

## ISOTOPES AND ATOMIC MASS

1. Give the symbol for an isotope that has an atomic number of 19 and a mass number of 40.
2. An isotope of lithium has four neutrons in its nucleus. Write its isotopic notation.
3. By using a mass spectrometer we could find that an atom of the isotope Br-79 has a mass 6.577 times as large as an atom of C-12. What is the atomic mass of the Br-79 isotope?
4. An atom of O-16 is 1.3329096 times more massive than C-12. What is the mass of O-16?
5. Calculate the atomic mass from the following percent abundances and the masses of the isotopes.

|           | <b><u>ISOTOPE</u></b> | <b><u>% ABUNDANCE</u></b> | <b><u>MASS(amu)</u></b> |
|-----------|-----------------------|---------------------------|-------------------------|
| <b>a)</b> | C-12                  | 98.89                     |                         |
|           | C-13                  | 1.11                      | 13.0034                 |
| <b>b)</b> | Mg-24                 | 78.99                     | 23.9850                 |
|           | Mg-25                 | 10.00                     | 24.9858                 |
|           | Mg-26                 | 11.01                     | 25.9826                 |
| <b>c)</b> | Cu-63                 | 69.09                     | 62.93                   |
|           | Cu-65                 | 30.91                     | 64.93                   |
| <b>d)</b> | Ga-69                 | 60.27                     | 68.9257                 |
|           | Ga-71                 | 39.73                     | 70.9249                 |
| <b>e)</b> | O-16                  | 99.7587                   | 15.994915               |
|           | O-17                  | 0.0374                    | 0.00636                 |
|           | O-18                  | 0.2039                    | 0.03670                 |
| <b>f)</b> | B-10                  | 19.78                     | 10.0129                 |
|           | B-11                  | 80.22                     | 11.0093                 |