Chapter-12
Training in Sports
Important Questions

SHORT ANSWER TYPE QUESTION (1 MARK EACH)

Q1. What is speed?

Ans. It is the ability of an individual to cover a unit distance in minimum time.

Q2. What is strength?

Ans. It is the ability of an individual to overcome or act against resistance.

Q3. What is endurance?

Ans. It is the ability of an individual to resists the fatigue for long time.

Q4. What is flexibility?

Ans. It is the ability of an individual to move his or her joints effectively through a full range.

Q5. What is coordinative ability?

Ans. It is the ability of an individual to perform a sequence of movements smoothly and accurately.

Q6. What is speed endurance?

Ans. It is the ability of an individual to perform body movements with high speed under the condition of fatigue upto 45 seconds. Ex. -400 metres race.

Q7. What is strength endurance?

Ans. It is the ability of an individual to exert force for a long period of time.

Q8. What is acceleration?

Ans. It is the ability of an individual to achieve high speed, from a slow moving or stationary position.

Q9. What is explosive strength?

Ans. It is the ability of an individual to overcome resistance with high speed.

Q10. What is reaction ability?

Ans. It is that ability of an individual to react effectively and quickly to a signal.

It is of 2 types –

(1) General reaction ability

(2) Complex reaction ability.

Q11. What is movement speed?

Ans. It is the ability of an individual to do movements in minimum time.

SHORT ANSER TYPE QUESTION [80 TO 90 WORDS] -

(3 MARKS EACH)

Q1. What do you understand by maximum strength?

Ans. It is the ability to apply maximum force by a group of muscles against maximum resistance. Maximum strength is usually not used in majority of sports, it is used in those sports where heavy weight, resistance have to be tackled, like - weight lifting, throwing, roman ring and take off in jump. If the resistance is less, less strength is needed to overcome it. The maximum strength is a motor ability and involves face application during a voluntary movement. It serves as the base of good explosive strength and strength endurance.

Q2. What is the difference between active and passive flexibility?

Or

What are the types of flexibility? Discuss.

Ans. Active flexibility is the ability of an individual to do the joint movement for a longer range without any external help. Active flexibility is always greater than passive flexibility Ex.- Doing any stretching exercise without external help.

Passsive - The ability to do a joint movement with a greater range with an external help of a partner. This flexibility is largely determined by joint structure, stretchebility of the muscle and ligament. Passive flexibility helps in the development of active flexibility.

Q3. What are coordinative abilities in sports?

Ans. Coordinative abilities are those abilities which are stabilized and generalized pattern of motor control. These abilities help the sportsman to do a group of movements with better

quality and effect. Coordinative abilities primarily depend upon the Central Nervous system. In sports, the coordinative abilities are as under:-

(i) Differentiation ability

(ii) Orientation ability

(iii) Coupling ability

(iv) Reaction ability

(v) Balance ability

(vi) Rhythm ability

(vii) Adaptation ability

Methods for Improvement of coordination abilities :-

(1) Practicing physical exercise

(2) Correct and conscious movement

(3) Additional means to improve motor sense.

(4) Variation in exercises

(5) Degree of difficulty

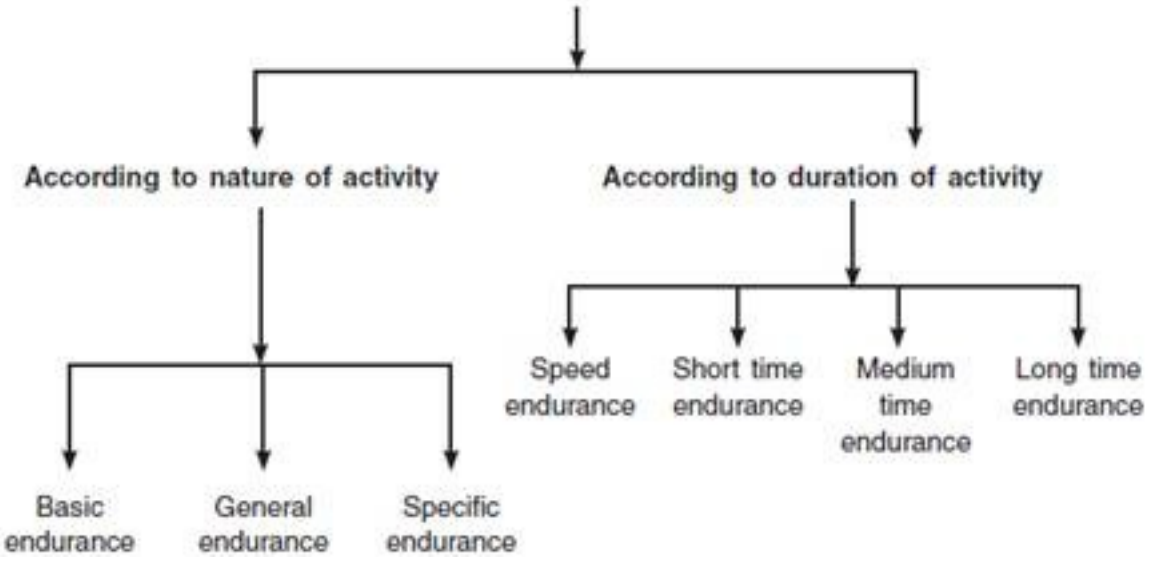
Q4. Briefly explain the types of Endurance.

