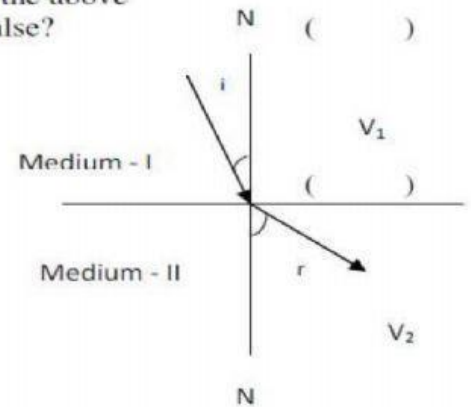


# REFLECTION OF LIGHT ON PLANE SURFACES

- The speed of light in air is  $3 \times 10^8$  m/sec and speed of light in glass is  $2 \times 10^8$  m/sec. Which is rarer medium ( )  
A) Glass B) Air C) Both A and B C) Can't say
- The angle of refraction is equal to angle of incidence, when the light ray is travelling ( )  
A) From Rarer to Denser medium  
B) From Denser to rarer medium  
C) Normal to the surface of separation between two media D) All the above
- Observe the adjacent figure. Which of the following statement is false? ( )  
A) Medium - I is denser  
B) Medium - II rarer  
C)  $V_1 > V_2$   
D)  $\angle r > \angle i$
- In which of the following media refraction will take place?  
A) Opaque B) Transperant C) Both A and B  
D) None
- When refraction phenomenon occurs, then  
A) Colour of light changes  
B) Speed of light changes  
C) Frequency of light changes  
D) Light travels in the same medium



- Observe the following table

Medium	Ice	Diamond	Glass	Water
Speed of light (Km/Sec)	229000	124000	197000	226000

Now answer the following questions:

- Which one is denser either water or diamond and why?
- Which of the above media is rarer? Why?
- What does light do when it passes from glass to water? Why?
- Why do light slows down when it passes from Ice to Diamond?

- The Physical quantity which has no units among the following is ( )  
A) Speed B) Velocity C) Refractive index D) distance
- $n_{21} \times n_{32} =$  ( )  
A)  $n_{23}$  B)  $n_{13}$  C)  $n_{32}$  D)  $n_{31}$
- The refractive index of water is  $4/3$ . The speed of light in water is ( )  
A)  $2.25 \times 10^8$  m/s B)  $2 \times 10^8$  m/s C)  $3 \times 10^8$  m/s D)  $1.90 \times 10^8$  m/s
- The refractive index of water is  $4/3$  and glass is  $3/2$ . The refractive index of glass with respect to water is ( )  
A)  $\frac{8}{9}$  B)  $\frac{9}{8}$  C) 2 D)  $\frac{1}{2}$

- | Material medium  | Ice  | Water | Diamond | Glass | Kerosene | Rocksalt |
|------------------|------|-------|---------|-------|----------|----------|
| Refractive index | 1.31 | 1.33  | 2.42    | 1.5   | 1.44     | 1.54     |

Observe the following table

Now answer the following questions:

- In which of the above material medium, the speed of light is maximum?
  - In which of the above material medium the speed of light is minimum?
  - Arrange the material media in ascending order according to the speed of light in that medium.
- The absolute refractive index of two media 'A' and 'B' are 2 and 1.5 respectively. If the speed of light in medium 'B' is  $2 \times 10^8$  m/s, calculate  
a) Speed of light in medium 'A'  
b) Refractive index of medium 'B' with respect to medium 'A'