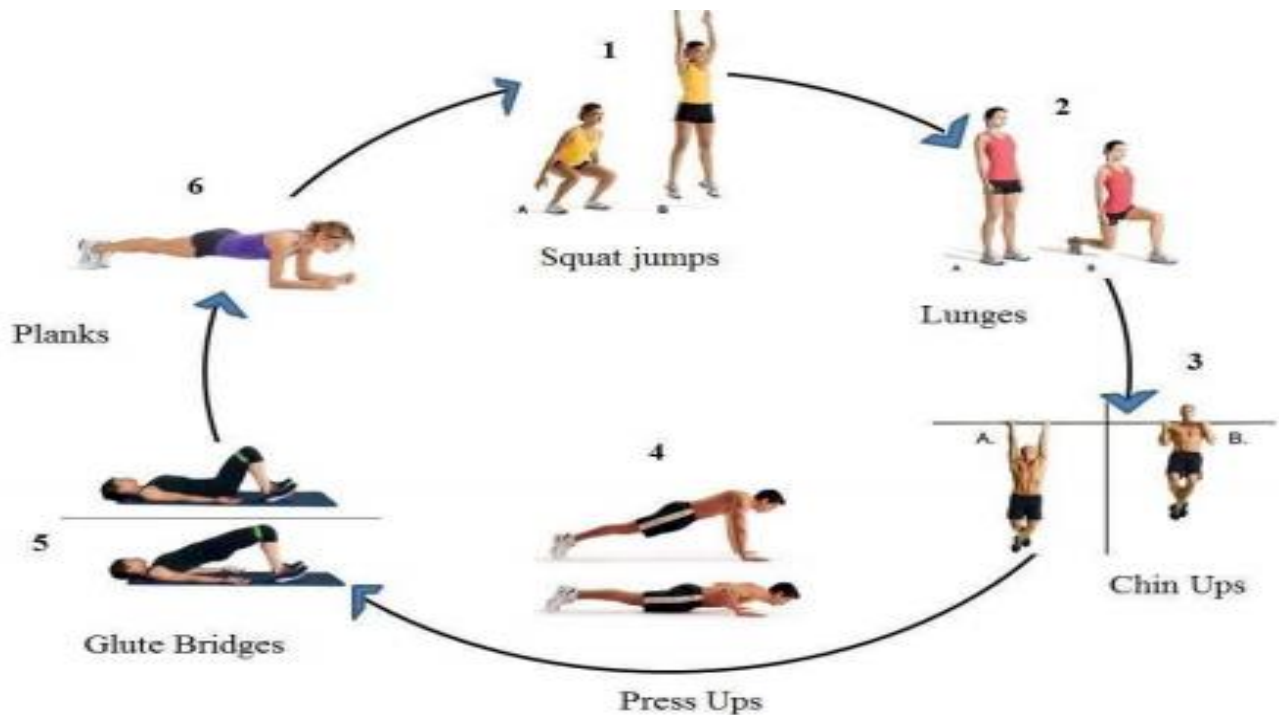
- 1) Fartlek training method is practiced in off-season period
- 2) It develops creativity and gives adventure along with physical fitness.
- 3) This endurance training method provides experience of nature.
- 4) It develops aerobic capacity.
- 5) It is done mostly in off season
- 6) It gives pleasure and develops creativity.
- 7) It provide experience of nature, gives adventure.
- 8) It provides natural motivation and increases will power

Disadvantage:

- 1) Coach cannot supervise the activity.
- 2) Possibility of accidents because the path is not pre-planned.
- 3) Athlete may follow dangerous route and fail to reach the destination.
- 4) Path may be dangerous or athlete may be lost from its destination.
- 5) Actual running track is missing which is used for competitions.

CIRCUIT TRAINING

Circuit Training: - This training was introduced by **R.E Morgan and G.T Adamson** in the year 1957. Later in the year 1979, scholish modified the circuit training. He gave number of exercises which can be used in circuit training programmed. Circuit training more popular as compared to other training method.