Or

"Endurance is one of the most important factor for high performance in games & sports." Explain.

Ans. Endurance in sports are of different types. These are as follows -

Endurance



Basic endurance is the ability of an individual to do the movement in which large no. of body muscles involve at slow pace for a long duration such as walking, jogging, swimming at a moderate speed. General endurance is the ability of an individual to do movement under the condition of fatigue.

Specific endurance is the ability of an individual to complete the task without any fatigue. It's requirement is depends upon the nature of activity (games and sports). Requirement of specific endurance of a boxer is different from that of a wrestler.

Speed endurance is the ability of an individual to perform a movement with high speed under the condition of fatigue upto 45 seconds. In **short terms endurance**, the activity lasts from 45 seconds to 2 minutes. Ex. 800m race.

The medium time endurance is needed for 1500m race, lasting from 2 min to 11 minutes.

Long term endurance is needed for those sports which require more than 11 minutes time. Ex. 5000m to 10000m race.

LONG ANSWER TYPE QUESTION [150 TO 200 WORDS] -

(5 MARKS EACH)

Q1. What are the methods for developing strength?

Or

Write the difference between isometric, istonic and isokinetic exercises.

Ans. The word isometric is comprised of 2 words “iso Same” and “metric length”, means when we do these exercises, there is no change in the length of the muscles. In these excercises work done cannot be observed. These exercises require less time and equipment and can be carried out anywhere. These exercises are useful for maintaining strength in case of injury.

Eg : Archery, weight lifting, gymnastic are the examples of isometric movements.

Pushing the wall / Hanging on Pole

Work done = Force × Distance moved

But distance moved is O, therefore work done is zero.

ISOTON IC - EXERCISES :- ‘Iso’ means same and ‘tonic’ means tension. In these types of exercise when we do movements it can be observed directly. The lengthening and shorting

of muscles can be seen and called eccentric contraction and concentric contraction accordingly. Ex. When we throw a ball, jump. run, weight training, these type of contraction occurs.

These type of exercise is widely seen in games & sports. We can do these exercise with equipment or without equipment. These exercise increase the flexibility and length of the muscles and are good for conditioning in sports.

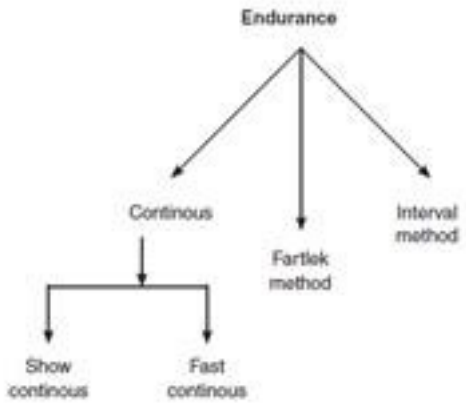
ISO-KINETIC EXERCISES:- 'ISO → same' and 'kinetic → motion'. These exercises were introduced by J.J. perrine in 1968. These exercises are done by specially design machine and are combination of isotonic and iso-metric exercises. These exercises develop strength of muscles. These type of movements are usually not applied in games and sports except water sports, skating, climbing, running etc.

Q2. Explain the methods to develop endurance.

Or

Differentiate the continuous method, interval method and farlek method.

Ans. Endurance has a great importance in games and sports. Following are the methods to develop endurance.



Continous method - In this type of method, the exercise is done for a long duration without taking rest. We do the exercise for a long duration, so the intensity of work is low. The heart rate during the exercise for a sportsman should be between 140-160 beats per-minutes. For fast continous method the heart rate of an athlete should be increased about 175-180/minute.

Fartlek method :- It is another method to develop the endurance ability. This method was developed by a Swedish coach "Gosta Holmer" in 1930, so it is also known as "Swedish Play" or "Speed Play" (Fartlek means speed in swedish). In this method the athlete changes his/her pace, himself/herself according to surrounding (hills, rivers, forest, mud etc.)

This method helps in development of strength and endurance of the sports person. Athelete changes his/her speed according. So it is self - disciplined in nature. The heart-rate fluctuate between 140-180 beats/ minute. Farllek training involves varying our pace throughout our run, alternating between fast and slow pace. Fixed distance in fixed time by variable type of movement/pattern/place of running.

