### CLASS-X

# Light - Reflection and Refraction Spherical Mirror

#### SPHERICAL MIRRORS:

A mirror whose reflecting surface is a part of a hollow of glass is known as spherical mirror. For example, a dentist uses a curved mirror to examine the teeth closely, large curved mirrors are used in telescoped at observatories. These are of the type convex and concave.

#### (a) Some terms related to spherical mirrors :



- (i) **Pole :** The central point of mirror is called it pole.
- (ii) **Centre of curvature :** The center of the sphere of which the mirror is a part is called centre of curvature.
- (iii) Radius of curvature : The radius of the sphere of which the mirror is a part is called radius of curvature.
- (iv) **Principal axis** : The straight line joining the pole and the centre of curvature is called the principal axis.
- (v) Focal plane : A plane passing through the principal focus and a right angles to the principal axis.of a spherical mirror is called the focal planel.

## CLASS-X

- (vi) **Focal length:** The distance between the pole and the focus is called the focal length. The focal length is half the radius of curvature.
- (vii) Aperture: The size of the mirror is calls its aperture.
- (vii) Principal focus:

| Focus of concave mirror                    | Focus of convex mirror                       |
|--|--|
| A parallel beam of light after reflectioin | A parallel beam of light after reflectioin   |
| from a concave mirror converges at a       | from a convex surface diverges and the       |
| point in front of the mirror. This point   | rays do not meet. However, on producing      |
| (F) is the focus of a concave mirror it is | backward, the rays appear to meet at a       |
| real.                                      | point behind the mirror. This point is focus |
|  | of the convex mirror and it is virtual.      |



Focus of concave mirror

Focus of convex mirror