

Study Guide

Chapter 21

Name: _____

Date: _____ Per: _____

1. The splitting of the nucleus into lighter nuclei is called _____.
2. When light mass nuclei combine to form a heavier, more stable nucleus this is called _____.
3. Write an equation for the alpha decay of bismuth-213. _____.
4. Write an equation for the beta decay of silver-106. _____.
5. Describe the difference between beta decay and electron capture. _____.
6. The mass of a lithium-7 atom is 7.01600amu. Calculate its mass defect.

Proton Mass 1.007276amu
Neutron Mass 1.008665amu
Electron Mass 0.0005486amu
7. Calculate the nuclear binding energy of one lithium-6 atom. The actual measured atomic mass of lithium-6 is 6.015amu.
8. Oxygen has an unstable isotope O-17 that has a mass of 17.00454. Calculate the binding energy of the oxygen nucleus in MeV.
9. Assuming a half-life of 1599 years in how many years will 1/16 of a given amount of radium-226 remain?
10. Atoms containing radioactive nuclei are called _____.