Electron Configuration Worksheet

1. What are the electron configurations for the following elements?

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Full Configuration  | Element | Full Configuration  |
| Be |  | Zn |  |
| F |  | Fe |  |
| Si |  | Ba |  |
| Ti |  | Co |  |
| Ag |  |  |  |

1. Write the shorthand electronic configuration for the following:

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Shorthand Configuration  | Element | Shorthand Configuration  |
| Na: |  | Pd: |  |
| Sr : |  | Cl: |  |
| Cl: |  | Si: |  |
| Ti : |  | As: |  |
| Co2+: |  | O2-: |  |

1. Draw Orbital Diagram for the following elements

|  |  |
| --- | --- |
| Element | Orbital Diagram |
| Mg |  |
| Si |  |
| Ti |  |

Electron Configuration Worksheet Key

1. What are the electron configurations for the following elements?

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Full Configuration  | Element | Full Configuration  |
| Be | 1s22s2 | Zn | 1s22s22p63s23p64s23d10 |
| F | 1s22s22p5 | Fe | 1s22s22p63s23p64s23d6 |
| Si | 1s22s22p63s23p2 | Ba | 1s22s22p63s23p64s23d104p65s24d105p66s2 |
| Ti | 1s22s22p63s23p64s23d2 | Co | 1s22s22p63s23p64s23d7 |
| Ag | 1s22s22p63s23p64s23d104p65s24d9 |  |  |

1. Write the shorthand electronic configuration for the following:

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Shorthand Configuration  | Element | Shorthand Configuration  |
| Na: | [Ne]3s1 | Pd: | [Kr]5s24d8  |
| Sr : | [Kr]5s2  | Cl: | [Ne] 3s23p5 |
| Cl: | [Ne]3s23p5 | Si: | [Ne] 3s23p2 |
| Ti : | [Kr]4s23d2 | As: | [Ar]4s23d104p3  |
| Co2+: | [Ar] 3d7  | O2-: | [He] 2s2 2p6 |

1. Draw Orbital Diagram for the following elements

|  |  |
| --- | --- |
| Element | Orbital Diagram |
| Mg | ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓1s 2s 2p 3s |
| Si | ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑ ↑ \_\_1s 2s 2p 3s 3p |
| Ti | ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ ↑↓ 1s 2s 2p 3s 3p↑↓ ↑ ↑ \_\_ \_\_ \_\_4s 3d |