

Microscopy : Principles and construction of Phase contrast Microscopes

- **Bright field microscope:** Ordinary compound microscope is called a bright – field microscope, because it forms a dark image against a brighter background.
- Image formation is shown in the figure (the path of light is shown)
- The objective lens forms an enlarged real image within the microscope and the eyepiece (ocular) lens further magnifies this primary image into the final virtual image (which appears to lie about 25 cm away beyond the stage).
- The total magnification is calculated by multiplying the objective and eyepiece magnification together.
- For example, if 45x objective lens is used with a 10x ocular, the magnification of the specimen will be 450x.

Dark field Microscopy

- Dark field microscope is used for examining live microorganisms which are invisible in the ordinary light microscope or that cannot be stained (some organisms are distorted by staining).
- Dark field microscope uses a dark field condenser that contains an opaque disc.
- The disc blocks light that would enter the objective directly.
- Only the light that is reflected off the specimen reaches the objective lens. The specimen appears bright against a black background.