

# Periodic Table

Questions adapted from Chemistry 2e, OpenStax  
available for free at <https://openstax.org/details/books/chemistry-2e>

**37.** Using the periodic table, classify each of the following elements as a metal or a nonmetal, and then further classify each as a main-group (representative) element, transition metal, or inner transition metal:

- (a) uranium
- (b) bromine
- (c) strontium
- (d) neon
- (e) gold
- (f) americium
- (g) rhodium
- (h) sulfur
- (i) carbon
- (j) potassium

**38.** Using the periodic table, classify each of the following elements as a metal or a nonmetal, and then further classify each as a main-group (representative) element, transition metal, or inner transition metal:

- (a) cobalt
- (b) europium
- (c) iodine
- (d) indium
- (e) lithium
- (f) oxygen
- (g) cadmium
- (h) terbium
- (i) rhenium

**39.** Using the periodic table, identify the lightest member of each of the following groups:

- (a) noble gases
- (b) alkaline earth metals
- (c) alkali metals
- (d) chalcogens

40. Using the periodic table, identify the heaviest member of each of the following groups:
- (a) alkali metals
  - (b) chalcogens
  - (c) noble gases
  - (d) alkaline earth metals
41. Use the periodic table to give the name and symbol for each of the following elements:
- (a) the noble gas in the same period as germanium
  - (b) the alkaline earth metal in the same period as selenium
  - (c) the halogen in the same period as lithium
  - (d) the chalcogen in the same period as cadmium
42. Use the periodic table to give the name and symbol for each of the following elements:
- (a) the halogen in the same period as the alkali metal with 11 protons
  - (b) the alkaline earth metal in the same period with the neutral noble gas with 18 electrons
  - (c) the noble gas in the same row as an element with 30 neutrons and 25 protons
  - (d) the noble gas in the same period as gold
43. Write the name and symbol for each of the following elements.
- (a) the alkali metal with 11 protons and a mass number of 23
  - (b) the noble gas element with 77 neutrons in its nucleus and 54 electrons in the neutral atom
  - (c) the element with 33 protons and 42 neutrons in its nucleus
  - (d) the alkaline earth metal with 88 electrons and 138 neutrons
44. Write the name and symbol for each of the following elements.
- (a) the chalcogen with a mass number of 128
  - (b) the noble gas, used in lighting, with 10 electrons and 10 neutrons
  - (c) the lightest alkali metal