In circuit training method, a series of selective exercise are performed continuously without rest at different station or point. It is performed at small place known as ‘Circuit’. There are usually 5 to 10 selective exercises which are arranged in circuit training method. At each station athlete has to perform certain specific exercise allotted to that station and then go to next station for completing the circuit. At each station a particular type of exercise is performed without rest with certain number of repetitions or for certain time duration. Special care is taken so that successive station should into have similar exercises involving same muscles. Athlete proceeds to next station after performing exercises of that station and goes on till end of circuit. This circuit set-up may be indoor or outdoor. The important thing to be kept in mind while selecting exercise is that each exercise should be different from the previous exercise. It should not consist of same muscular groups which were used at previous station, i.e. successive station should have different exercises.

Advantage of circuit Training Method

- 1) It is the best method for beginners as it develops strength, endurance, and coordinative ability.
- 2) A single person or coach can control a number of students.
- 3) 5 to 10 student can be trained at the same time.

- 4) Circuit training method does into create boredom as many varieties of exercises can be included.
- 5) Maximum functioning of muscle can be gained in a single circuit.
- 6) General as well as specific exercise for the game can be performed.

Point to be considered before training session:

- 1) Number of repetitions at each station.
- 2) Different exercises from the previous exercises.
- 3) No rest should be taken.
- 4) Duration of exercise (approximately 30 sec. to 2 min.)

KOTWAL NATIONAL INSTUTION OF TEACHING

- Need and Importance of Moral Education.
- Moral Education through Physical Education

Moral Education

Introduction

Moral education is an abstract concept. Moral education has no accepted definitions. It has different meanings in different societies. Moral education evolves for each sphere of society and circumstances encountered these. As per the domestic circumstances of small child it is started early but proceeded at very different speeds.

Few important definitions regarding moral education are given below:

In the words of **Bull**, "All morality consists of relationship between persons, that its three concerns are therefore, self, others and the relationship between them and that the heart of morality is therefore respect for persons."

In the words of **Emile Dukheim**, "What is meant by morality as we see it in practice? Certainly it involves consistency; regularity of conduct, what is moral today must be moral tomorrow."

Moral education is a never ending process. Every individual and society goes through it. It has to be recognized that this cannot be put in a box, labelled and pulled out to be used as and when required by moral educators.

So, in a way, we must each make sense of shifting sands of morality. Although, we can look to guides such as parents, teachers and priests eventually we must try to curve out our own moral sense. Generally, we must become our own moral educators.

NEED AND IMPORTANCE OF MORAL EDUCATION

Oftenly we hear people around us grumble that the world is in every bad shape. There is much of terrorism, exploitation, corruption, merciless killings, global unrest, mutual hatred, population and total crisis of character.

Now-a-days, the great need of the time is imparting of moral and spiritual education in the school. The main reason behind that is of making the young one courageous, brave and strong to fight the unending list of evils. Only moral oriented education can promote individual and social welfare, love peace, goodwill and understanding.

It is moral oriented educations that impel the individual to utilize atomic energy for the betterment of humanity rather than destruction. The main task of moral

education is to develop, preach and practice social, moral and spiritual values. Pol wing points show the need and importance of moral education.

1. Basis of Humanitarianism: Moral is the basis of humanitarianism. It stands for peace, goodwill and understanding. It helps in fostering the brotherhood of man and unity of the world. Absence of moral education has caused exploitation, Corruption, disaster, selfishness, aggression and hatred in the world. People are becoming soulless and godless creatures there is chaos and disorder. Betterment of the world depends upon moral education. It will eradicate the present ills of the world. It will raise man to high level. it will encourage the policy of live and let live and provide the basis of true humanitarianism. It will replace hatred in love, selfishness in self sacrifice and violence in non-violence

2) Decoration of soul: - Our soul is a part ultimate truth i.e. god. So, it is our duty to keep it pure and perfect and this is possible through moral education. The individual becomes self discipline through such education.

3) Maintaining Harmony: - Moral education creates harmony in al aspects of educational philosophy, it aims at developing the whole man, the complete somato-psychic organism. Thus moral oriented education harmonizes psychological, social and ethical traits. It helps in development harmony between physical and mental structure. It helps in developing a complete man with a sound mind and a sound body.

