PYQSide PYQSide.com — free PYQs with solutions Powered by TestBlink

NEET RAY OPTICS AND OPTICAL INSTRUMENTS — REFRACTION AT SPHERICAL SURFACES, THIN LENSES AND LENS MAKER'S FORMULA — PYQS

Max. Marks: 44 **Questions:** 11

Section A (MCQ) — 11 questions

Q.1 In a concave lens, a ray of light emanating from the object parallel to the principal axis of the lens, after refraction : [NEET (UG) 2026]

(1) passes through the second principal focus.

(2) appears to diverge from the first principal focus.

(3) passes through 2F, which is the radius of curvature of the lens.

(4) emerges parallel to the principal axis.

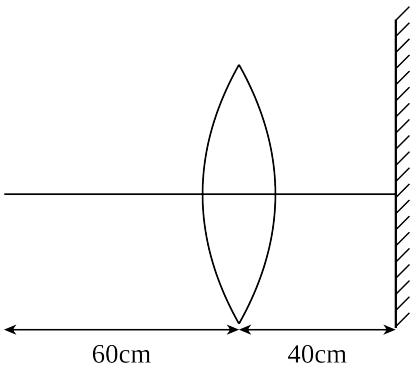
Scan or tap for the full solution

Q.2 A biconvex lens has radii of curvature, 20 cm each. If the refractive index of the material of the lens is 1.5, the power of the lens is [NEET (UG) 2022]

(1) +2 D (2) +20 D (3) +5 D (4) Infinity

Scan or tap for the full solution

Q.3 A point object is placed at a distance of 60 cm from a convex lens of focal length 30 cm. If a plane mirror were put perpendicular to the principal axis of the lens and at a distance of 40 cm from it, the final image would be formed at a distance of - [NEET (UG) 2021]



(1) 20 cm
from the plane mirror, it would be a virtual image.

(2) 20 cm
from the lens, it would be a real image.

(3) 30 cm
from the lens, it would be a real image.

(4) 30 cm
from the plane mirror, it would be a virtual image.

Scan or tap for the full solution

Q.4 When a biconvex lens of glass having refractive index 1.47 is dipped in a liquid, it acts as a plane sheet of glass. This implies that the liquid must have refractive index [AIPMT 2012 (Prelims)]

(1) equal to that of glass

(2) less than one

(3) greater than that of glass

(4) less than that of glass

Scan or tap for the full solution

Q.5 A converging beam of rays is incident on a diverging lens. Having passed through the lens the rays intersect at a point 15 cm from the lens on the opposite side. If the lens is removed the point where the rays meet will move 5 cm closer to the lens. The focal length of the lens is [AIPMT 2011 (Mains)]

(1) 5 cm (2) −10 cm (3) 20 cm (4) −30 cm

Scan or tap for the full solution

Q.6 A biconvex lens has a radius of curvature of magnitude 20 cm. Which one of the following options best describes the image formed of an object of height 2 cm placed 30 cm from the lens ? [AIPMT 2011 (Prelims)]

(1) Virtual, upright, height = 1 cm
(2) Virtual, upright, height = 0.5 cm
(3) Real, inverted, height = 4 cm
(4) Real, inverted, height = 1 cm

Scan or tap for the full solution

Q.7 A lens having focal length f and aperture of diameter d forms an image of intensity I. Aperture of diameter $\frac{d}{2}$ in central region of lens is covered by a black paper. Focal length of lens and intensity of image now will be respectively [AIPMT 2010 (Prelims)]

(1) f and $\frac{I}{4}$
(2) $\frac{3f}{4}$ and $\frac{I}{2}$
(3) f and $\frac{3I}{4}$
(4) $\frac{f}{2}$ and $\frac{I}{2}$

Scan or tap for the full solution

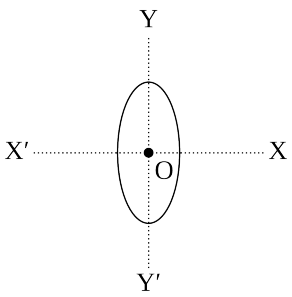
Q.8 A boy is trying to start a fire by focusing sunlight on a piece of paper using an equiconvex lens of focal length 10 cm. The diameter of the sun is 1.39×10^9 m and its mean distance from the earth is 1.5×10^{11} m. What is the diameter of the sun's image on the paper ? [AIPMT 2008]

(1) 6.5×10^{-5} m
(2) 12.4×10^{-4} m
(3) 9.2×10^{-4} m
(4) 6.5×10^{-4} m

Scan or tap for the full solution

Q.9 An equiconvex lens is cut into two halves along (i) XOX′ and (ii) YOY′ as shown in the figure. Let f, f', f'' be the focal lengths of the complete lens, of each half in case (i), and of each half in case (ii), respectively.

Choose the correct statement from the following [AIPMT 2003]



(1) f' = f, f'' = 2f
(2) f' = 2f, f'' = f
(3) f' = f, f'' = f
(4) f' = 2f, f'' = 2f

Scan or tap for the full solution

Q.10 A convex lens is dipped in a liquid whose refractive index is equal to the refractive index of the lens. Then its focal length will [AIPMT 2003]

(1) become zero
(2) become infinite
(3) become small, but non-zero
(4) remain unchanged

Scan or tap for the full solution

Q.11 A bulb is located on a wall. Its image of the same size is to be obtained on a parallel wall with the help of a convex lens. The lens is placed at a distance d ahead of the second wall, then the required focal length will be [AIPMT 2002]

(1) only $\frac{d}{4}$
(2) only $\frac{d}{2}$
(3) more than $\frac{d}{4}$ but less than $\frac{d}{2}$
(4) less than $\frac{d}{4}$

Scan or tap for the full solution

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	3	1	1	4	3	3	3	1	2	2