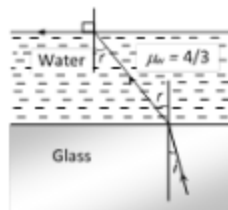


Q7. A ray of light is incident at the glass-water interface at an angle i , it emerges finally parallel to the surface of water, then the value of μ_g would be



A) $(4/3) \sin i$

B) $1/\sin i$

C) $4/3$

D) 1

Solution: B) $1/\sin i$

For glass-water interface

$${}_g\mu_w = \sin i / \sin r \quad (i)$$

For water-air interface

$${}_w\mu_a = \sin r / \sin 90 \quad (ii)$$

$$\Rightarrow {}_g\mu_w \times {}_w\mu_a = \sin i / \sin r \times \sin r / \sin 90 = \sin i$$

$$\Rightarrow \mu_w / \mu_a \times \mu_a / \mu_w = \sin i \Rightarrow \mu_g = 1 / \sin i$$