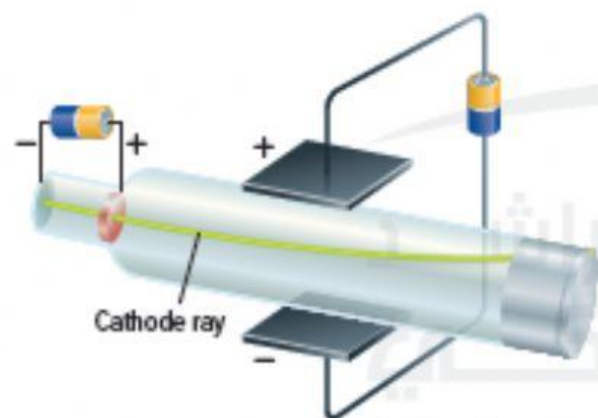


Understand Key Concepts

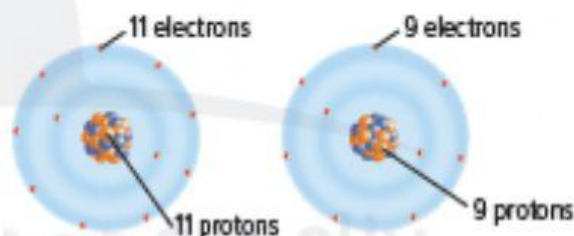
- Which part of an atom makes up most of its volume?
A. its electron cloud
B. its neutrons
C. its nucleus
D. its protons
- What did Democritus believe an atom was?
A. a solid, indivisible object
B. a tiny particle with a nucleus
C. a nucleus surrounded by an electron cloud
D. a tiny nucleus with electrons surrounding it
- If an ion contains 10 electrons, 12 protons, and 13 neutrons, what is the ion's charge?
A. $2-$
B. $1-$
C. $2+$
D. $3+$
- J.J. Thomson's experimental setup is shown below.



What is happening to the cathode rays?

- They are attracted to the negative plate.
- They are attracted to the positive plate.
- They are stopped by the plates.
- They are unaffected by either plate.

- How many neutrons does iron-59 have?
A. 30
B. 33
C. 56
D. 59
- Why were Rutherford's students surprised by the results of the gold foil experiment?
A. They didn't expect the alpha particles to bounce back from the foil.
B. They didn't expect the alpha particles to continue in a straight path.
C. They expected only a few alpha particles to bounce back from the foil.
D. They expected the alpha particles to be deflected by electrons.
- Which determines the identity of an element?
A. its mass number
B. the charge of the atom
C. the number of its neutrons
D. the number of its protons
- The figure below shows which of the following?



- two different elements
 - two different ions
 - two different isotopes
 - two different protons
- How is Bohr's atomic model different from Rutherford's model?
A. Bohr's model has a nucleus.
B. Bohr's model has electrons.
C. Electrons in Bohr's model are located farther from the nucleus.
D. Electrons in Bohr's model are located in circular energy levels.