

Q4. For the same angle of incidence, the angles of refraction in three different media A, B and C are 15° , 25° and 35° respectively. In which medium will the velocity of light be minimum?

Answer: As $\mu = \frac{\sin i}{\sin r} = \frac{c}{v}$

or $v = (\sin r / \sin i) \cdot c$

For a given angle of incidence,

$v \propto \sin r$

$v_A \propto \sin 15^\circ$, $v_B \propto \sin 25^\circ$, $v_C \propto \sin 35^\circ$

But $\sin 15^\circ < \sin 25^\circ < \sin 35^\circ$

$\therefore v_A < v_B < v_C$ i.e., velocity of light is minimum in medium A.