# Light-Reflection and Refraction

CHAPTER 10

## TRY YOURSELF

## ANSWERS

**1.** Given, angle of incidence, $\angle i = 0°$, according to the law of reflection, $\angle i = \angle r$.

$\therefore$ Reflected ray will also travel along the normal, such that it retraces its own path.

**2.** According to the law of reflection, angle of incidence = angle of reflection.

$\therefore$ Angle of incidence = angle of reflection = $90° - 30°$
$= 60°$

**3.** Object distance = 10 cm; therefore image distance will also be 10 cm from the mirror.

$\therefore$ Distance between object and image = 10 cm + 10 cm
= 20 cm.

**4.** The image is virtual and erect. Object is between pole and focus of the mirror.

**5.** $\frac{\text{Image size}}{\text{Object size}} = 2$

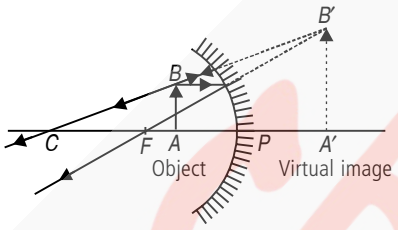
$\Rightarrow$ Image size = 2 × object size = (2 × 1)m = 2 m.

**6.** Focal length = 10 cm, therefore radius of curvature,
$R = 2f = 20$ cm.

Object is placed at centre of curvature means image will be of same size, real and inverted.

**7.** He/she must use concave mirror to get a magnified image.

**8.**




**9.** Refractive index is the ratio of the speeds of light in two media.

**10.** Due to different speeds of light in different media, light ray bends when it travel from one medium to another medium.

**11.** Largest value of refractive index is of diamond ($\mu = 2.42$).

**12.** Any medium with larger value of refractive index is known to be optically denser. Here, among the given two materials carbon disulphide is optically denser than alcohol.

**13.** Incident rays parallel to principal axis, after refraction either converge or appear to diverge from a fixed point on the principal axis, which is known as principal focus of lens.

The distance between principal focus and optical centre of a lens is known as the focal length of the lens.

**14.** Convex lens can be used as a magnifying glass.

**15.** No, it is not true. If an object is placed between principal focus and optical centre then the image will be virtual.

**16.** Power of a lens is defined as the ability of the lens to converge the rays of light falling on it.

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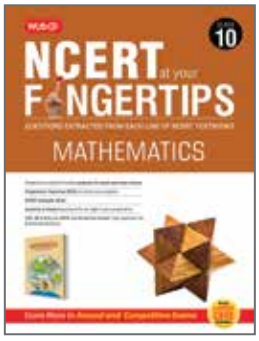



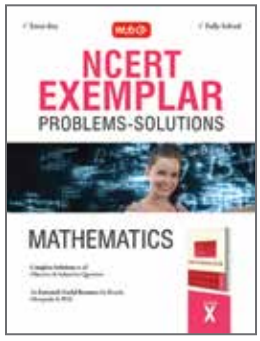



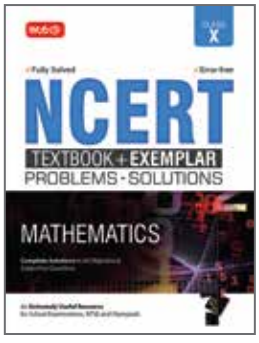


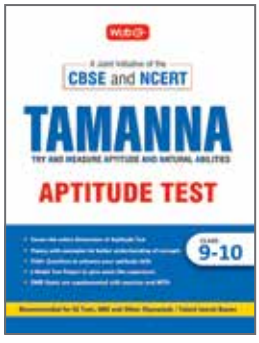


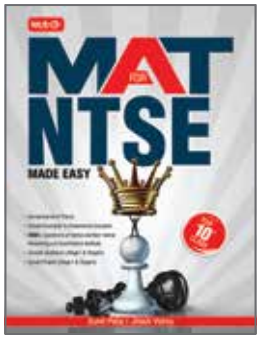


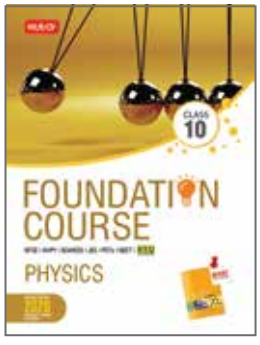


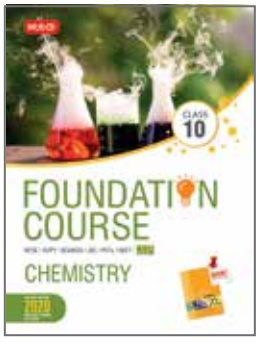


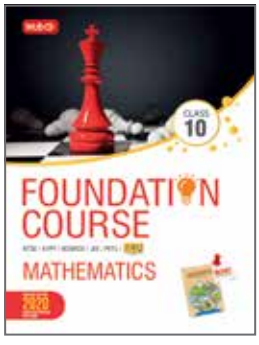


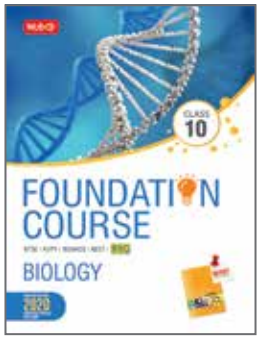




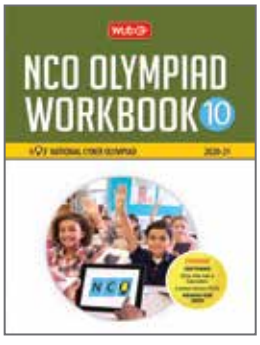


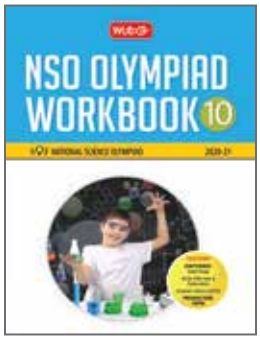


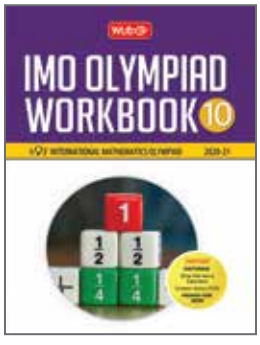


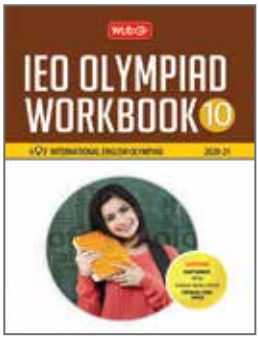


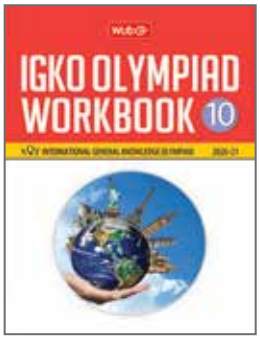


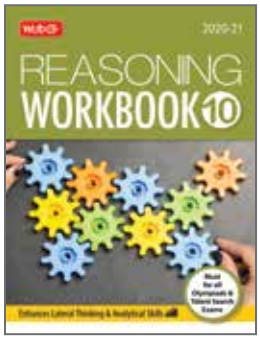


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