

CBSE Test Paper 05
CH- 12 Training in Sports

1. Differentiate between aerobic and anaerobic activities.
2. What do you mean by static strength?
3. Suggest any two Isometric exercises for shoulder region.
4. What is static strength?
5. What do you mean by sports training?
6. What do you mean by Flexibility?
7. What do you mean by pace race or runs?
8. What is strength? What are the different types of strength?
9. Define strength. Explain the details of strength training methods with the advantages and disadvantages of each.
10. Explain the methods of developing flexibility.

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Answer

1. (i) The term aerobic means ‘with oxygen’. Any physical activity which requires oxygen intake is an aerobic activity and the term anaerobic means ‘without oxygen’ in such activities the demand for oxygen is more but supply is less.
(ii) Intensity of activity is very high in anaerobic whereas it differs in aerobic activity.
2. Static strength:- It is also called as isometric strength . it is the ability of muscles To work/act against resistance. This type of strength is not seen directly. it is measured by an dynamometer.
3. Two Isometric exercises are:
(i) Pushing against the wall.
(ii) Hang on horizontal bar with flexed arms
4. Static strength:- It is also called as isometric strength . it is the ability of muscles To work/act against resistance. This type of strength is not seen directly. it is measured by an dynamometer.
5. "Sports training" is a planned and controlled process in which, for achieving a goal, changes in complex sports motor performance, ability to act and behavior are made through measures of content, methods and organization.
6. It is ability of joint to move to maximum range. Flexibility of individual varies from joint to joint due to many reasons like structure of joint, attachment of ligaments and tendon of joint, surrounding muscle etc. It is of two types an Active (to do the movement without external help and Passive (to the movement with internal help) flexibility.
7. pace run or races- A competitive pace race is a timed race in which the objective is not to finish in the least time, but to finish within the prescribed time and in the best physical condition. In some races, the prescribed time is very narrowly defined and the winner is the competitor who finishes closest to the prescribed time. Complete recovery is ensured between two repetitions. This means to running the whole

distance of a race at a constant speed. In this the athlete runs the race with uniform speed.

8. **Strength** it is the ability of muscles to overcome resistance. It is the ability of an individual to work against resistance, e.g. various throws and jump events, swimming etc.

Types of strength are :-

- i. Static Strength
- ii. Dynamic Strength

Dynamic Strength 3 types -

- Maximum Strength
- Explosive Strength
- Strength Endurance

9. **"Strength is the ability of our muscles to overcome resistance."**

We use the following methods of strength development:-

- i. **Isometric Exercises** 'Iso' means 'constant' and 'metric' means 'length' An isometric contraction occurs when there is tension on a muscle but no movement is made, causing the length of the muscle to remain the same.

Advantages

- Develops static strength.
- Needs less time.
- Can be performed anywhere because no equipment is required.

Disadvantages

- Muscles gain most strength at the angle used in the exercise.
- Avoid if you have heart problems as they cause a rise in blood pressure due to a drop in blood flow to the muscle during the contraction.

- ii. **Isotonic Exercises** Isotonic exercise is a form of exercise which involves controlled contraction and extension of muscles and mobilisation of the joints around those muscles.

Advantages

- Relatively inexpensive

- Broad range of exercises
- Ability to exercise all major muscle groups

Disadvantages

- Uneven force throughout each exercise.
- Exercises may not fully strengthen each muscle group

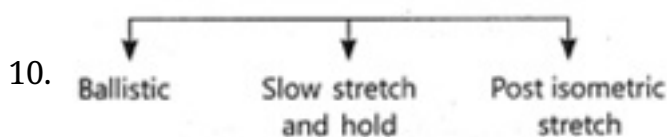
i. **Isokinetic Exercises** Isokinetic exercises are performed on specially designed machines. These exercises were developed by **Perrine** in **1968**. In these exercises, there is movement along with continuous tension both flexion and extension muscles.

Advantages

- With the help of isometric exercises, maximum muscular contraction can be achieved as opposed to isotonic exercise, which is also known as weight training.
- The isometric workout is faster. Each body part can be done in as little as a minute, presuming a few seconds rest between sets.
- One can increase strength with the help of isometric exercises.

Disadvantages

- Isometric exercise does not pump much blood into the muscles as compared to weight training, thereby potentially reducing muscular endurance.
- The static contraction can decrease the speed of the muscle response. This would, in turn, slow down your athletic performance.



Methods of flexibility development: For the improvement of flexibility stretching exercises are used. These exercises can be done in three ways.

Methods of flexibility

i. **Ballistic method:** Ballistic method is the oldest form of doing stretching exercise. In this method a joint is stretched rhythmically to its maximum range. The stretching movement is done with a swing hence, the name is ballistic method. When using this method, the muscles remain in state of optimum stretch for a fraction of

second and as a result large number of repetition are necessary to ensure optimum stimulus duration for improving flexibility. It is advisable to use this method after passive and static flexibility has been improved.

- ii. Slow stretch and hold method: In this method the joint is slowly stretched to the maximum limit and is held there for a few seconds before returning to the original position. For best effect the joint must be held in a state of maximum stretch for 5-8 seconds. To begin with the joint should be stretched and then brought back to original position without any phase of holding.

This method has been found effective for improving passive flexibility which forms the basis of active flexibility. Help of a partner should be taken in this method.

- iii. Post iso-metric stretch: This is a new method of doing stretching exercise and it is based on the principle of proprioceptive neuro-muscular facilitation. According to this principle, if a muscle is contracted maximally for a few seconds then after the contraction it remains for a few seconds in a state in which it given very low resistance to any stretch stimulus. In this method a muscle is first contracted Iso-metrically for 6-7 second. After this the muscle is gradually stretched to its maximum limit and is held in this position for 8-10 seconds. This process is to be repeated 4-8 times for each muscle group.