

## **PHYSICAL EDUCATION**

Subject: Physical Education

Semester: 4th

Paper No. & Title: 401

Test, Measurement and Evaluation in Physical Education

Lecture No. & Title: 1

Harvard Step Test

### **SUMMARY**

Harvard Step Test was developed by Lucien Brouha and his associates in 1943 to measure the cardiovascular endurance of college men. The subjects have to perform stepping up and down exercises on 20-inch high bench with the rhythms of the metronome which was set at 120 times per minute. After completing 5 minutes of stepping the subjects are asked to sit on the bench immediately. In case, any subject stops the exercise or slows down the pace of the exercise due to fatigue or exhaustion, his or her duration of exercise performed at the correct pace is noted (in seconds) and is asked to stop and sit down. Exactly one minute after stopping the exercise, the tester starts counting the pulse rate and records the same for the duration from 1 to 1.5, 2 to 2.5 and 3 to 3.5 minutes. The pulse of all the 3 half minute counts recorded are added together and a fitness index is calculated by the formula:

$$\text{Fitness Index(F.I.)} = \frac{\text{Duration of exercise period in seconds} \times 100}{2 \times \text{sum of three pulse counts after exercise}}$$

#### **Norms**

<b>Fitness Index Score</b>	<b>Fitness Condition</b>
Up to 54	Poor condition
Between 55-64	Low average
Between 65-79	High average
Between 80-89	Good
90 and above	Excellent

In case the subject is unable to do the step exercise for full five minutes, Brouha had recommended a direct scoring scheme

<b>Duration of exercise(at correct pace)</b>	<b>Score</b>
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Less than 2 minutes	25
From 2.00 to 3.00 minutes	38
From 3.01 to 3.50 minutes	48
From 3.51 to 4.00 minutes	52
From 4.01 to 4.50 minutes	55
More than 4.50 minutes	59