Nuclear Symbols and Conservation Worksheet

Scoring guide · one credit per question · review written work against each rubric

Nuclear Symbols and Conservation

Question 1

Choice (3)

An alpha particle contains two protons and two neutrons.

Question 2

14 = A + 0, giving A = 14. The charge-number balance is 6 = Z + (−1), giving Z = 7.

Question 3

Choice (4)

A gamma photon carries energy and has A = 0 and Z = 0.

Question 4

They are different elements because atomic number identifies the element. Equal mass numbers give equal totals of protons and neutrons.

Reading Decay Records

Question 5

Choice (1)

The missing particle has A = 238 − 234 = 4 and Z = 92 − 90 = 2. Those values identify an alpha particle.

Question 6

Choice (3)

The daughter’s atomic number is 16, which identifies sulfur.

Question 7

32 = 32 + A, so A = 0. The charge-number balance is 15 = 16 + Z, so Z = −1.

Question 8

The parent has 238 − 92 = 146 neutrons. The daughter has 234 − 90 = 144, which is two fewer.