



ACROSS

- 1 _____ is the phenomenon that the phase velocity of a wave depends on its frequency.
- 5 _____ reflection is the reflection of light from an uneven or granular surface such that an incident ray is seemingly reflected at a number of angles.
- 8 _____s are a subcategory of radio waves with wavelengths shorter than one meter and longer than one millimeter.
- 10 _____ radiation is electromagnetic radiation of a wavelength longer than that of visible light, but shorter than that of radio waves. The name means below red.
- 12 The electromagnetic _____ is the range of all possible electromagnetic radiation.
- 14 _____ is the change in direction of a wave front at an interface between two dissimilar media so that the wave front returns into the medium from which it originated.
- 15 _____'s law is a formula used to describe the relationship between the angles of incidence and refraction for waves passing through a boundary between two different isotropic media.
- 17 _____ waves are electromagnetic

waves occurring within the portion of the electromagnetic spectrum which is a lower frequency than infrared radiation.

- 18 _____ is electromagnetic radiation.
- 19 _____ rays are forms of electromagnetic radiation or light emissions of a specific frequency produced from sub-atomic particle interaction, such as electron-positron annihilation and radioactive decay.
- 20 _____ reflection is the perfect, mirror-like reflection of light from a surface, in which light from a single incoming direction is reflected into a single outgoing direction.

DOWN

- 2 The angle of _____ is a measure of deviation of a ray to a surface from straight on.
- 3 An optical _____ is a glass or plastic strand of material designed to guide light along its length.
- 4 _____s are a form of electromagnetic radiation with a wavelength in the range of 10 to 0.01 nanometers. They are a form of ionizing radiation.
- 6 _____ light is electromagnetic radiation with a wavelength shorter than that of visible light, but longer than soft X-rays.

7 _____ is the change in direction of a wave due to a change in its speed.

- 9 The _____ spectrum is the portion of the electromagnetic spectrum that can be detected by the human eye.
- 11 The _____ index of a medium is a measure for how much the speed of light is reduced inside the medium.
- 13 Total _____ reflection is an optical phenomenon that occurs when a ray of light strikes a medium boundary at an angle larger than the critical angle with respect to the normal to the surface.
- 16 A _____ is a device that produces coherent radiation, typically in the form of a narrow, low-divergence beam and with a well-defined wavelength.