Non Sibi High School

Andover's Chem 550/580: Advanced Chemistry

Chapter 20, Review Quiz 1

1

Write balanced equations for the following nuclear reactions:

    a. Arsenic-69 decays by positron emission.
    b. Nickel-59 decays by electron capture.
    c. Iodine-135 decays by beta emission.
    d. Polonium-210 decays by alpha emission.

2

Neutron bombardment of cobalt-59 produces an alpha particle and a new isotope. Write a balanced equation for this nuclear reaction.

3

The half-life of argon-41 is 1.8 hours. How many atoms will remain if a 3.5×10^{24} atom sample of argon-41 decays for 8.0 hours?

4

The half-life of silver-110 is 25 seconds. How much time is required for an 8.8 g sample of silver-110 to decay to 2.1 g?

5

A 3.20 mol sample of zirconium-95 requires 103 days to decay to 1.05 mol. Calculate the half-life of zirconium-95.