

Name : _____ Date : _____

Score : _____

Practicing Electron Configuration

1. Write the full electron configuration (ex., $1s^2 2s^1$) of the following elements?

i. Nitrogen _____

ii. Silicon _____

iii. Calcium _____

iv. Strontium _____

v. Bismuth _____

2. Write the abbreviated electron configuration (ex., $[\text{He}] 2s^1$) of the following element?

i. Fluorine _____

ii. Magnesium _____

iii. Selenium _____

iv. Rubidium _____

v. Lead _____

3. Determine what elements are denoted by the following configurations.

i. $1s^2 2s^2 2p^2$ _____

ii. $1s^2 2s^2 2p^6 3s^2 3p^1$ _____

iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$ _____

iv. $[\text{Kr}] 5s^1 4d^{10}$ _____

v. $[\text{Xe}] 6s^1 4f^{14} 5d^{10}$ _____

4. Answer the following questions?

i. What is the shape of an s orbital? _____

ii. How many s orbitals can there be in an energy level? _____

iii. How many electrons can occupy an s orbital? _____

iv. What is the shape of a p orbital? _____

v. How many p orbitals can there be in an energy level? _____

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Practicing Electron Configuration

Answers

1. Write the full electron configuration (ex., $1s^2 2s^1$) of the following elements?

i. Nitrogen $1s^2 2s^2 2p^3$

ii. Silicon $1s^2 2s^2 2p^6 3s^2 3p^2$

iii. Calcium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$

iv. Strontium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2$

v. Bismuth $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^3$

2. Write the abbreviated electron configuration (ex., $[\text{He}] 2s^1$) of the following element?

i. Fluorine $[\text{He}] 2s^2 2p^5$

ii. Magnesium $[\text{Ne}] 3s^2$

iii. Selenium $[\text{Ar}] 4s^2 3d^{10} 4p^4$

iv. Rubidium $[\text{Kr}] 5s^1$

v. Lead $[\text{Xe}] 6s^2 4f^{14} 5d^{10} 6p^2$

3. Determine what elements are denoted by the following configurations.

i. $1s^2 2s^2 2p^2$ Carbon

ii. $1s^2 2s^2 2p^6 3s^2 3p^1$ Aluminum

iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$ Iron

iv. $[\text{Kr}] 5s^1 4d^{10}$ Silver

v. $[\text{Xe}] 6s^1 4f^{14} 5d^{10}$ Gold

4. Answer the following questions?

i. What is the shape of an s orbital? Spherical

ii. How many s orbitals can there be in an energy level? One

iii. How many electrons can occupy an s orbital? Two

iv. What is the shape of a p orbital? Dumb-bell

v. How many p orbitals can there be in an energy level? Three