

## **CLASS XII - CBSE**

### **PHYSICAL EDUCATION**

#### **1. Goal Setting**

It is a technique to show goal-oriented behavior. When small targets are accomplished, one can move to bigger goals and for achieving them they need to invest extra time budgeting in the daily schedule.

#### **Fun-based training**

The training should be challenging and task-oriented with enough drive and energy. The training methods should involve fun and enjoyment for athletes. Adding creativity and innovation during training and practice session helps in adding motivation for athletes to persist with the continuous demands of training load.

#### **2. Obsessive Compulsive Disorder (OCD)**

Obsessive compulsive disorder is a mental health disorder that affects people of all ages and walks of life. It is a type of mental disorder that causes repeated unwanted thoughts. To get rid of the unwanted thoughts, he/she performs the same task/activity again and again.

#### **Oppositional Defiant Disorder (ODD)**

Oppositional defiant disorder is a set or group of behavioral disorders called disruptive behavior disorders. It is called by this name because children who have these disorders always tend to disrupt those around them. It is one of the most common mental health disorders found in children and adolescents.

#### **3. Following strategies should be taken into consideration to make physical activities accessible for the children with special needs:**

1. Medical check-up
2. Physical activities must be based on interests of children
3. Equipment related to physical activities should be according to the needs of children
4. Specific environment should be provided
5. A variety of different instructional strategies should be used
6. Rules should be modified according to the needs of children with disabilities
7. Children's previous experience must be taken into consideration (Any two)

#### **4. Acceleration Ability :** It is the ability to achieve high speed from a stationary position or from a slow moving position. This ability is important in all games and sports in which maximum speeds are to be achieved quickly such as sprint races, swimming, hockey, football and gymnastics etc.

**Loco-motor Ability:** It is the ability to maintain maximum speed for maximum possible duration or distance. This ability is very significant in sports events such as 100m, 200m, 400m races.

#### **5. Stroke volume** is the amount of blood ejected per beat from the left ventricle. It is measured in ml/beat. Stroke volume increases proportionally with exercise intensity. In untrained individuals the stroke volume at rest remains at 50 to 70 ml/beat.

Cardiac output is the amount of blood pumped by the heart in one minute. It is measured in litre/minute. Cardiac output is a product of stroke volume and heart rate.

6. 1. Changes in shape and size of muscles: Through regular exercise, the shape and size of muscle is changed. In fact, cells of muscles are enlarged which change the shape and size of muscle.
2. Formation of more capillaries: When exercises are done, the color of muscles is changed, because a number of new capillaries are formed for a better efficiency of blood circulation.
3. Muscles remain in tone position: When exercises are done on regular basis then our muscles remain in toned position. Indeed, muscles remain under some degree of contraction. Muscle become firm and maintains a slight, steady pull on the attachments.
4. Control extra fats: Regular exercise controls the extra fat of body. Exercises burn the calories which are taken in the form of fat.
5. Increases food storage: The food storage capacity increases when regular exercises are done. This storage of food can be utilized immediately when it is needed.
6. Non-functioning fibres become active: When we do not any strenuous work, all the muscle fibres of our body do not perform any work. In fact, these fibres do not need to be active. But when we perform exercise regularly, the non-functioning fibres also begin to be active. Consequently, the strength of the body increases, because the total contractile power of the muscles fibres increases. **(Explain any two)**

7. **Sign and symptoms of Sprain**

1. Acute pain in the spot injured.
2. Swelling on the spot.
3. Softness at the spot and pain on touching. **(Any two)**

8. Fartlek is a Swedish word meaning 'speed play'. This is an effective method for the development of endurance. It is a variation of variable pace methods. In Fartlek the change of pace or speed is not pre-planned. It is a type of cross-country running, usually conducted over a hilly terrain. This method was introduced by Gosta Holmer.

9. **Benefits**

1. It is helpful in developing physical and mental balance.
2. It reduces obesity.
3. It cures constipation.
4. It cures digestive problems.
5. It improves body posture.
6. It alleviates sciatica.
7. It is an excellent asana for those who want to enhance their height.
8. It is beneficial in treating hypertension. **(Any two)**

10. Load and adaptation have a relationship of cause and effect. This relationship however is governed by certain rules which are explained below:

1. The adaptation processes are set in motion only when the load is optimum. For achieving adaptation the load must have certain minimum of intensity and volume. If the load is less than the adaptation processes are not started and if the load is too much then recovery processes are delayed considerably.
2. The adaptation is the result of proper cycle of load and recovery. Without proper and adequate recovery the adaptation will not take place.

