INTERNATIONAL INDIAN SCHOOL BURAIDAH

CLASS:XII SUBJECT: PHYSICS

LESSON : RAY OPTICS AND PTICAL INSTRUMENTS

1.Relation between focal length (f) and radius of curvature (R) of a spherical mirror is

(a) R = f/2

(b) f= 3R

(c) f = R/2

(d) f= R/4

2. A convex mirror has focal length 20 cm. If an object is placed 20 cm away from the pole of mirror, then what is the distance between image formed and pole?

(a) 40 cm

(b) 10 cm

(c) 20 cm

(d) At infinity

3. A ray of light of wavelength 600 nm propagates from air into a medium. If its wavelength in the medium becomes 400 nm. The refractive index of the medium is (CBSE 2023)

(a) 1.4

(b) 1.5

(c) 1.6

(d) 1.8

4. A ray of light travels a distance of 12.0 m in a transparent sheet in 60 ns. The refractive index of the sheet is(CBSE 2023)

(a) 1.33

(b) 1.50

(c) 1.65

(d) 1.75

5. In total internal reflection,

(a) light ray travelling through a denser medium is completely reflected back to denser medium

(b) light ray travelling through a denser medium is completely refracted to rarer medium

(c) light ray is partially reflected back to denser medium and

partially refracted to rarer medium

(d) light ray is absorbed completely by denser medium

6. Ray of light transmitted from glass (n = 3/2) to

water (n = 4/3). What is the value of critical angle?

7. Two convex and concave lenses are in contact and having focal lengths 12 cm and 18 cm, respectively. Focal length of joint lens will be

(a) 50 cm

(b) 45 cm

(c) 36 cm

(d) 18 cm

8. Two lenses are kept in contact with powers + 2 D and - 4 D. The focal length of this combination will be

(a) + 50 cm

(c) - 25 cm

(b) - 50 cm

(d) + 25 cm

9. A thin lens of glass (n = 15) of focal length‡10 cm is immersed in water (n= 1.33). The new focal length is

(a) 20 cm

(c) 48 cm

(b) 40 cm

(d) 12 cm

10. An equilateral prism is in condition of minimum deviation. If incidence angle is 4/5 times of prism angle, then minimum deviation angle is

(a) 72°

(b) 60°

(c) 48°

(d) 36°

12. A bi-convex lens of focal length fis cut into two identical plano-convex lenses. The focal length of each part will be

(CBSE 2020)

(a) f

(b) £

(c) 2f

(d) 4f