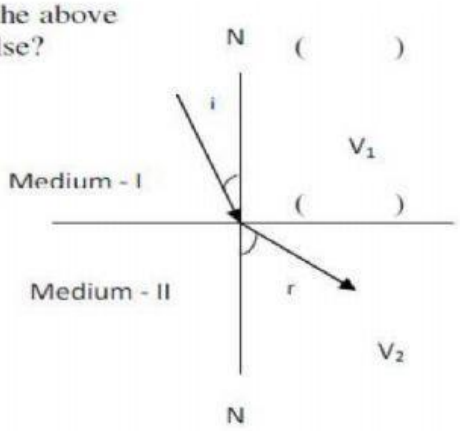
REFLECTION OF LIGHT ON PLANE SURFACES

1. The speed of light in air is 3 x 10^8m/sec and speed of light in glass is 2 x 10^8 m/sec. Which is rarer medium ( )
   A) Glass B) Air C) Both A and B C) Can't say
2. 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
3. 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) $\angle r > \angle i$



4. In which of the following media refraction will take place? ( )
   A) Opaque B) Transperant C) Both A and B
   D) None
5. 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

6. Observe the following table

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

Now answer the following questions:

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

1. The Physical quantity which has no units among the following is ( )
   A) Speed B) Velocity C) Refractive index D) distance
2. $n_{21} \times n_{32} =$ ( )
   A) n_{23} B) n_{13} C) n_{32} D) n_{31}
3. The refractive index of water is 4/3. The speed of light in water is ( )
   A) 2.25 x 10^8m/s B) 2 x 10^8m/s C) 3 x 10^8m/s D) 1.90 x 10^8m/s
4. 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) ½
5. .

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:

a) In which of the above material medium, the speed of light is maximum?
b) In which of the above material medium the speed of light is minimum?
c) Arrange the material media in ascending order according to the speed of light in that medium.

7. 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 x 10^8 m/s, calculate

   a) Speed of light in medium 'A'
   b) Refractive index of medium 'B' with respect to medium 'A'