Name: _____ Date: _____

Electrons in Atoms Study Worksheet

Fill in the blanks in the following paragraph with the appropriate terms.

In Bohr's model of the atom, electrons inhabit certain _____ levels, with the levels closest to the nucleus having _____ energy than those farther from the nucleus. In the _____ state of the atom, the electrons are in the lowest _____ level possible. When an atom absorbs energy, it is said to ascend to an _____ state, where it is unstable. The atom will soon _____ the same amount of energy absorbed which may be seen in the form of visible light. In the study of _____ , this visible light is seen as the _____ spectrum of an element. This spectrum is _____ to each element, hence it is also called an element's "fingerprints". The modern view of light is that it has a _____ nature.In other words, light may behave as a stream of particles called _____ or _____ , or light may behave as a _____ .

In the wave view of light, the wave equation is often used to determine a wave's frequency or wavelength. The _____ is the distance between corresponding points on adjacent waves while the _____ is the number of waves passing a given point in a given time. The wave equation is: _____ .

Name: _____ Date: _____

Electrons in Atoms Study Worksheet

Answers

In Bohr's model of the atom, electrons inhabit certain energy levels, with the levels closest to the nucleus having lower energy than those farther from the nucleus. In the ground state of the atom, the electrons are in the lowest energy level possible. When an atom absorbs energy, it is said to ascend to an excited state, where it is unstable. The atom will soon lose the same amount of energy absorbed which may be seen in the form of visible light. In the study of spectroscopy, this visible light is seen as the atomic emission spectrum of an element. This spectrum is unique to each element, hence it is also called an element's "fingerprints". The modern view of light is that it has a dual nature.In other words, light may behave as a stream of particles called quanta or photons, or light may behave as a wave.

In the wave view of light, the wave equation is often used to determine a wave's frequency or wavelength. The wavelength is the distance between corresponding points on adjacent waves while the frequency is the number of waves passing a given point in a given time. The wave equation is: $c=\lambda v$.