

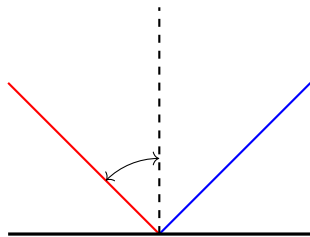
# NCERT Physics 12.10.9 Q

ee23btech11223 - Soham Prabhakar More

**Question:** Light of wavelength  $5000\text{\AA}$  falls on a plane reflecting surface. What are the wavelength and frequency of the reflected light? For what angle of incidence is the reflected ray normal to the incident ray?

(NCERT Physics 12.10.9 Q)

**Solution:**



Since reflection does not change the wavelength/frequency of light, the wavelength( $\lambda$ ) and frequency( $f$ ) remains same:

$$\lambda = 5000\text{\AA} \quad (1)$$

$$f = \frac{c}{\lambda} \quad (2)$$

$$= 6 \cdot 10^{15} \text{Hz} \quad (3)$$

The reflected ray is normal to incident ray for angle of incidence =  $45^\circ$ .