Chapter: 10th
Light- Reflection and Refraction

Q1: The image formed by a concave mirror is observed to be virtual, erect and larger than the object. Where should be the position of the object?

(a) Between the principal focus and the centre of curvature
(b) At the centre of curvature
(c) Beyond the centre of curvature
(d) Between the pole of the mirror and its principal focus.

Q2: You are given water, mustard oil, glycerin and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?

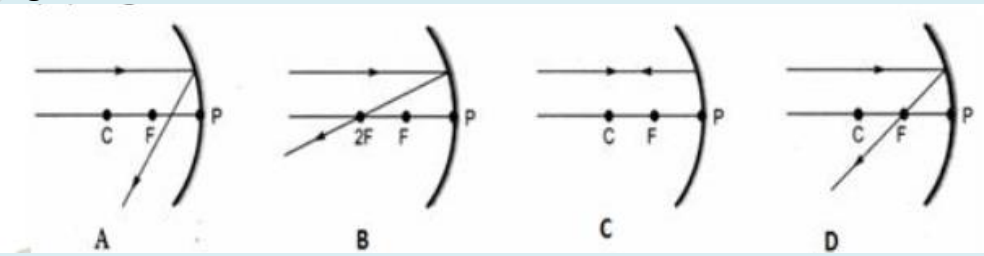
(a) Kerosene
(b) Water
(c) Mustard oil
(d) Glycerin

Q3: The image which is formed behind the mirror

(a) real image
(b) virtual image
(c) blue image
(d) partial image

Q4: Which of the following ray diagrams is correct for the ray of light incident on a concave mirror as shown in figure?

(a) Fig. A
(b) Fig. B
(c) Fig. C
(d) Fig. D



Q5: **Assertion (A):** When a convex lens of power + 2D is held in contact with a concave lens of power - 4 D, the combination has a focal length of -0.5m.

Reason (R): $P = P_1 + P_2$

Q6: **Assertion (A):** The SI unit of power of a lens is dioptre.

Reason (R): The power of a concave lens is positive and that of a convex lens is negative.

Q7: The refractive index of diamond is 2.42. What is the meaning of this statement?

Q8: Why do we prefer a convex mirror as a rear-view mirror in vehicles?

Q9: A doctor has prescribed a corrective lens of power +1.5 D. Find the focal length of the lens. Is the prescribed lens diverging or converging?

Q10: Name the type of mirror used in the following situations.

(a) Headlights of a car.

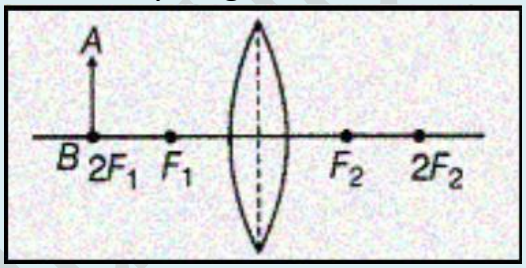
(b) Side/rear-view mirror of a vehicle.

(c) Solar furnace.

Q11: An object 5.0 cm in length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Find the position of the image, its nature and size.

Q12: A ray of light travelling in air enters obliquely into water. Does the light ray bend towards the normal or away from the normal? Why?

Q13: Complete the ray diagram:



Q14: An object of height 6 cm is placed perpendicular to the principal axis of a concave lens of focal length 5 cm. Use the lens formula to determine the position, size, and nature of the image if the distance of the object from the lens is 10 cm.