4) Cultural Development: - Moral education plays an important role in the culture development. Moral education preserves and reinforces culture. Both moral and culture develop hand in hand and influence each other. Morals are the dynamic side of culture and they must have a place in the curriculum.

5) Development of wider Attitude: - Moral education makes a pupil dynamic and enlightens. This developing him a wider attitude towards life. He begins to take interest in social service by sacrificing his selfish motives. Not only this, he comes courageous enough to face the problems of life boldly and solves them to the best of his efforts and intelligence.

6) Development of Democratic Qualities: Moral education helps pupils in develop democratic qualities like liberty, quality, fraternity, justice and cooperative living. It stresses the dignity of the individual and the sacredness of human personality.

7) Sublimation of Instincts: Moral education helps in the sublimation of instincts emotions. It sublimates and redirects our sex instincts into desirable and healthy channel. It is so potent a factor that influences all aspects of human life and society of which he is a part. It develops in pupils the desired social awakening which is essential for progress of individual as well as society.

8) Co-operative Living: - Moral education teaches to live and work co-operatively. Narrow feeling and attitudes are into praised and appreciated by other

9) Resolving Conflicts: In this materialistic age people have more or less materialistic attitude. It has led to different types conflict such as old beliefs and new beliefs, old values of life and new values of life. Thus, there are many social and ethical conflicts. Moral education helps resolving these conflicts

MORAL EDUCATION THROUGH PHYSICAL EDUCATION

The view that physical education has a contribution to make a moral education is riot new. It has to be found in the writing of Plato, a Greek Philosopher who in his writings laid emphasis on the role of physical education in moral development of a child and ultimately in the development of a philosopher ruler. This role has also been in the educational theory of Rousseau. Sports has certainly played a great role in moral education e.g. in South Africa sport the policy of apartheid be i.e. social harted: followed by the Government has been subdued with the help of sports wherein now both black and white players play in the national team. The feeling of mutual brotherhood, cultural exchange, Companionship, fighting spirit and national integration through sports has certainly helped in the moral uprising of the child.

Even so, the idea has never lacked criticism. Which for the most part has been along two lines. First there has been the charge that whatever morality desirable qualities a pupils (Sports person) might dew lop on the playing field or

- 1) **The gymnasium**
- 2) **During dance.**
- 3) **Outdoor pursuits**

It is doubtful whether these are transferred to his or her interpersonal relations in its general 'world.

it has been argued that the morally undesirable qualities (i.e. cynical altitude of 1,t rule a meanness of spirit towards opponents, a tendency to violence), which occur in many competitive sports are likely to be carried over into general life as any virtuous qualities, such negatives of the physical education may be the hindrance in the moral education. However, despite these criticism roles of the physical education as moral education cannot be denied and it can certainly play a significant role in the moral education which is the pre-requisite for healthy and balanced development of the society.

Important Questions

What is meant by moral education? Define it.

Ans. Moral education is an abstract concept. Moral education has no accepted definitions. It has different meanings in different societies. Moral education evolves for each sphere of society and circumstances encountered these. As per the domestic circumstances of small child, it is started early but proceeded at very different speeds. Few important definitions regarding moral education are given below En the words of Bulls -All morality consists relationship between persons that its three concerns are therefore, self, others and the relationship between them and that the heart of morality is therefore respect for persons."

In the words of **Emile Dukheim**, "What is meant by morality as we see it in practice? Certainly it involves consistency; regularity of conduct, what is moral today must be moral tomorrow.

Moral education is a never ending process. Every individual and society goes through it. I has to be recognized that this cannot be put in a box, labeled and pulled out to be used as and when required by moral educators.

Q2. Discuss the need of moral education briefly.

Ans. Oftenly we hear people around us grumble that the world is in every pad shape. There is much of terrorism, exploitation, corruption, merciless killings, global unrest, mutual hatred, population and total crisis of character.

Now-a-days, the great need of the time is imparting of moral and spiritual education in the school. The main reason behind that is of making the young one courageous, brave and strong to fight the unending list of evils. Only moral oriented education can promote individual and social welfare, love peace, goodwill and understanding.

