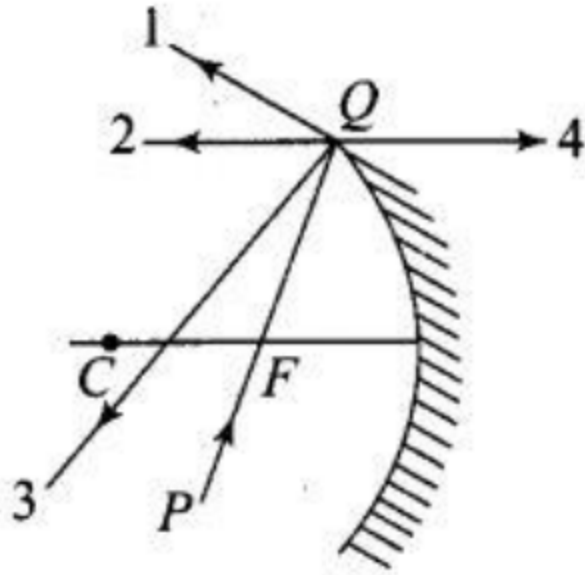


Q3. The direction of ray of light incident on a concave mirror is shown by PQ while directions in which the ray would travel after reflection is shown by four rays marked 1, 2, 3 and 4 (figure). Which of the four rays correctly shows the direction of reflected ray?



(a) 1 (b) 2

(c) 3 (d) 4

Solution: (b) The ray PQ of light passes through focus F and incident on the concave mirror, after reflection, should become parallel to the principal axis and shown by ray 2 in the figure.

Important points:

We can locate the image of any extended object graphically by drawing any two of the following four special rays:

1. A ray initially parallel to the principal axis is reflected through the focus of the mirror (1).
2. A ray passing through the center of curvature is reflected back along itself (3).

3. A ray initially passing through the focus is reflected parallel to the principal axis (2).

4. A ray incident at the pole is reflected symmetrically.