

ISOTOPE WORKSHEET KEY

Complete the following table.

Symbol of isotope	Number of protons	Number of neutrons	Number of electrons	Atomic number	Mass number
$^{35}_{17}\text{Cl}$	17	18	17	17	35
$^{34}_{16}\text{S}$	16	18	16	16	34
$^{209}_{83}\text{Bi}^{3+}$	83	126	80	83	209
$^{115}_{49}\text{In}$	49	66	49	49	115
$^{197}_{79}\text{Au}^{+}$	79	118	78	79	197

CHEMISTRY 151 - ISOTOPE SYMBOLISM KEY

Complete the following table.

Symbol	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
$^{59}_{27}\text{Co}$	27	59	27	32	27
$^{27}_{12}\text{Mg}^{2+}$	12	27	12	15	10
$^{31}_{15}\text{P}^{3-}$	15	31	15	16	18
$^{190}_{76}\text{Os}$	76	190	76	114	76
$^{238}_{92}\text{U}$	92	238	92	146	92
$^{45}_{21}\text{Sc}^{3+}$	21	45	21	24	18

CHEMISTRY 151 - ATOMIC MASSES KEY

Naturally occurring iron consists of 5.82% iron-54 with atoms of mass 53.940 u, 91.66% iron-56 with atoms of mass 55.935 u, 2.19% iron-57 with atoms of mass 56.935 u, and 0.33% iron-58 with atoms of mass 57.933 u. Calculate iron's atomic mass.

$$\begin{aligned} \text{atomic mass} &= 0.0582(53.940) + 0.9166(55.935) + 0.0219(56.935) + 0.0033(57.933) \\ &= 3.14 + 51.27 + 1.25 + 0.19 = \mathbf{55.85 \text{ u}} \end{aligned}$$