



Class 12 Physics | Ray Optics And Optical Instruments

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. A concave mirror has focal length -15 cm. Its radius of curvature is:

- A. -30 cm B. +30 cm C. +15 cm D. -7.5 cm

2. An object is at the centre of curvature of a concave mirror. Its image is:

- A. Real and half-size
B. Real, inverted and same size
C. At infinity
D. Virtual and enlarged

3. An object between a concave mirror's pole and focus gives an image that is:

- A. Virtual, erect and enlarged
B. Virtual and diminished
C. Real and inverted
D. At the focus

4. A convex mirror produces for a real object:

- A. Real, enlarged image
B. Virtual, erect, diminished image
C. Virtual, inverted image
D. Real, inverted image

5. For light entering glass from air, which stays unchanged?

- A. Direction always B. Frequency
C. Speed D. Wavelength

6. A medium has refractive index 1.5. Light speed in it is ($c=3\times 10^8$):

- A. 4.5×10^8 m/s B. 1.5×10^8 m/s
C. 2×10^8 m/s D. 3×10^8 m/s

7. Total internal reflection requires travel:

- A. Along the normal
B. From denser to rarer medium above critical angle
C. From rarer to denser at any angle
D. From denser to rarer below critical angle

8. For glass-to-air critical angle C with $n=\sqrt{2}$, C is:

- A. 45° B. 90° C. 60° D. 30°

9. A convex lens has focal length 20 cm. Power is:

- A. +20 D B. +5 D C. -5 D D. +0.05 D

10. Two thin lenses of powers +4 D and -1 D in contact have power:

- A. -3 D B. -4 D C. +3 D D. +5 D

11. An object is 30 cm in front of a convex lens of focal length 15 cm. Image distance is:

- A. -30 cm B. +30 cm C. -10 cm D. +10 cm

12. A concave lens forms an image of a real object that is:

- A. Virtual, enlarged
B. Real and enlarged
C. Real, inverted and diminished
D. Virtual, erect and diminished

13. At minimum deviation in a prism:

- A. Emergent ray is always normal
B. Angle of incidence equals angle of emergence
C. Refraction angles sum to zero
D. Deviation is zero

14. An astronomical telescope in normal adjustment has angular magnification magnitude:

- A. f_o+f_e B. $f_o f_e$ C. f_o/f_e D. f_e/f_o

15. A simple microscope with relaxed eye uses an object at:

- A. Twice the focal length
B. The convex lens's focal plane
C. Infinity
D. The lens's optical centre

ANSWER KEY — check after completing all 15 questions

1.A 2.B 3.A 4.B 5.B 6.C 7.B 8.A 9.B 10.C 11.B 12.D 13.B 14.C 15.B

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper