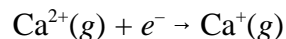
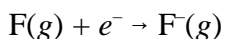
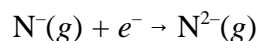
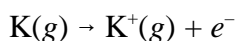


### Test 3 Review Questions

1. Who did what?

Schrödinger      Born      Pauli      Hund      Pauling      Lewis

2. Which of the following is exothermic and which is endothermic?



3. Which of the following bonds is most polar and which is least polar?

F–O

As–F

Se–Br

S–S

P–N

4. Consider the following elements: P, S, Cl, As, Br

Which is the smallest?

Which is largest?

Which has the highest ionization energy? Which has the lowest ionization energy?

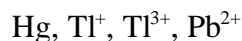
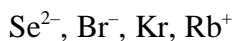
Which has the greatest electron affinity?

Which has the smallest electron affinity?

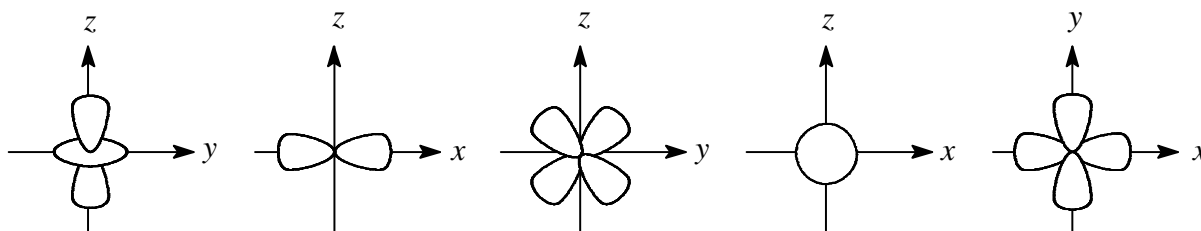
Which is most electronegative?

Which is least electronegative?

5. Among the following series, which is smallest and which is largest?



6. Identify the orbitals from the following sketches:



7. Write the valence configuration and “line and arrow” representation for the following:

Co

Co<sup>2+</sup>

Sn

I<sup>-</sup>

Ca<sup>2+</sup>

8. Write the complete electronic configuration of  $_{80}\text{Hg}$ .

9. Draw Lewis models and assign formal charges for the three resonance forms of the molecule OPN.

Which form is the least contributor to the resonance description of OPN?

On the basis of the two principal forms, describe the length and strength of (a) the P-O bond, and (b) the P-N bond.

10. Draw Lewis structures for the following and assign formal charges:

H<sub>2</sub>S

NCCN

S<sub>2</sub>O<sub>4</sub><sup>2-</sup> (dithionate ion, O<sub>2</sub>SSO<sub>2</sub><sup>2-</sup>)

IF<sub>3</sub>

B(OH)<sub>3</sub> (boric acid)