**Absorption:** In NDT, reduction of the intensity of any form of radiated energy as a result of energy conversion (absorption) in a medium, such as the conversion of sound energy into heat (compare attenuation)

**Bremsstrahlung:** Also known as “**breaking radiation**”. Electromagnetic radiation produced when electrons’ path and kinetic energy brings them close to the positive fields of atomic nuclei. In X-radiation, electrons strike a target provided for this purpose. The electrons slow down and give up kinetic energy called X-radiation photons.

**Compton Effect or Compton Scattering:** The mode in which a moderate energy photon transfers a portion of its energy to an outer shell electron and the remaining energy is redirected as a lower energy photon.

**Electron:** a stable subatomic particle with a charge of negative electricity, found in all atoms.

**Gamma Radiation:** is a penetrating, ionizing, electromagnetic radiation arising from the radioactive decay of atomic nuclei, containing the shortest wavelength of the electromagnetic spectrum.

**HVL (Half Value Layer):** The amount (thickness) of a given shielding material needed to reduce the radiation emissivity by one-half it’s value.

**HVL Formula:** Io = Original Intensity Id = Desired intensity

$$Log[\frac{Io}{Id}]/Log2$$

**Ionizing Radiation:** a type of radiation that is able to disrupt atoms and molecules on which they pass through, giving rise to ions and free radicals.

**KV (Kilo voltage):** Energy or amount of radiation

**mA (milliamperes):** Intensity, penetrating power of radiation

**Photoelectric Effect:** When light shines on metal, electrons can be ejected from the surface of the metal in a phenomenon known as the *photoelectric effect.* This process is also referred to as *photoemission*, and the electrons that are ejected from the metal are called *photoelectrons*. In terms of their behavior and their properties, photoelectrons are no different from other electrons.

**Photons:** Discrete particles of light or electromagnetic radiation hypothesized to explain the corpuscular theory of radiant energy.

**Proton:** a subatomic particle present in all atomic nuclei, with a positive electric charge equal in magnitude to that of an electron, but of opposite sign.

**X-ray** – a type of ionizing radiation formed in a Cathode Ray Tube (CRT) when high velocity electrons flow from the cathode to the anode.