Class 10 Assignment

Class 10 Assignment 6
Light (1)

1.A ray of light is incident through glass, with refractive index 1.52, on an interface separating glass and water with refractive index 1.32. What is the angle of refraction if the angle of incidence of the ray in glass is 30 °?

2.Refractive index of glass is 1.5. If the speed of light in vacuum is 3 X 108m/s, find velocity of light in medium.

3.If active index of water is 4/3 and that of glass is 3/2. Find the refractive index of glass w.r.t. water.

4.An object at the bottom of a beaker filled with a liquid up to height of 10 cm. If the refractive index of liquid w.r.t. air (aμw) is 4/3, find the apparent depth of the object.

Multiple Choice Questions:

1. The refractive index of a material depends upon
(a) Temperature (b) Wavelength of light
(c) Nature of the material (d) All the above

2. When light travels from glass to water separated by a sharp boundary then it
(a) proceeds undeviated (b) bends towards the normal
(c) bends away from the normal (d) is reflected back

3. A cut diamond sparkles because of
(a) it's hardness
(b) it's high refractive index and small value of the critical angle
(c) it's high refractive index and high value of the critical angle
(d) it's very low refractive index

4.Velocity of light is maximum in
(a) diamond (b) water
(c) glass (d) vacuum

5. Refractive index of glass with respect to air is 1.9. What is the refractive index of air with respect to glass
(a) 1 (b) 1.9
(c) 0.523 (d) 0.776

6. The cause of twinkling of stars is :
(a) periodic bursts of light from the stars
(b) interference of sunlight with the star light
(c) partial absorption of light in the atmosphere
(d) refractive index fluctuation in the atmosphere

7. When a light ray travels from air to water separated by a sharp boundary it:
(a) proceeds undeviated
(b) bends towards the normal
(c) bends away from the normal
(d) is totally internally reflected

8.The sun becomes visible before the actual sunrise and remains visible even after the actual sunset. It is because of
(a) scattering of light
(b) diffraction of light
(c) refraction of light
(d) dispersion of light

9. just before setting, the sun may appear to be elliptical. This happens due to
(a) reflection (b) refraction
(c) dispersion (d) diffraction

10. The refractive index of glass with respect to air is 3/2. The refractive index of air with respect to glass is :
(a) 3/1 (b) 3/2 (c) 2/3 (d) 1/3