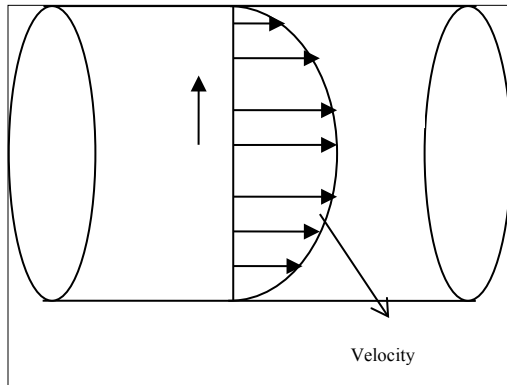


TOPIC

Fluids – Section X – Question 4

QUESTION

The velocity of water out of the pipe of inner radius 0.5 m, varies over the radial location in the pipe and is given below

$$V(r) = 10 \left(1 - \frac{r^2}{0.5^2} \right),$$

where

V is given in m/s, and
 r is in m.

The flow rate in m^3/s of the water out of the pipe is most nearly

- (A) 3.333
- (B) 3.927
- (C) 5.890
- (D) 7.854

HINT

$$Q = \int_0^a 2\pi r V(r) dr$$

CONTRIBUTOR

Autar Kaw