Name : _____   Date : _____

ISOTOPES AND ATOMIC MASS WORKSHEET

Answer the following questions.

1) Europium (Eu) has two isotopes - ^{151}Eu (abundance 48.03%) and ^{153}Eu (abundance 51.97%). What is the average atomic mass of Eu?

2) Calculate the average atomic mass of copper if ^{63}Cu is 69.17% abundant and ^{65}Cu is 30.83% abundant.

3) Calculate the average atomic mass of iodine if the natural composition of the element is 80% ^{127}I, 17% ^{126}I, and 3% ^{128}I.

4) Calculate boron's (B) atomic mass, if the natural abundance for its isotopes is 19.9% ^{10}B and 80.1% ^{11}B .

ISOTOPES AND ATOMIC MASS WORKSHEET

Answers

1) Europium (Eu) has two isotopes - ^{151}Eu (abundance 48.03%) and ^{153}Eu (abundance 51.97%). What is the average atomic mass of Eu?

   Average atomic mass of Eu = (151 x 0.4803) + (153 x 0.5197) = 72.5253 + 79.5141 = 152.0394 amu

2) Calculate the average atomic mass of copper if ^{63}Cu is 69.17% abundant and ^{65}Cu is 30.83% abundant.

   Average atomic mass of Cu = (63 x 0.6917) + (65 x 0.3083) = 43.5771 + 20.0395 = 63.6166 amu

3) Calculate the average atomic mass of iodine if the natural composition of the element is 80% ^{127}I, 17% ^{126}I, and 3% ^{128}I.

   Average atomic mass of I = (127 x 0.8) + (126 x 0.17) + (128 x 0.03) = 101.6 + 21.42 + 3.84 = 126.86 amu

4) Calculate boron's (B) atomic mass, if the natural abundance for its isotopes is 19.9% ^{10}B and 80.1% ^{11}B .

   Average atomic mass of B = (10 x 0.199) + (11 x 0.801) = 1.99 + 8.811 = 10.801 amu