

Standards of Length, Mass and Time.

(1) Length: Standard meter is defined in terms of wavelength of light and is called atomic standard of length.

The meter is the distance containing 1650763.73 wavelength in vacuum of the radiation corresponding to orange red light emitted by an atom of krypton-86.

Now a days meter is defined as length of the path travelled by light in vacuum in $1/299,779,248$ part of a second.

(2) Mass: The mass of a cylinder made of platinum-iridium alloy kept at International Bureau of Weights and Measures is defined as 1 kg.

On atomic scale, 1 kilogram is equivalent to the mass of 5.0188×10^{25} atoms of ${}^6\text{C}^{12}$ (an isotope of carbon).

(3) Time: 1 second is defined as the time interval of 9192631770 vibrations of radiation in Cs-133 atom. This radiation corresponds to the transition between two hyperfine levels of the ground state of Cs-133.