

### Question 23366

$$x_1(t) = A \cos(\omega t) = A \cos\left(2\pi \frac{c}{\lambda} t\right), \quad I = A^2.$$

$$x_2(t) = 3A \cos(\omega t + \delta) = 3A \cos\left(2\pi \frac{c}{\lambda} t + \delta\right), \quad I = 9A^2.$$

$$x(t) = x_1(t) + x_2(t) = A \cos\left(2\pi \frac{c}{\lambda} t\right) + 3A [\cos 2\pi \frac{c}{\lambda} t \cdot \cos \delta - \sin 2\pi \frac{c}{\lambda} t \cdot \sin \delta]$$

$$\text{For } \delta = 0 : x(t) = A \cos\left(2\pi \frac{c}{\lambda} t\right) + 3A [\cos 2\pi \frac{c}{\lambda} t] = 4A \cos 2\pi \frac{c}{\lambda} t, \quad I = 16A^2.$$

$$\text{For } \delta = \pi : x(t) = A \cos\left(2\pi \frac{c}{\lambda} t\right) - 3A [\cos 2\pi \frac{c}{\lambda} t] = -2A \cos 2\pi \frac{c}{\lambda} t, \quad I = 4A^2.$$