

Copy down the case study along with the questions and solve them:

Amit, a Class 7 student, was experimenting with lenses in his school lab. He placed a convex lens on a table and shone a light through it. He observed that the light rays converged at a point on the other side of the lens. Amit then placed a concave lens next to the convex lens and observed that the light rays diverged. However, when he placed a third lens, which was also convex, after the concave lens, he observed that the light rays converged again.

Questions:

1. What is the term for the point where light rays converge after passing through a convex lens?

- A) Focus
- B) Centre of curvature
- C) Pole
- D) Principal axis

2. What type of lens is used to correct near-sightedness?

- A) Convex lens
- B) Concave lens
- C) Plane lens
- D) Cylindrical lens

3. What happens to light rays when they pass through a concave lens?

- A) They converge
- B) They diverge
- C) They remain parallel
- D) They bend at a right angle

4. What is the term for the combination of lenses that Amit used to converge the light rays again?

- A) Lens system
- B) Optical instrument
- C) Telescope
- D) Compound microscope

II. Draw the ray diagram for a concave mirror, state the characteristics of the image formed:

- 1. Object is placed at infinity
- 2. Object is at focus