3. The adaptation takes place faster in case of beginners. But it takes a longer time in case of advanced sportsmen. High level sports men take several weeks or even months to achieve an adaptation.
4. The adaptation to load not only result in improvement of performance capacity but it also leads to increase in the load tolerance ability.
5. Load given to a sportsman only once does not lead to any adaptation. A stable adaptation and increase in performance is achieved only when the load is given regularly for several days or weeks.
6. Adaptation achieved through load is not permanent. If the training is stopped then the organism adapts itself to the lower level of demands. The stability of an adaptation is more if it has been achieved gradually and steadily.

(Any three)

11. Sheldon typed people on the basis of their body structure. This classification is called Somato-types. Sheldon first classification people into several Somato-types, but reduced the classified to the following three types based on the temperament and appearance.
1. **Endomorph** : Such people are characterized by fat belly, love of comfort, love of eating, sociability, slow to react and affectionate, etc.
  2. **Mesomorph** : Such people are muscular, energetic, courageous, dominating, risk taking and love adventure.
  3. **Ectomorph** : They are lean or thin, full of anxiety, over tense, secretive, introverts and like to be lonely besides many other qualities.

## 12. Vajrasana

**Procedure** : it is a meditative asana. Kneel down on the ground with your knees, ankles and toes touching the ground. Your toes should be stretched backwards. Now place your palms of both your hands on the knees. The upper body should be straight. At this time, the breathing should be deep, even and slow. Then expand your chest and pull your abdominal portion inwards.



Vajrasana

### Benefits:

1. It helps in reducing hip fat.
2. It enhances memory power.
3. It cures the problems related to menstruation.
4. It cures mental stress.
5. It strengthens the pelvic muscles.
6. It removes postural defects.
7. It prevents hernia and gives relief from piles.
8. It is the best meditation asana for people suffering from sciatica and sacral infections.
9. It is helpful in curing dysentery, back pain and chest diseases and also helpful for concentration.
10. It gives relief from constipation, acidity and increases digestive process.

**Contraindications:**

1. A person suffering from joint pain should not perform Vajrasana.
2. The individuals who have and spinal column problem should not perform Vajrasana.
3. The individuals who have some difficulty in movement should practice Vajrasana with a lot of care.

- 13. Meaning of First Aid :** First aid is the first help which is given to the wounded or accident victim before the arrival of the doctor. In other words, "It is an immediate and temporary care given to a victim of an accident or sudden illness before the services of a physician is obtained".

**Objectives of First Aid :** the following are the objectives of first aid.

1. To preserve life
2. To alleviate pain and suffering
3. To prevent the condition from worsening
4. To promote recovery
5. To procure early medical aid

**(Explain any two point)**

**14. Types of Coordinative Abilities:**

1. **Orientation Ability:** It is the ability to determine the position of the body and its parts in time and space in relation to gravity, moving objects like ball, opponent, partner and playing field etc. This ability depends on functional capacity of sensory organs like eyes and kinesthetic sense organs etc.
2. **Coupling Ability:** It is the ability to combine the movements of different body parts for performing perfect sports movements. For example in boxing, the movements of hands, head, trunk and feet are essential to couple to achieve a certain goal.
3. **Reaction Ability:** It is the ability to react immediately or quickly and effectively to a signal. It is of two types:
  - i. **Simple Reaction Ability :** It is the ability to react immediately or quickly in already determined manner to a well-known signal. E.g., the reaction of a runner in the start of sprint races is already known to the runner.
  - ii. **Complex Reaction Ability :** It is ability to react immediately or quickly and accurately to undermined or unexpected signals. E.g. facing a ball in cricket by a batsman.
4. **Balance Ability:** It is the ability to maintain balance during the complete body movements and to regain balance quickly after the balance disturbing movements. It can also be defined as the ability to control the body's position, either in stationary position or while moving. This type of ability is requiring in most of the games and sports.
5. **Rhythm Ability:** It is the ability to observe or perceive the rhythm of a movement and to do the movement with the required rhythm. In gymnastics or figure skating, the sportsperson has to observe an external rhythm, given in the form of music and to express it in his movements.
6. **Adaptation Ability:** It is the ability to adjust or change the movement effectively on the basis of changes or anticipated changes in the situation. The change in situation can be expected one or can be sudden or unexpected one.
7. **Differentiation Ability:** It is the ability to achieve a high degree of accuracy and economy of separate body movements and movement phases in a motor action. The high level of this ability depends on movement experience and the degree of mastery over motor action.

