Name: _____ Date: _____

1. Calculate the energy, in joules, required to excite a hydrogen atom by causing an electronic transition from the n = 1 to the n = 4 principal energy level. Recall that the energy levels of the H atom are given by

   $E_n = -2.18 \times 10^{-18}\ J(1/n^2)$

   A) 2.07×10^{-29} J
   B) 2.19×10^{5} J
   C) 2.04×10^{-18} J
   D) 3.27×10^{-17} J
   E) 2.25×10^{-18} J

2. Which of the following make an *isoelectronic pair*: Cl^-, O^{2-}, F, Ca^{2+}, Fe^{3+}?
   A) Ca^{2+} and Fe^{3+}
   B) O^{2-} and F
   C) F and Cl^-
   D) Cl^- and Ca^{2+}
   E) None of the above.

3. Which of the elements listed below has the highest first ionization energy?
   A) Cs
   B) Ga
   C) K
   D) Bi
   E) As

4. Which of the following atoms has the greatest electron affinity (largest positive value)?
   A) S
   B) P
   C) Ga
   D) Li
   E) Br

Answer Key

1. C
2. D
3. E
4. E