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

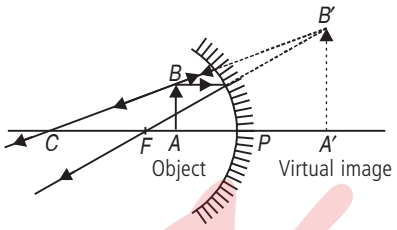
$\Rightarrow$ Image size = 2 × object size = (2 × 1)m = 2 m.

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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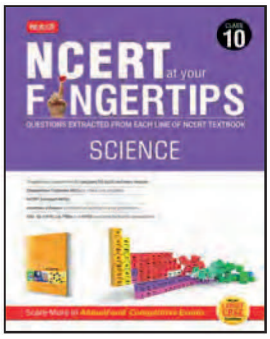

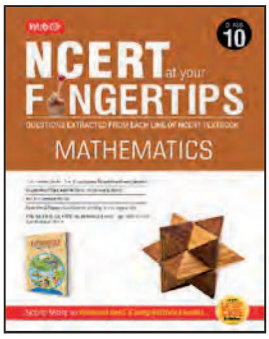

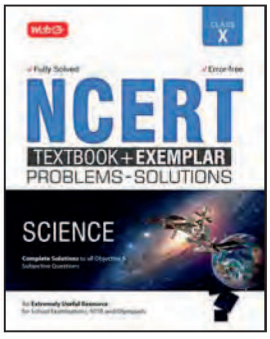

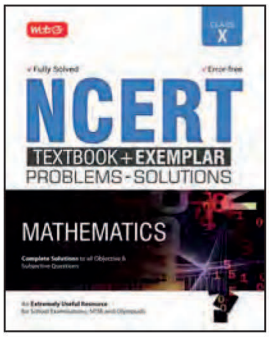

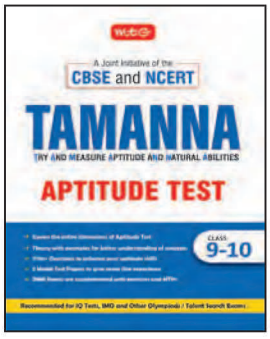

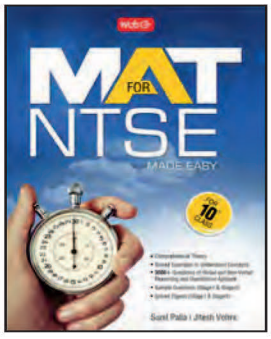

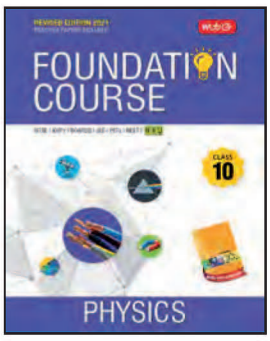

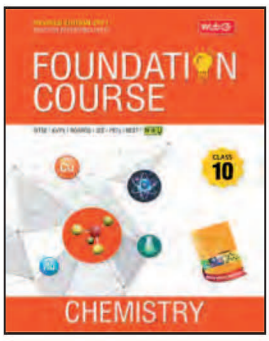

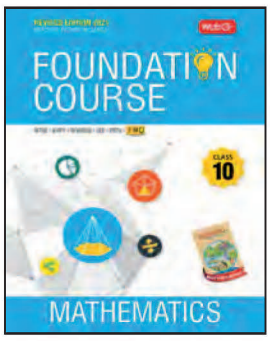

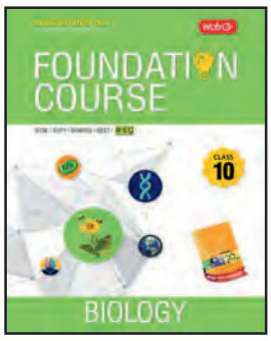

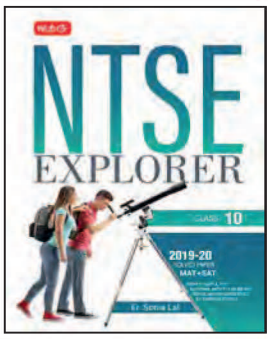

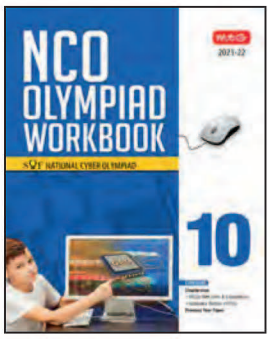

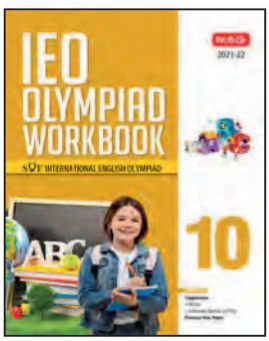

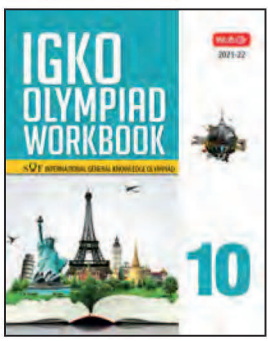

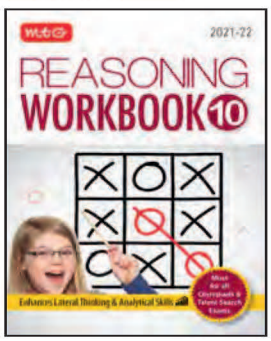

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