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Crash Course Chemistry #5: The Electron

Name: _____ Date: _____

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- Electrons behave as both particles and _____, which is why classical models of the atom failed.
- The term "quantum" comes from the fact that energy comes in discrete packets called _____.
- Niels Bohr proposed that electrons exist in defined circular _____ around the nucleus.
- Schrodinger introduced a model treating electrons as _____.
- The first electron shell has one type of orbital called the _____ orbital.
- The second shell introduces the _____ orbital, which can hold up to six electrons.
- The desire for atoms to have eight electrons in their outer shell is called the _____.
- Each electron shell is composed of different _____, like s, p, d, and f.
- The notation "1s² 2s² 2p⁴" is an example of an electron _____.
- The third shell introduces the _____ orbital, which can hold ten electrons.
- Due to energy efficiency, electrons often fill the _____ orbital before the 3d orbital.
- The energy required to remove an electron is known as _____.
- The energy released or absorbed when an electron is added is called _____.
- Atoms with the same number of electrons are said to be _____.
- An orbital is an excitation of the electron field and defines the region where an _____ is most likely to be found.

Crash Course Chemistry #5: The Electron KEY

- Electrons behave as both particles and **waves**, which is why classical models of the atom failed.
- The term "quantum" comes from the fact that energy comes in discrete packets called **quanta**.
- Niels Bohr proposed that electrons exist in defined circular **orbits** around the nucleus.
- Schrodinger introduced a model treating electrons as **standing waves**.
- The first electron shell has one type of orbital called the **s orbital**.
- The second shell introduces the **p orbital**, which can hold up to six electrons.
- The desire for atoms to have eight electrons in their outer shell is called the **octet rule**.
- Each electron shell is composed of different **orbitals**, like s, p, d, and f.
- The notation "1s² 2s² 2p⁴" is an example of an electron **configuration**.
- The third shell introduces the **d orbital**, which can hold ten electrons.
- Due to energy efficiency, electrons often fill the **4s** orbital before the 3d orbital.
- The energy required to remove an electron is known as **ionization energy**.
- The energy released or absorbed when an electron is added is called **electron affinity**.
- Atoms with the same number of electrons are said to be **isoelectronic**.
- An orbital is an excitation of the electron field and defines the region where an **electron** is most likely to be found.

15 Questions

Answer Key Included

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