Name : _____ Date : _____

Worksheet: Atomic Structure

1. A neutral atom has 54 protons and 70 neutrons.

   (a) What is its atomic number? _____
   (b) What is its mass number? _____
   (c) How many electrons does the atom has? _____
   (d) What is the name of the atom? _____

2. Give the symbol and number of protons in the following atoms:

Lithium _____	Bromine _____	Iron _____
Copper _____	Oxygen _____	Mercury _____
Krypton _____	Helium _____	

3. Give the symbol and number of electrons in a neutral atom of:

Uranium _____	Chlorine _____	Boron _____
Iodine _____	Antimony _____	Argon _____
Gold _____	Silver _____	

4. Give the isotope symbol and number of neutrons in the following elements. Show your calculations.

Barium – 137 _____	Bismuth – 209 _____
Carbon – 12 _____	Hydrogen – 1 _____
Fluorine – 19 _____	Mercury – 201 _____
Magnesium – 24 _____	Europium – 152 _____

5. Give the symbols for the nuclides described by the following particles. Include the atomic number (A) and the mass number (M).

   (a) 92 protons, 145 neutrons -
   (b) 20 protons, 20 neutrons -
   (c) 8 protons, 10 neutrons -
   (d) 22 protons, 23 neutrons -
   (e) 82 protons, 125 neutrons -
   (f) 18 protons, 22 neutrons -
   (g) 80 protons, 119 neutrons -
   (h) 25 protons, 32 neutrons -

Name : _____ Date : _____

Worksheet: Atomic Structure

Answers

1. A neutral atom has 54 protons and 70 neutrons.

   (a) What is its atomic number? 54
   (b) What is its mass number? 124
   (c) How many electrons does the atom has? 54
   (d) What is the name of the atom? Xenon

2. Give the symbol and number of protons in the following atoms:

   Lithium Li 3 | Bromine Br 35 | Iron Fe 26
   Copper Cu 29 | Oxygen O 8 | Mercury Hg 80
   Krypton Kr 36 | Helium He 2

3. Give the symbol and number of electrons in a neutral atom of:

   Uranium U 92 | Chlorine Cl 17 | Boron B 5
   Iodine I 53 | Antimony Sb 51 | Argon Ar 18
   Gold Au 79 | Silver Ag 47

4. Give the isotope symbol and number of neutrons in the following elements. Show your calculations.

   Barium – 137 Ba: 137 – 56 = 81
   Bismuth – 209 Bi: 209 – 83 = 126
   Carbon – 12 C: 12 – 6 = 6
   Hydrogen – 1 H: 1 – 1 = 0
   Fluorine – 19 F: 19 – 9 = 10
   Mercury – 201 Hg: 201 – 80 = 121
   Magnesium – 24 Mg: 24 – 12 = 12
   Europium – 152 Eu: 152 – 63 = 89

5. Give the symbols for the nuclides described by the following particles. Include the atomic number (A) and the mass number (M).

   (a) 92 protons, 145 neutrons - U: A = 92 M = 237
   (b) 20 protons, 20 neutrons - Ca: A = 20 M = 40
   (c) 8 protons, 10 neutrons - O: A = 8 M = 18
   (d) 22 protons, 23 neutrons - Ti: A = 22 M = 45
   (e) 82 protons, 125 neutrons - Pb: A = 82 M = 207
   (f) 18 protons, 22 neutrons - Ar: A = 18 M = 40
   (g) 80 protons, 119 neutrons - Hg: A = 80 M = 199
   (h) 25 protons, 32 neutrons - Mn: A = 25 M = 57