

Name:

**1) CLASS(2)**

Atomic mass of  ${}^7_3\text{Li}$  is 7.016003 u. Find the binding energy in MeV. [**2 pts**]

**2) CLASS(2)**

A radon  ${}^{220}_{86}\text{Rn}$  decays in multiple steps till reaches lead  ${}^{208}_{82}\text{Pb}$ . Find the number of alpha particles,  $N_\alpha$ , and beta particles,  $N_\beta$ , produced in this process. [**3 pts**]

**3) CLASS(2)**

Consider a sample which is measured to have 5% contamination. It has an activity of 0.100 Bq per gram. The 5% contamination is fresh carbon with activity 0.23 Bq. Find the age of the sample. [**4 pts**]