Which element has the electron configuration: 1s\(^2\)2s\(^2\)2p\(^6\)3s\(^2\)3p\(^3\)

A 3% nitrogen
B 1% vanadium
C 0% selenium
D 96% phosphorous
2. What is the electron configuration for Mn$^{2+}$?

A. $[\text{Ar}] 4s^23d^3$  
B. $[\text{Ar}] 3d^5$  
C. $[\text{Ar}] 3d^34s^2$  
D. $[\text{Ar}] 3d^54s^2$

3. The change in energy for the following reaction is referred to as the ________ for fluorine.

$$\text{F}(g) + e^- \rightarrow \text{F}^-(g)$$

A. 26% electronegativity energy  
B. 37% electron affinity  
C. 37% first ionization energy

4. Which pair of atoms would you expect to form a covalent bond?

A. 10% calcium and oxygen  
B. 3% sulfur and sodium  
C. 28% chromium and fluorine  
D. 59% iodine and carbon
5. Rank the following by increasing electronegativity:
Ca, F & N

A 3%  N < Ca < F
B 23%  F < N < Ca
C 73%  Ca < N < F
D 1%  F < Ca < N
6. How many valence electrons does the element germanium have?

A. 13% 2
B. 74% 4
C. 6% 6
D. 7% 14

7. Consider CO2:
   How many electrons are needed by the molecule?
   How many electrons are available to the molecule for bonding?

A. 17% 24, 8
B. 13% 16, 24
C. 70% 24, 16
What is the formal charge on the oxygen atom in the molecule below?

\[ \text{FC} = V - \left( \frac{B - L}{2} \right) \]

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
<th>Charge</th>
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<tbody>
<tr>
<td>A</td>
<td>84%</td>
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<tr>
<td>B</td>
<td>5%</td>
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<tr>
<td>C</td>
<td>7%</td>
<td>-1</td>
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<tr>
<td>D</td>
<td>4%</td>
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9. Does carbon dioxide exhibit resonance?

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<tbody>
<tr>
<td>A</td>
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</tr>
<tr>
<td>B</td>
<td>87%</td>
<td>no</td>
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