

Types of Radiation

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① α Alpha Radiation

- emitted particle is an alpha particle
- can be stopped by paper or skin.

② β Beta Radiation

- emitted particle is a beta particle
- can be stopped by aluminium foil/wood.

③ γ Gamma Radiation

- high energy electromagnetic radiation
- photons → rays
- no mass, no charge
- can be partially stopped by concrete/lead.
- often emitted along with alpha and beta radiation
- usually not included in HS level chemistry

Nuclear Symbols

${}^4_2\text{He}$ - alpha (α) particle

${}^0_{-1}\text{e}$ - beta (β) particle

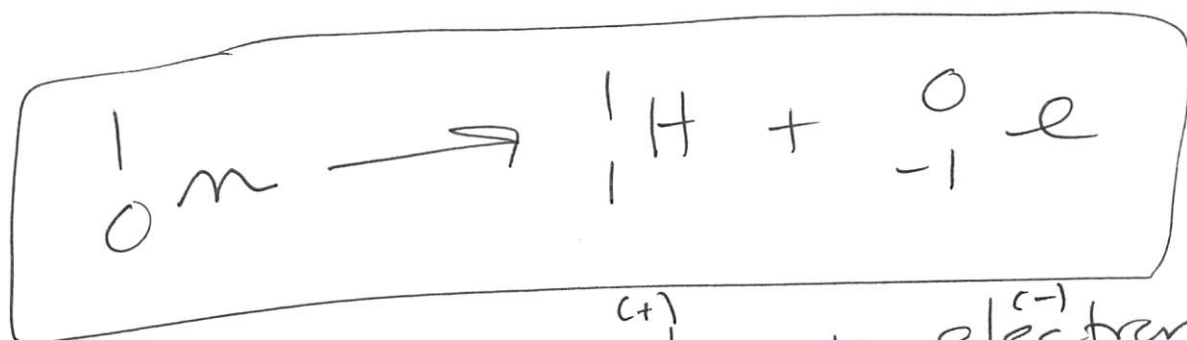
${}^0_0\gamma$ - gamma ray

${}^1_1\text{H}$ or ${}^1_1\text{p}$ - proton

${}^1_0\text{n}$ - neutron

${}^0_{+1}\text{e}$ - positron

A-HA !!



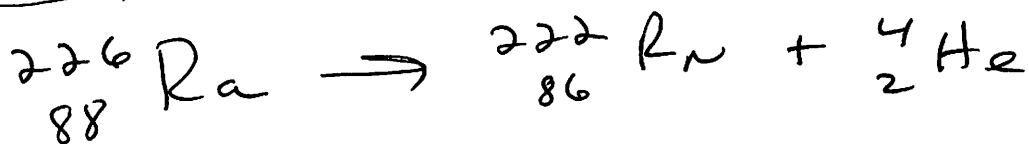
neutron = ${}^{(+)}\text{proton} + {}^{(-)}\text{electron}$

That's why it's neutral !!

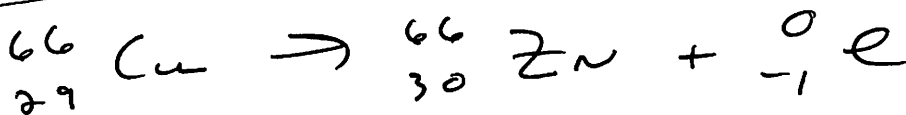
Decay Processes

(3)

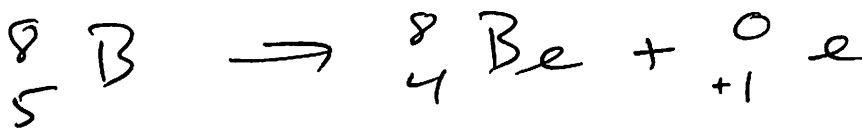
(1) Alpha Emission



(2) Beta Emission



(3) Positron Emission



→ POSITRON is a particle with the mass of an electron but positive charge

* DURING POSITRON emission, A PROTON changes to a neutron

(4) Electron Capture (of a valence electron !!)

