Refraction at plane surfaces

1. The bending of a beam of light when it passes obliquely from one medium to another is known as,
   a. Reflection   b. Refraction   c. Dispersion   d. Deviation
2. During refraction of light which of the following quantity remains constant,
   a. Velocity   b. Intensity   c. Wavelength   d. Frequency
3. If the refractive index of two media are equal, then
   a. No refraction will occur
   b. It will bend away from the normal
   c. Interface will absorb the light
   d. Light will reflect in the same medium

> *During refraction of light **velocity, wavelength and intensity of light** changes but the **frequency** of light remains unchanged*

4. The refractive index of diamond is 2.40. The velocity of light in diamond is,
   a. $1.25 \times 10^8 m/s$ b. $1.50 \times 10^8 m/s$ c. $2.0 \times 10^8 m/s$ d. $2.50 \times 10^8 m/s$
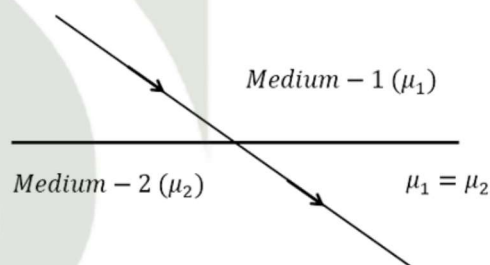
> *The refractive index is the measure of bending of light. Higher the refractive index, larger the bending of light and vice versa.*

<u>Remember:</u> *Two cases in which light does not bend:*

1. Normal Incidence (Two different media with different refractive index)
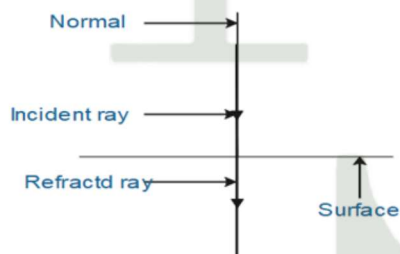
2. Two medium with same refractive index

5. When a ray of light passes into a glass slab from air then,
   a. Wavelength decreases   c. Wavelength Increases
   e. Velocity Increases   d. Frequency decreases
6. The refractive index of medium is greatest for
   a. Yellow light   b. Red light   c. Green light   d. Violet light
7. For what angle of incidence lateral shift is maximum,
   b. 0   b. 45   c. 75   d. 90
8. What is the refractive index of glass, if the ray of light incident with angle 45^0 on the air glass surface make angle of refraction 30^0.
   c. 1.33   b. 1.41   c. 1.45   d. 1.50
9. A ray of light strikes a glass slab of thickness t. It emerges on the opposite face, parallel to the incident ray but laterally displaced. The lateral displacement is.
   a. Zero   b. t c. $\dfrac{t \sin(i-r)}{\cos r}$ d. None