**(Explain any three)**

### 15. Big Five Personality Theory

The big five factors of personality are the five main domains which define human personality and account for individual differences. These five domains or dimensions of personality are considered to be the fundamental traits that make up an individual's overall personality. The big five traits of personality are described below:

1. **Openness** : Persons who like to learn new things, new concepts and enjoy new experiences usually remain on the top in openness. Openness includes traits like being imaginative, insightful and having a variety of interests. People who are high in this trait tend to be more adventurous and creative.
  2. **Conscientiousness** : persons who have degree of conscientiousness are reliable and prompt. Such persons remain organized, systematic, laborious and complete in all respects.
  3. **Extroversion** : Extroverts get their energy from interacting with other individuals, whereas introverts get their energy from within themselves. Extroversion includes the traits of being energetic, talkative and assertive.
  4. **Agreeableness** : Such individuals are friendly, cooperative, compatible, kind and gentle. Persons with too agreeableness may be more distant or aloof. They are kind, generous, affectionate and sympathetic.
  5. **Neuroticism** : Neuroticism is also called emotional stability. This domain or dimension relates to one's emotional stability and the degree of negative emotions. Persons who have high neuroticism usually experience emotional instability and negative emotions. Such individuals remain moody and tense.
- (Explain any four)**

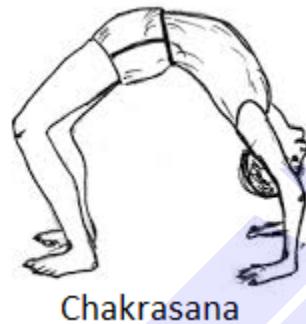
### 16. Physiological Factors Determining Speed:

1. **Mobility of the Nervous System** : Our muscles contract and relax at maximum possible speed such as in sprinting events. The rapid contraction and relaxation of muscles is made possible by rapid excitation of the concerned motor centres. This is called the mobility of the nervous system. The nervous system can maintain this rapid excitation and inhibition only for a few seconds after which the excitation spreads to the neighboring centres causing tension in the entire body. This results in decrease in speed. The mobility of the nervous system can be trained but only to a very limited extent. In fact, speed is determined to a great extent by genetic factors.
2. **Muscle Composition** : The muscles, which have more percentage of fast twitch fibres contract with more speed in comparison to the muscles which have lower percentage of fast twitch fibres. In fact, the muscles composition is genetically determined and cannot be changed by training. Different muscles of the body have different percentage of fast twitch fibres. So, different parts of body have different speed performances.
3. **Explosive Strength** : For every quick and explosive movement, explosive strength is indispensable. It depends on muscles composition, size, coordination and metabolic process. Except muscles composition, the remaining factors can be improved through training which ultimately improve the speed up to limited extent.
4. **Flexibility** : Up to some extent, flexibility also determines the speed. In fact, good flexibility allows maximum range of movement without much internal resistance. Flexibility also enables complete utilization of explosive strength.

5. **Bio-chemical Reserve and Metabolic Power** : For maximum speed performance the muscles require more amount of energy at a very high rate of consumption. For this purpose the phosphogen {Adenosine Triphosphate (ATP) and Creatine Phosphate (CP)} stores in the muscles should be enough. If ATP and CP store is less in contracting muscles, the muscle contractions due to insufficient energy supply, become slow after a short time. The energy supply also depends on certain enzymes which increase the metabolic power. The amount of ATP, CP and rate of energy supply can be enhanced by training. Therefore, it can be said that the bio-chemical reserves and metabolic power determine the speed. **(Explain any four)**

17. **Asana which cure Asthma are:**

Bhujangasana, Paschimottanasana, Sukhasana, Chakrasana, Gomukhasana, Parvatasana and Matsyasana



**Procedure** : In this asana, the figure of the body becomes like a chakra, therefore, this asana is called chakarasana. First of all, lie down on your back. Fix your hands firmly on the ground. Then raise the middle portion of your body upwards. Raise it as high as possible, so that your body is in semi-circle position. Then keep your head downwards between your hands. In the beginning, keep this position for one minute and then after some days of practice, do it for 3 to 5 minutes.

