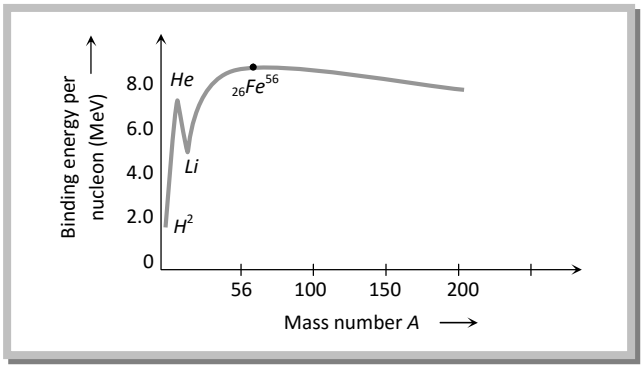
## Binding Energy Curve.

It is the graph between binding energy per nucleon and total number of nucleons (i.e. mass number A)




(1) Some nuclei with mass number A < 20 have large binding energy per nucleon than their neighbor nuclei. For example ${}_2He^4$, ${}_4Be^8$, ${}_6C^{12}$, ${}_8O^{16}$ and ${}_{10}Ne^{20}$. These nuclei are more stable than their neighbors.

(2) The binding energy per nucleon is maximum for nuclei of mass number A = 56 $({}_{26}Fe^{56})$. Its value is 8.8 MeV per nucleon.

(3) For nuclei having A > 56, binding energy per nucleon gradually decreases for uranium (A = 238), the value of binding energy per nucleon drops to 7.5 MeV.

Note: When a heavy nucleus splits up into lighter nuclei, then binding energy per nucleon of lighter nuclei is more than that of the original heavy nucleus. Thus a large amount of energy is liberated in this process (nuclear fission).

When two very light nuclei combines to form a relatively heavy nucleus, then binding energy per nucleon increases. Thus, energy is released in this process (nuclear fusion).