It is moral oriented educations that impel the individual to utilize atomic energy for the betterment of humanity rather than destruction. The main task of moral education is to develop, preach and practice social, moral and spiritual values.

Q3. What is the importance of moral education?

Ans.

1. Moral Development: Moral education is the foundation of character and moral development. It includes in children humility, truthfulness, tolerance, honesty, sincerity,

courtesy, sympathy, fellow feeling, affection, spirit of service and sacrifice which form a noble character of child and develops his personality.

2. Cultural Development: Moral education plays an important role in the cultural development. Moral education preserves and reinforces culture. Both moral and culture develop hand in hand and influence each other. Morals are the dynamic side of culture and they must have a place in the curriculum.

3. Development of Wider Attitude: Moral education makes a pupil dynamic and enlighten. This develops in him a wider attitude towards life. He begins to take interest in social service by sacrificing his selfish motives. Not only this, he becomes courageous enough to face the problems of life boldly and solves them to the best of his efforts' and intelligence.

4. Development of Democratic Qualities: Moral education helps pupils in develop democratic qualities like liberty, equality, fraternity, justice and cooperative living. It stresses the dignity of the individual and the sacredness of human personality.

5. Sublimation of Instincts: Moral education helps in the sublimation of instincts emotions. It sublimates and redirects our sex instincts into desirable and healthy channel. It is so potent a factor that influences all aspects of human life and society of which he is a part. It develops in pupils the desired social awakening which is essential for progress of individual as well as society.

Q4. Give a few points of moral value.

Ans. The few points of moral value are given below.

- (i) Ability to differentiate between right and wrong.
- (ii) Spiritual quest.
- (iii) Quest of truth.
- (iv) Virtues of oneness.
- (v) strong character
- (vi) Mutual brotherhood

Q5. Discuss moral education through physical education.

Ans. The view that physical education has a contribution to make a moral education is riot new. It has to be found in the writing of Plato, a Greek Philosopher who in his writings laid emphasis on the role of physical education in moral development of a child and ultimately in the development of a philosopher ruler. This role has also been in the educational theory of Rousseau. Sports has certainly played a great role in moral education e.g. in South Africa sport the policy of apartheid be i.e. social harted: followed by the Government has been subdued with the help of sports wherein now both black and white players play in the national team. The feeling of mutual brotherhood, cultural

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Even so, the idea has never lacked criticism. Which for the most part has been along two lines. First there has been the charge that whatever morality desirable qualities a pupils (Sports person) might develop on the playing field or

1)The gymnasium

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It is doubtful whether these are transferred to his or her interpersonal relations in its general 'world.

Secondly it has been argued that the morally undesirable qualities (i.e. cynical attitude of the rule a meanness of spirit towards opponents, a tendency to violence), which occur in many competitive sports are likely to be carried over into general life as any virtuous qualities, such negatives of the physical education may be the hindrance in the moral education. However, despite these criticism roles of the physical education as moral education cannot be denied and it can certainly play a significant role in the moral education which is the pre-requisite for healthy and balanced development of the society.

Q6. Enlist the point which show the need and important of moral education?

Ans. 1. Basis of humanitarianism

- 2) Decoration of soul.
- 3) Maintaining Harmony
- 4) Moral Development
- 5) Cultural Development
- 6) Development of wider Attitude
- 7) Development of democratic qualities
- 8) Sublimation of Instincts
- 9) Resolving conflicts
- 10) Co-operative Living

Unit 5 SPORTS AND ENVIRONMENT

10 Marks

- Concept of environment.
- Need of environment in physical education programme.
- Role of individual in improvement of environment for health promotion and prevention of sports related accidents.

SPORTS AND ENVIRONMENT

Introduction

A sport is intimately connected to nature. A healthy environment is essential for healthy sports. For many athletes, it is this intimacy with nature that motivates and inspires them. Sports facilities, events, activities and the manufacture of sporting goods have an impact on the environment. Energy, consumption, air pollution, emissions of green house gases and ozone-depleting substances, waste disposal, wastes use and impact on biological diversity are all issues for the sporting world to address.

