

VIDYA BHAVAN, BALIKA VIDYAPEETH
SHAKTI UTTHAN ASHRAM, LAKHISARAI, PIN:-811311

SUBJECT:- PHYSICS

CLASS:- XTH

DATE:15/07/XX

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 5. (LIGHT - REFRACTION) (BASED ON NCERT PATTERN)

Uses of convex lenses:-

- Used in **Cameras.**
- Used in **Movie Projectors.**
- Used in **Magnifying Glasses.**
- Used in **Telescopes.**
- Used in **Microscopes.**
- Corrective glasses for **Hypermetropia.**
- Used in **Rifle Scoops.**

New Cartesian sign conventions :-

- All distances, object distance (u), image distance (v) and focal length f are measured from the optical centre.
- The distances measured in the direction of incident ray are taken as positive and distances measured against the direction of incident ray are taken as negative.
- All distances (heights) of objects and images above principal axis are taken as positive and those below the principal axis are taken as negative

For the two lenses, the sign conventions take the form:-

- u is -ve, if the object is in front of the lens. (Real object)
- u is +ve, if the object is virtual.
- v is -ve, if the image is on the same side as that of the object. (Virtual image)
- v is +ve, if the image is real.
- Focal length of a concave lens is taken as -ve.
- Focal length of a convex lens is taken as +ve.