

➔ The length of the optical path of two media in contact of length d_1 and d_2 of refractive indices μ_1 and μ_2 respectively, is

A) $\mu_1 d_1 + \mu_2 d_2$

B) $\mu_1 d_2 + \mu_2 d_1$

C) $\frac{d_1 d_2}{\mu_1 \mu_2}$

D) $\frac{d_1 + d_2}{\mu_1 \mu_2}$

Correct Answer: A

Solution :

Optical path = μt
path = $\mu_1 d_1 + \mu_2 d_2$

In medium (1), optical path = $\mu_1 d_1$

In medium (2), optical path = $\mu_2 d_2$ ∴ Total