Sports and environment play an important role in individual's development. Every educational institution runs a programme of physical education and sports for students with healthy environment. Physical education is an important part of total education process which helps to achieve the goal of education. Environment plays an important role to give perfect start for sports related programme in institution. It is the duty of staff to create a healthy environment for sports.

CONCEPT OF ENVIRONMENT

Anything external to the organism is known as environment. In other words, environment is surroundings. The environment refers to our surrounding whatever we look around is part of our environment.

Some definitions of environment given by eminent personality are given below

In the words of **E.J Ross**, "Environment is an external force which influences us."

In the words of **P. Jisbirt**, "The environment is anything immediately surrounding an object and exerting a direct influence on it."

In the words of **Douglas and Holland**, "A word which describes, in the aggregate all the extrinsic forces, influences and conditions, which affect the life, nature, behaviour and the growth, development and maturation of living organisms."

In the words of **Field and Beeld**, "The environment is everything that affects the individual except his genes."

In the words of **T.D Illial**, "Environment is the field of effective stimulation and interaction for any unit of living matter."

Types of Environment: These are two types of environment

(i) External environment

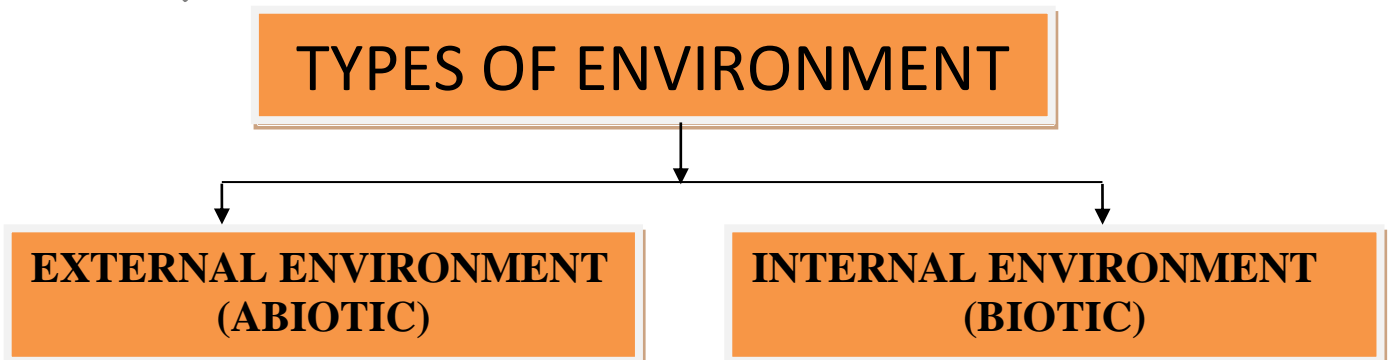
(ii) Internal environment

i) External environment: It is also known as abiotic environment. It consists of non-living things such as soil, climate, temperature, atmospheres, sun radiation etc. It is further divided into two types.