**Benefits:**

1. It cures back pain.
  2. It cures any pain in kidneys
  3. It is helpful in removing obesity.
  4. It prevents the problem of hernia.
  5. It stimulates pituitary and thyroid gland.
  6. It cures infertility, asthma and osteoporosis.
  7. It gives relief from stress and reduces depression.
18. **Soft tissue Injuries (closed athletic injury)** : It is an injury to the body without any interruption to the skin. It may result, bleeding between the tissues, which may causes distraction of various under laying structure. The under laying structure are muscles; tendon, ligament, bones, blood vessels and nerves can also damage.

**There are different types of soft tissues injury**

1. **Contusion (Bruise)** :

Contusion is a muscles injury. It is a common athletic injury and it can due to direct pressure to any part of the body. A direct hit with any sports equipment or a direct blow anywhere on the surface of the body, causing bleeding from ruptured small capillaries below the skin, without any breaking of skin, is called contusion.

**Treatment or management of Contusion**

1. The part of the body, which receives the blood, should be treated by RICE or PRICE therapy.  
P – Protection                      R- Rest                                      C- Compression  
I- Ice                                      E- Elevation
2. All the acute movement, ICE therapy should be applied twice in a day and after that heat therapy should be applied. Heat therapy done by infrared and ultra sound.
3. If swelling still occurs, the doctor should be consulted.

**2. Strain**

Commonly it is known as muscle pull. It is the result of stress or force applied on tissues. It can occur anywhere at the muscles or tendons.

**Treatment or management**

1. Immediately RICE should be given.
2. Non steroid anti-inflammatory medicine, we can use to remove the pain
3. After 48 hours heat therapy may be started. It speeds up the healing process. After this, rest is given.
4. The muscles will lose their strength and flexibility so rehabilitation should be done. Activity started gradually.

**3. Sprain**

This is an injury of the ligaments. It occurs due to over stretching or tearing of ligaments.

**Treatment or management**

1. The injured part should be kept in a comfortable position. Do not move the injured part. Show to doctor and follow medical advice.
2. In case of mild sprain, Application of ice compression should be given 3 to 4 times in a day for three days and cover the affected part by elastic crepe bandage after treatment.
3. After three days, heat therapy should be given. Application of heat is also necessary for the rehabilitation purpose. It is essential to bring out the products of inflammation, so infrared rays or short wave diatherapy should be used.

**4. Abrasion**

It is a skin injury. It is a superficial (not deep) injury of skin or mucous membranes due to rubbing or scraping. It is normally a minor injury but can be serious if some foreign matter is struck in it.

**Treatment or management of Abrasion**

1. Clean the area with water and soap.
2. Take immediate medical assistance if some foreign material is struck deeply in the wound. Foreign material should be removed.
3. Clean and apply antibiotic ointment.
4. Cover the wound lightly during daytime. Uncover it at night.

**5. Laceration**

Laceration is an injury to living tissue (especially an injury involving a cut or break in the skin). It is the cut over the skin caused due to severe impact of an object or due to its sharp edge.

**Treatment or management of Laceration**

1. First of all control bleeding. To stop bleeding put pressure directly on the injured area.
2. Once bleeding has stopped, wash the injured area with warm water and mild soap.
3. Use antiseptic ointment.
4. If the affected person requires stitches go to the doctor.

**6. Incision**

It is a surgical cut made in skin or flesh. Sometimes it may occur due to sharp edged objects of sports equipment's or spikes etc. Sometimes, arteries or veins may be cut. Blood usually comes out freely from incision.

**Treatment or management of Incision**

If the wound is not deep, let the blood come out. In this process, germs also come out with the blood. Such wounds should be cleaned with iodine, tincture or spirit. Then after placing a piece of cotton on the wound, a bandage should be applied. In such process, dirt should not enter into the wound. In case of excessive bleeding, the bandage should be kept tight. If the wound is too deep, a doctor should be consulted immediately. **(Explain any four)**