



**RESOLUÇÃO COMENTADA
BAHIANA DE MEDICINA / 2022.1**

QUESTÃO DISCURSIVA – FÍSICA

QUESTÃO 05

Resolução:

A) $n(\lambda) = 1,607 + \frac{0,080 \mu\text{m}^2}{\lambda^2}$

$$n(\lambda) = 1,607 + \frac{0,080 \mu\text{m}^2}{(0,80 \mu\text{m})^2}$$

$$n(\lambda) = 1,607 + \frac{0,080 \mu\text{m}^2}{(0,80)^2 \mu\text{m}^2}$$

$$n(\lambda) = 1,607 + \frac{0,080}{0,80 \times 0,80}$$

$$n(\lambda) = 1,607 + 0,125$$

$$n(\lambda) = 1,732$$

$$n = \frac{c}{v} \Rightarrow 1,732 = \frac{3 \times 10^8}{v}$$

$$v = \frac{3}{1,732} \times 10^8 \Rightarrow v = \lambda \cdot f$$

$$\frac{3}{1,732} \times 10^8 = 0,80 \cdot 10^{-6} \cdot f$$

$$f = \frac{3 \times 10^8}{1,732 \times 0,80 \times 10^{-6}}$$

$$f = 2,165 \times 10^{14} \text{ Hz}$$

$$f = 216,5 \times 10^{12} \text{ Hz}$$

$$f = 216,5 \times \text{THz}$$

B) $n_1 \times \text{sen } \theta_1 = n_2 \times \text{sen } (\theta_2)$

$$1 \times \text{sen } 60^\circ = 1,732 \times \text{sen } (\theta_2)$$

$$1 \frac{\sqrt{3}}{2} = 1,732 \times \text{sen } (\theta_2)$$

$$\text{sen } (\theta_2) = \frac{1}{2}$$

$$\theta_2 = 30^\circ$$