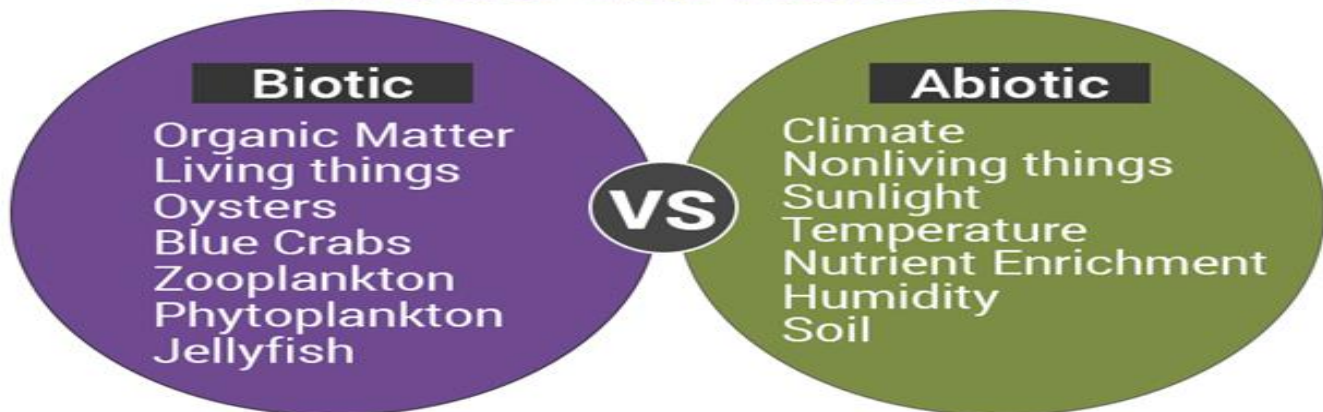
a) Natural environment:- It includes rivers, minerals, rock, soil, temperature, climate, weather of different regions, forests features like mountain, plains, plateau, hills etc Geography of different place, altitude, (Vertical distance from sea level), latitude(Horizontal distance from sea level), water resources etc. Generally it is not possible to change the natural environment but to some extent it can be changed in exceptional cases.

b) Artificial or manmade environment: - It consists of manmade features like roads, building, industries, homes vehicles, dam's bridges, different man made projects etc.

ii) Internal Environment: - It includes all living things such as plants, animals, human beings etc. It is also known as biotic environment



Biotic Vs. Abiotic



NEED. OF ENVIRONMENT IN PHYSICAL EDUCATION PROGRAMME

In modern times, the whole environment has become degraded or polluted due to population explosion, deforestation, industrialization and several other factors that have started threatening our very existence on earth. In fact man himself is responsible for all the environment hazard and it is high time to take immediate steps to protect individual health,

Just as a plant needs proper environment to grow into a tree, our future sportsmen need healthy environment of games and sports facilities and programmes for blossoming into future champions. The basic requirements or need of a healthy environment for providing health programmes of physical education are

- 1) **Coaches and physical teacher:** - Physical education teacher and coaches must carefully consider and choose the proper environment for their trainees. They must select such sports programmes that are developed and organized to enhance the emotional, physical, mental, social and educational well being of sports person.
- 2) **Weather:** -The programme of physical education consists of heat, cold, humidity, quality of air altitude etc. Along with these elements there are some other elements of physical education programme such as condition of the play ground/courts, quality of sports equipment and facilities like drinking water and urinals etc.
- 3) **Community influence:** Popularity and love of sports in communities promote programmes of physical education in that community)It is been that sporting traditions in a community work as a great motivations force for its members to carry on that tradition For example, the love of football in Bengal had made foot ball traditional

games of a that state. The availability of experienced and trained sportsmen in a community often helps in producing more sportsmen. Therefore, efforts should be made to create a sporting environment if it is found lacking in such activity or programmes.

4) **State Patronage:** Creation of proper environment for physical education programmes in a state is also important for raising the standard of sports. Apart from providing facilities and equipment for physical educational activities, a state by organizing training camp, state competition, arranging tours and giving incentives or awards to sportsmen can create an environment for the promotion of sports

5) **Environment conditions do not remain the same always.** They are subject to change. Changes have taken place in our social environment leading to changes in our thoughts and sporting activities. A significant change in the popularity of certain games and sporting activities has taken place in recent times. We need to keep this trend alive to improve our sports environment.

6) **Provision of Proper Facilities:-** The facilities needed for a healthy environment for carrying out the programmes of physical education include provision of playfields, courts, gymnasium, swimming pools, sports coaches, physical education teachers and variety of equipment and apparatus different types of activities It is said that "Give the child a ball and he will start playing with it." This statement clearly shows the importance of providing proper facilities and equipment for promoting Physical Education activities. Lack of proper facilities is the main factor that is hindering our progress in sport

7) **Parental Help' and Encouragement:** Interests, inclination and attitudes of families in gaps and sports exert a great influence in the promotion of sports. It is found that children those parents and families encourage them to take part in sports often achieve excellence in some sports. In such cases the financial help and encouragement of parents make a significant contribution in their success.

