

Physics 1214 - General Physics II

Quiz #31 - 2013.04.29

Solutions

1. Why is the total mass of the nucleus of an atom less than the total mass of its constituent parts?

The difference is due to the mass equivalent of the internal kinetic energy and the negative potential energy associated with the attractive forces holding the nucleus together.

2. What do we call the force which holds protons and neutrons together in the nucleus of an atom?

This is called the strong force (or nuclear force).

3. What does an alpha particle consist of?

An alpha particle consists of a pair of protons and a pair of neutrons bound together.

4. Which radioactive nucleus has the largest series of decays to a stable isotope?

^{238}U , which decays eventually into ^{206}Pb .