Periodic Table Trends

1) What are the elements that have some metallic and some non-metallic properties called?

2) How did Mendeleev's presentation of a periodic table allow for the discovery of more elements?

3) On the basis of their positions of the periodic table, predict which member of each of the following pairs will be more metallic:
   a) Si or Ge b) As or Ge c) Ba or Cs d) Be or B

4) In which energy level are the valence electrons of the following elements found:
   a) I b) Ca c) Ga d) F e) Fr

5) How many valence electrons are there in:
   a) N b) P c) As d) Sb e) Bi

6) Write the electron dot symbols (Lewis dot) for:
   a) Ga b) Ge c) As d) Se

7) Explain the reason why sodium forms only ions with a +1 charge while calcium forms only ions with a +2 charge.

8) Using the periodic table, identify each of the following:
   a) an element which has 7 electrons in each neutral atom.
   b) an element which has 7 electrons in its outer energy shell.
   c) an elements for which the second energy level is half filled
   d) a main group of elements which forms ions by losing only "s" electrons.

9) Which elements in the following sets should have the largest atomic radius? Explain.
   a) B, Li or F B) K, Na or Li

10) The following is a block of elements on a fictitious periodic table.

A	B	C	D
E	F	G	H
I	J	K	L

   a) Which element has the largest atomic Radius? Why?
   b) Which element has the smallest atomic radius? Why?

11) a) Which atom in each of the following pairs has the higher ionization energy?
   i) Cs or Au ii) S or P iii) Mg or Al
   iv) Rn or At v) Ne or Kr vi) Rb or Sr

   b) In each of the following pairs, which has the higher ionization energy?
   i) O or S ii) Ge or Se iii) Mg or Rb
   iv) Xe or Cs v) Ne or Kr vi) P or Si