ROLE OF INDIVIDUAL IN IMPROVEMENT OF ENVIRONMENT FOR HEALTH PROMOTION

Pollution of environment is a big cause of many health problems. If there is any more delay to control the pollution in environment, then our life leads to accidents, hazards, epidemics, diseases and illness etc. Environment cannot be improved individually but it is a collective efforts

Following ways are adopted to improve the environment.

1) We should improve the environment by using eco-friendly machine and gadgets.

- 2) We can also improve the environment by growing and maintaining maximum plants and greenery in our surrounding area.
- 3) We can also improve the environment if we have proper knowledge of diseases, symptoms, preventive steps etc. All the individuals should also be trained to provide first aid to the affected individual or persons.
- 4) All the individuals in society must be practically trained about safety rules and safety measures during disasters like earthquake, flood, fire etc.
- 5) We can educate every individual toward physical education and health education and their importance in our life.
- 6) We can strictly and practically following the principles/rules and regulation for health promotion.
- 7) Proper guidance and counseling related to positive environment should be give to every individual in the society.
- 8) It is also done be regular checking, cleaning and controlling polluting factors like machines, equipments, gadgets etc.

**ROLE OF INDIVIDUAL IN IMPROVEMENT OF ENVIRONEMTN
FOR PREVENTION OF SPORTS REALTED ACCIDENTS**

- 1) **International Agencies:** - International Olympic Committee (IOC) is an international non-governmental nonprofit organization founded in the year 1894. It is the foundation for Olympic movement. The main aim or responsibility of this committee is to supervise the organization of the summer and winter Olympic games
- 2) **Sports facilities:-** All sports facilities must be maintained and frequently inspected for the safety of participants. The safety fences, batting cages, location of water sanitation facilities and emergency medical services should be available. In relations to indoor facilities, proper arrangement of lighting, playing surfaces, hall dimensions need attention. Poor lighting may contribute to accidents due to poor visibility. The playing surface should be cleaned regularly. It should not be slippery. Proper padding on walls near the poles of basketball should be done.
- 3) **Protective Equipments:** Essential protective equipments must be used to sportspersons. These equipments must be of good quality and according to norms.
- 4) **Fitness of sportsperson:** - An individual, who wants to enter in the field of sports should be fit. For the purpose of fitness, he should do general conditioning and sports specific conditioning at entry level. Today it is a well-known fact that you do not play

sports to get fit, you get fit to play sports. Research studies, conducted in this field show that fitness is helpful in preventing accidents in sports field.

- 5) **Climatic conditions:** Generally, sports are conducted under a wide range of climatic condition i.e. heat, cold, humidity and polluted air, etc. It has been observed that a significance percentage of deaths in sports is related to climatic conditions, particularly from heat related problems. Following steps should be taken in extreme conditions of heat, humidity, cold, and polluted air.
- 6) **Skill:** Learning of proper skills of the sports is very significant in avoiding accidents in sports. A well skilled sportsperson has rare chance of accidents.
- 7) **Proper Officiating and Coaching:-** Proper officiating and scientific coaching should be done to reduce the chances of accidents in sports field. During biased officiating rules and regulation are not followed, properly, therefore the chances of accidents are enhanced so unbiased or proper officiating should be done to improve the environment.
- 8) **Doping control.** Use of drugs and steroids should neither be permitted nor be recommended in sports. Those competitors who take drugs in an attempt to increase their performance open themselves to the harmful side effects which drugs can produce. It also disturbs the neuron muscular coordination if a person uses it for long time. So, doping control also act as one of the safety measures to prevent the accident related to sports.
- 9) **Proper medical checkup:** - Proper medical checkup of person should be done before participating in sports related activities or training. It will help the person to know that he is fit for sports activities or not and it's also help to choose a sports according to his capacity. It helps to minimize the accident related to sports.
- 10) **Proper warming up:-** Warm up plays an important role to prevent sports related accident. It increases the body temperature, muscle flexibility and make the body ready for coming stress and improves the performance. So, proper warming up by an individual is essential before participate in sports activities.