Answer on Question#54674 – Chemistry – General Chemistry

Question

Suppose that a hypothetical element consistsof a mixture of two isotopes. One isotope,having mass 44 amu, is present in 18.5%abundance, while the other isotope, havingmass 46 amu, accounts for the other 81.5%.What should be the experimentally determinedatomic weight for this hypothetical element?

Answer:

The experimentally determinedatomic weight for this hypothetical elementis:

$$A(E) = 44 \cdot \frac{18.5\%}{100\%} + 46 \cdot \frac{81.5\%}{100\%} = 45.63 \ amu$$

Answer: 45.63 amu