

Writing Electron Configuration

Answers

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

i. Sodium $1s^2 2s^2 2p^6 3s^1$

ii. Potassium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$

iii. Chlorine $1s^2 2s^2 2p^6 3s^2 3p^5$

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

v. Oxygen $1s^2 2s^2 2p^4$

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

i. Manganese $[\text{Ar}] 4s^2 3d^5$

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

iii. Nitrogen $[\text{He}] 2s^2 2p^3$

iv. Sulfur $[\text{Ne}] 3s^2 3d^4$

v. Argon $[\text{Ne}] 3s^2 3p^6$

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

i. $1s^2 2s^2 2p^6 3s^2 3p^4$ Sulfur

ii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$ Manganese

iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$ Krypton

iv. $[\text{Kr}] 5s^2 4d^{10} 5p^3$ Antimony

v. $[\text{Ne}] 3s^2 3p^1$ Aluminum

4. Answer the following questions?

i. Which is the lowest energy level having d orbitals? 3

ii. How many f electrons can there be in an energy level? 14

iii. Which is the lowest energy level having f orbitals? 4

iv. How many f orbitals can there be in an energy level? Seven

v. How many energy levels are found in a neutral atom of calcium? Four

Name : Date :

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- i. Manganese _____
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3. Determine what elements are denoted by the following configurations.

- i. $1s^2 2s^2 2p^6 3s^2 3p^4$ _____
- ii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$ _____
- iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$ _____
- iv. $[\text{Kr}] 5s^2 4d^{10} 5p^3$ _____
- v. $[\text{Ne}] 3s^2 3p^1$ _____

4. Answer the following questions?

- i. Which is the lowest energy level having d orbitals? _____
- ii. How many f electrons can there be in an energy level? _____
- iii. Which is the lowest energy level having f orbitals? _____
- iv. How many f orbitals can there be in an energy level? _____
- v. How many energy levels are found in a neutral atom of calcium? _____