

## Quiz

- The science of water measurements is termed as:
  - Hydro-meteorology
  - Current metering
  - Hydrometry
  - Hypsometry.
- The velocity of water at the surface of a river is
  - the same as the velocity near the bottom
  - the same as the average velocity in that vertical
  - larger than the average velocity in that vertical
  - is smaller than the average velocity in that vertical
- At which depth, the flow velocity is the same as the average velocity in a vertical
  - At 0.5d from the water surface
  - At 0.6d from the water surface
  - At 0.5d from the bottom
  - At 0.2d from the water surface
- Current meters are used to
  - Measure the electric current produced by a river
  - Measure the electric current during thunder storms
  - Velocity of water in a river
  - Electric current in a battery

## Tutorial

- Describe the various methods of measuring river stage?
- The data pertaining to a stream- gauging operation at a gauging site are given in table below.

Distance form left water edge (m)	0	1.0	3.0	5.0	7.0	9.0	11.0	12.0
Depth (m)	0	1.1	2.0	2.5	2.0	1.7	1.0	0
Average velocity (m/s)	0	0.6	1.4	1.57	1.6	1.05	0.55	0

Calculate the discharge in the river?

- What is the slope-area method of discharge measurement and under what conditions it is used?

## Case Studies

- Write a short note on moving boat method.
- Briefly explain two advanced methods of discharge measurement.
- Imagine that you are in a hilly area and a stream is passing nearby. The channel slopes are steep and during floods, boulders may be seen moving with water. During high flows, water is very turbulent; at times velocities exceed 4.0 m/s. Which method of measurement of discharge would you recommend? Assume any required missing information.