# PHYSICS

1. The rear – view mirror of a car is
   (1) plane
   (2) convex
   (3) concave
   (4) none of these

2. An a concave mirror if x_1 and x_2 are the distances of object and its image respectively from the focus, then the focal length of the mirror is
   (1) $x_1 x_2$
   (2) $\sqrt{x_1 x_2}$
   (3) $\dfrac{(x_1 + x_2)}{2}$
   (4) $\dfrac{x_1 x_2}{(x_1 + x_2)}$

3. If a spherical mirror is immersed in a liquid, its focal length will
   (1) increase
   (2) decrease
   (3) remains unchanged
   (4) depend on the nature of liquid

4. A dentist uses a small mirror that gives a magnification of 4. When it is held 0.60 cm from a tooth. The radius of curvature of the mirror is
   (1) 1.60 cm (convex)
   (2) 0.8 cm (concave)
   (3) 1.60 cm (concave)
   (4) 0.8 cm (convex)

5. Which mirror is to be used to obtain a parallel beam of light from a small lamp?
   (1) Plane mirror
   (2) Convex mirror
   (3) Concave mirror
   (4) Any one of these

6. A car is fitted with a convex side view mirror of focal length 20 cm. A second car 2.8 m behind the first car is overtaking the first car at a relative speed of 15 ms^{-1}. The speed of the image of the second car as seen in the mirror of the first one is
   (1) 15 m s^{-1}
   (2) $\dfrac{-1}{15}$ m s^{-1}
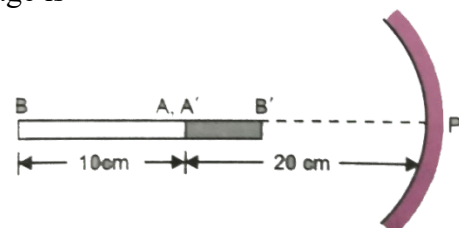   (3) $\dfrac{1}{15}$ m s^{-1}
   (4) 10 m s^{-1}

7. In an experiment to find the focal length of a concave mirror a graph is drawn between the magnitude of u and v. The graph looks like
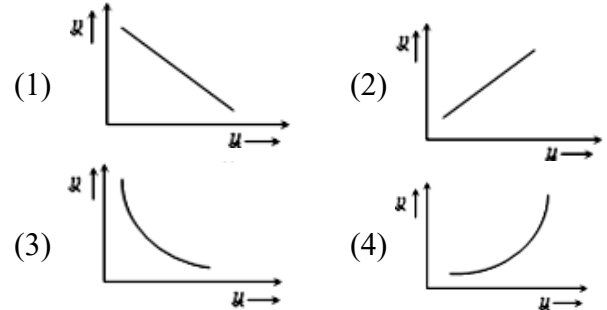
8. A tall man of height 6 feet, want to see his full image. Required minimum length of the mirror will be
   (1) 12 feet
   (2) 3 feet
   (3) 6 feet
   (4) any length

9. Figure shows a plane mirror onto which a light ray is incidenting. If the incident ray is turned by 5° and the mirror by 10°, as shown, the angle turned by the reflected ray is
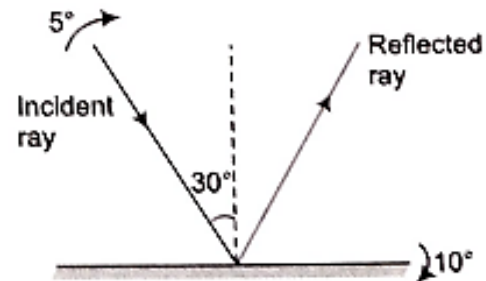
   (1) 15°, clockwise
   (2) 25°, clockwise
   (3) 30°, clockwise
   (4) 25°, anticlockwise

10. A rod of length 10 cm lies along the principal axis of a concave mirror of focal length 10 cm in such a way that its end closer to the pole is 20 cm away from the mirror. The length of the image is

    (1) 2.5 cm
    (2) 5 cm
    (3) 10 cm
    (4) 15 cm