CBSE Test Paper 02

CH- 06 Test and Measurement in Sports

1. Enlist the test for senior citizen by Rikli and jones.
2. What is a test in sports?
3. What do you mean by motor fitness?
4. What are the advantages of Harvard step test?
5. Find out the purpose of Sit & reach test.
6. Discuss the administration of Rockport one mile test?
7. Explain the Rockport Test.
8. How can you measure recovery phase of an Individual or measurement of cardiovascular fitness?
9. Write in detail about Barrow's Motor Ability Test to measure motor fitness components.
10. What do you know about Harvard Step Test? Explain its procedure and administration.

CBSE Test Paper 02

CH- 06 Test and Measurement in Sports

Answer

1. a. Chair stand test
   b. Chair sit and reach test.
   c. Back scratch test
   d. Six minute walk test.
   e. Eight foot up and go test
   f. Arm curl test.

2. In scientific terms, test means an instrument to be used for measuring anything. It may be running, walking etc. (for fitness testing)

3. Motor fitness refers to the capability of an athlete to perform effectively at his particular sport. Motor fitness can also be defined as a person's ability to perform physical activities.

4. The advantages are:

   a. Minimum equipments are required for conducting this test.
   b. It requires minimal cost.
   c. It is simple to set up and conduct.

5. The sit and reach test is a common measure of flexibility, and specifically measures the flexibility of the lower back and hamstring muscles. This test is important as because tightness in this area is implicated in lumbar lordosis, and lower back pain. This test was first described by Wells and Dillon (1952) and is now widely used as a general test of flexibility.

6. Administration of Test :

   i. Choose a windless day to conduct the test.
   ii. Record your weight in pounds (lbs)
   iii. Walk one mile (1609 mt) as fast as possible.
   iv. Record the time to complete the one mile walk.

v. Immediately on finishing the walk record your heart rate (beats per minute).
vi. Determine your Maximum Cardio-Respiratory ability (VO2) from the calculation given below.

7. The Rockport Test tells us about the aerobic fitness of an individual. In this test, the time taken to finish the walk, exercising heart rate, body mass, age and gender are noted. These parameters are inserted in an equation to predict aerobic fitness. The Rockport Test is performed on a 400-meter standard track. After walking for one mile, the heart rate is measured at the wrist for 15 seconds immediately after completion. The actual heart rate is determined by multiplying that number by 4. The time taken to complete the 1 mile is converted to the nearest hundredth of a minute.

   The formula used to calculate

   VO2 Max is : 132·853 – (0·0769 × weight) – (0·3877 × Age) + (6·315 × Gender) – (3·2649 × Time)

   – (0·1565 × Heart rate)

   Where:-

   - Weight is in pounds (lbs),
   - Gender : Male = 1 and Female = 0
   - Time is expressed in minutes and seconds,
   - Heart rate is in beats/minute
   - Age in years

8. Recovery phase is measured by Harvard step test The formula to measure is :- 100 × test duration in seconds divided by 2 × sum of heart beats in recovery periods

9. Harold M Barrow developed a test of motor ability for high school boys as well as college going people.
   The test comprises three items which are discussed below

   1. **Standing Broad Jump**
      - **Purpose** To measure the explosive leg power.
      - **Material Required** Measuring tape.

- **Procedure** In this test, the student stands behind the restraining line, with feet several inches apart and the toes pointed straight ahead. The student should swing the arms forward, extend the knees and jump forward as far as possible. The distance from take off line to the heel is measured in inches. The final score is based on the best of the 3 trials. * Scoring The final score is the distance in inches from the best jump.

2. **Zig-Zag Run**
    - **Purpose** To measure the agility which determines the balance, coordination and endurance.
    - **Material Required** A stop watch, five traffic cones, floor measuring tape and floor area of 30 feet by 50 feet.
    - **Procedure** Cones are placed on the floor in a zig-zag manner. The examinee or the student stands at the starting point. On the signal 'go', he/she runs the course without touching the cones. If the cones are moved during the run, then the trial is taken again. * Scoring The final score is the time in seconds for three laps.
3. **Medicine Ball Put**
    - **Purpose** To measure arm and shoulders girdle explosive strength.
    - **Materials Required** One medicine ball weighting 6 pounds and one measuring tape.
    - **Procedure** Medicine ball is a solid large ball that is used for doing several exercises. The students are required to throw a 6 pound medicine ball as far as possible. The explosive strength for boys and girls are different due to their different body structure, strength and endurance. Therefore, the size of ball for boys and girls also varies.
    - **Scoring** The final score is the distance of the best put in nearest foot.

10. Cardiovascular fitness is the ability of the heart and lungs to supply oxygen-rich blood to the working muscle tissues and the ability of the muscles to use oxygen to produce energy for movements. Harvard Step Test is a cardiovascular fitness test. It is also called aerobic fitness test.

    Administrative procedure of Harvard Step Test

    i. **Purpose:** To measure the general capacity of the heart and circulatory system for

measurement of cardiovascular efficiency.

ii. **Time Allotment:** 5 minutes

iii. **Facilities and Equipment:** A stop watch, 20" height bench, partners, stethoscope, metronome, score sheet.

iv. **Procedure:** The athlete stands in front of the bench or box. On the command 'Go' the athlete steps up and down on the bench or box at a rate of 30 steps per minute (one second up one second down) for 5 minutes (150 steps). Stopwatch is also Started simultaneously at the start of the stepping. After that the athlete sits down immediately after completion of the test i.e. after 5 minutes. The total number of heartbeats are counted between 1 to 1.5 minutes after completion of the last step. The heartbeats are counted for 30 seconds period. Again the heartbeats are noted for 30 seconds after the finishing of the test. After that third time the heartbeats are noted after 3 minutes of completion of the test for 30 seconds period. The same foot must start the step up each time, and an erect posture must be assumed on the bench.

v. **Calculation of the Score:** The athlete's fitness index score is calculated with the help of following formula:
Fitness index score = (100 $\times$ test duration in seconds) / (2 $\times$ sum of heart beats in recovery periods)