

# 34 Lecture - PHY101

## Important Subjective

**What is the visible spectrum?**

**Answer:** The visible spectrum is the range of wavelengths of light that can be seen by the human eye, ranging from approximately 400 nanometers (nm) to 700 nm.

**What is the speed of light?**

**Answer:** The speed of light is approximately 299,792,458 meters per second in a vacuum.

**What is the wave-particle duality of light?**

**Answer:** The wave-particle duality of light means that light behaves like both a wave and a particle, depending on the situation.

**What is refraction of light?**

**Answer:** Refraction of light is the bending of light as it passes through a material with a different refractive index, such as from air to glass or water.

**What is absorption of light?**

**Answer:** Absorption of light is the transfer of the energy of light to atoms or molecules within a material, which can cause them to become excited and emit light of their own.

**What is fluorescence?**

**Answer:** Fluorescence is the emission of light by a material that has absorbed light of a different wavelength, such as when a fluorescent dye is excited by a light source.

**How is light used in fiber optic cables?**

**Answer:** Light is used to transmit information through fiber optic cables by sending pulses of light down the cable, which can carry a large amount of information over long distances.

**What is an X-ray?**

**Answer:** An X-ray is a type of high-energy electromagnetic radiation that is used in medical imaging to produce images of the inside of the body.

**What is an LED?**

**Answer:** An LED, or light-emitting diode, is a type of semiconductor device that emits light when an electric current is passed through it.

**How is light used in astronomy?**

**Answer:** Light is used in astronomy to study the properties of stars and galaxies, and to detect objects such as planets and black holes, by analyzing the light that they emit or reflect.