

- Which statement describes the distribution of charge in an atom?
 - A neutral nucleus is surrounded by one or more negatively charged electrons.
 - A neutral nucleus is surrounded by one or more positively charged electrons.
 - A positively charged nucleus is surrounded by one or more negatively charged electrons.
 - A positively charged nucleus is surrounded by one or more positively charged electrons.
- The gold foil experiment led to the conclusion that each atom in the foil was composed mostly of empty space because most alpha particles directed at the foil
 - passed through the foil
 - remained trapped in the foil
 - were deflected by the nuclei in gold atoms
 - were deflected by the electrons in gold atoms
- Which conclusion was a direct result of the gold foil experiment?
 - An atom is mostly empty space with a dense, positively charged nucleus.
 - An atom is composed of at least three types of subatomic particles.
 - An electron has a positive charge and is located inside the nucleus.
 - An electron has properties of both waves and particles.
- What was concluded about the structure of the atom as the result of the gold foil experiment?
 - A positively charged nucleus is surrounded by positively charged particles.
 - A positively charged nucleus is surrounded by mostly empty space.
 - A negatively charged nucleus is surrounded by positively charged particles.
 - A negatively charged nucleus is surrounded by mostly empty space.
- Which sequence represents a correct order of historical developments leading to the modern model of the atom?
 - the atom is a hard sphere → most of the atom is empty space → electrons exist in orbitals outside the nucleus
 - the atom is a hard sphere → electrons exist in orbitals outside the nucleus → most of the atom is empty space
 - most of the atom is empty space → electrons exist in orbitals outside the nucleus → the atom is a hard sphere
 - most of the atom is empty space → the atom is a hard sphere → electrons exist in orbitals outside the nucleus
- Which conclusion is based on the “gold foil experiment” and the resulting model of the atom?
 - An atom is mainly empty space, and the nucleus has a positive charge.
 - An atom is mainly empty space, and the nucleus has a negative charge.
 - An atom has hardly any empty space, and the nucleus has a positive charge.
 - An atom has hardly any empty space, and the nucleus has a negative charge.
- In Rutherford's gold foil experiments, some alpha particles were deflected from their original paths but most passed through the foil with no deflection. Which statement about gold atoms is supported by these experimental observations?
 - Gold atoms consist mostly of empty space.
 - Gold atoms are similar to alpha particles.
 - Alpha particles and gold nuclei have opposite charges.
 - Alpha particles are more dense than gold atoms.
- Experiments performed to reveal the structure of atoms led scientists to conclude that an atom's
 - positive charge is evenly distributed throughout its volume
 - negative charge is mainly concentrated in its nucleus
 - mass is evenly distributed throughout its volume
 - volume is mainly unoccupied

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9. An experiment in which alpha particles were used to bombard thin sheets of gold foil led to the conclusion that an atom is composed mostly of
- A) empty space and has a small, negatively charged nucleus
 - B) empty space and has a small, positively charged nucleus
 - C) a large, dense, positively charged nucleus
 - D) a large, dense, negatively charged nucleus
10. In the late 1800s, experiments using cathode ray tubes led to the discovery of the
- A) electron
 - B) neutron
 - C) positron
 - D) proton
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