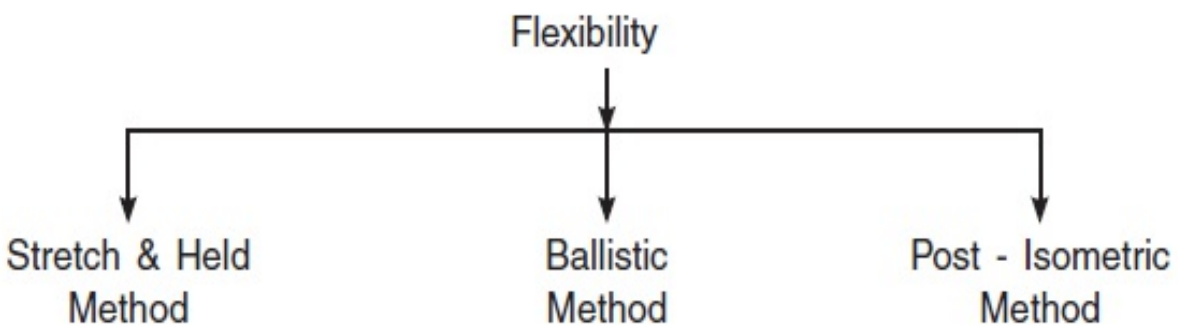
Interval method - This method is very effective for developing endurance for track runners. intervals are given to the athelete in between the repetition for incomplete recovery. The recovery period for athelete varies from person to person. The heart rate should go up to 18 beats/min. And when the heart rate comes down to 120-130 beats/min, again the repetition / work starts. The training load should be given again after checking the heart - rate of the athelete.
Activity - Active Rest - Activity - Active Rest - Activity
[Rest = Recovery]

Q3. What are the methods to develop/improve flexibility? Explain

Or

What is the difference between ballistic method and Post - Isometric Method?

Ans. To maintain feasibility in games and sports, stretching exercises should be done. By following methods, one can improve their feasibility.



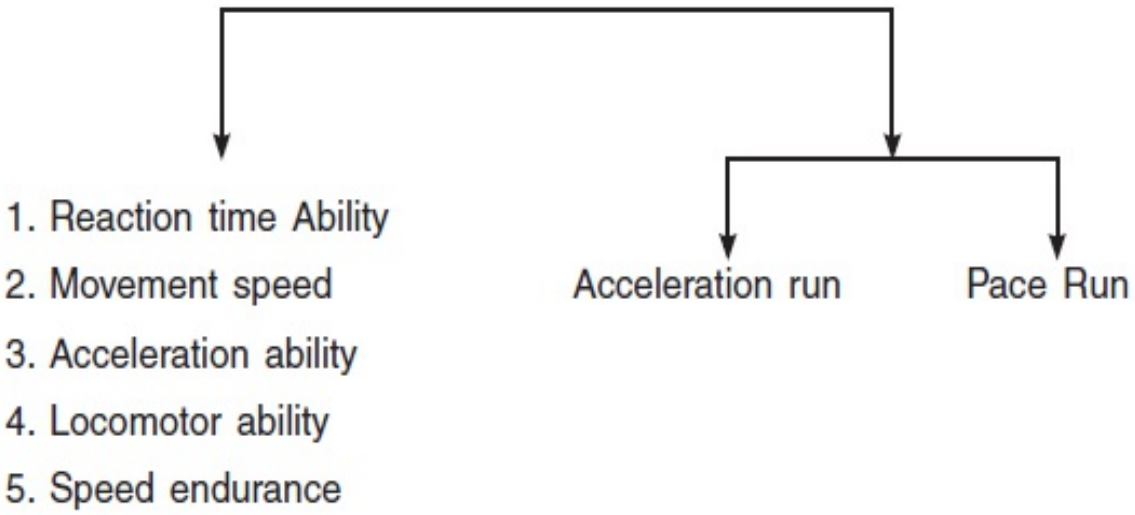
(1) Stretch & hold methods - We stretch our joints to maximum limit and hold it for a few seconds before returning to the initial phase. The holding period must be not more than 3 to 8 secs. This method is also used for improving passive flexibility.

(2) Ballistic method - In this method the stretching exercises are done in a swing, so this is called the ballistic method. A proper warm-up should be done before these exercises. Due to overstretching of the muscle, there may be an injury. The stretching exercise can be done in a rhythm.

(3) Post - isometric method - This method is based on the principle of proprio-ceptive neuro - muscular facilitaion means, if a muscle is contracted maximally for a few seconds, then after the contraction it remains in a static position for a few seconds for 6-7 seconds and gives very low resistance to that stretch. The duration of the stretch should be increased upto 8-10 second and repeated 4-8 times for each muscle group.

Q4. Briefly explain any two methods for improving speed write down the factors determining speed?

Ans.Methods for Improvement of speed



Two methods for developing speed are -

(1) Acceleration Run - Acceleration run are usually used to develop speed indirectly by improving explosive strength, technique, flexibility and movement frequency. It is the ability of a sprinter to achieve high speed from a stationary position. For direct improvement of

acceleration speed a sprinter should do 25-30 metres sprints of 6-12 times. The maximum speed should be achieved within 5-6 seconds. Sufficient intervals should be provided

between the repetition.

(2) Pace run - Pace run means sunning the whole distance with a constant speed. Generally 800 m and above races are included in pace races. An athelete can run a distance of 300 m at full

speed but in longer races such as 800 m or above. he must reserve his energy by reducing the speed.