Name : _____ Date : _____

Atoms Ions Isotopes Worksheet

Answer the following questions.

1. What is an atom?

2. What is an ion?

3. What is an isotope?

4. What happens when the number of protons of an atom changes?

5. What happens when the number of neutrons of an atom changes?

6. What happens when the number of electrons of an atom changes?

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Answers

1. What is an atom?

   The atom is the smallest neutral particle to retain the unique properties of the element. It consists of a core called a nucleus, made up of protons and neutrons, and is surrounded by a "cloud" of electrons.

2. What is an ion?

   An ion is an atom or molecule with a positive or negative charge due to losing or gaining one or more electrons.

3. What is an isotope?

   Isotopes are different atoms of the same element, i.e., they have the same number of protons. The difference between them is the number of neutrons leading to each isotope having different atomic masses.

4. What happens when the number of protons of an atom changes?

   If the number of protons in an atom changes, then the element completely changes into a different one as the atomic number of the element has changed.

5. What happens when the number of neutrons of an atom changes?

   If the number of neutrons in an atom changes, then the mass number changes, leading to the formation of an isotope.

6. What happens when the number of electrons of an atom changes?

   If the number of electrons around an atom changes, the atom becomes charged positively (due to the loss of electrons) or negatively (due to the addition of electrons).