

HUMAN EYE AND COLOURFUL WORLD

- The ability of the eye to focus both near and distant objects by adjusting its focal length is called the power of accommodation of the eye.
- The smallest distance at which the eye can see objects clearly without strain, is called the near point of the eye or the least distance of distinct vision. It is 25 cm for a normal eye.
- The farthest point upto which the eye can see objects clearly is called the far point of the eye. It is infinity for a normal eye.
- The splitting of white light into its component colours is called dispersion.
- The scattering of light by the colloidal particles of a medium due to which the path of the light becomes visible is known as Tyndall Effect.
- There are three common refractive defects of vision.
 - Myopia or short sightedness.
 - Hypermetropia or long sightedness.
 - Presbyopia.

MYOPIA OR SHORT-SIGHTEDNESS

A person with myopia can see nearby objects clearly but cannot see distant objects distinctly.

HYPERMETROPIA OR LONG-SIGHTEDNESS

A person with hypermetropia can see distant objects clearly but cannot see nearby objects distinctly.

PRESBYOPIA OR OLD SIGHT

Presbyopia is due to decrease in power of accommodation with ageing.

ATMOSPHERIC REFRACTION

It can be defined as bending of light while going through various layers of air in the atmosphere.

Twinkling of stars: They are point source of light and atmospheric refraction causes bending of light. Apparent image is higher than actual image and causes twinkling effect.

Planets do not twinkle, as they are not point source of light.

Early sunrise and late sunset: Sun can be seen two minutes before actual sunrise and two minutes after sunset due to atmospheric refraction.

