Chapter 4

What is an atom?

1

Dalton's Atomic Theory

1. Each Element is composed of tiny, indestructible particles called atoms.

2. All atoms of an element are identical.

1766-1844

2

Dalton's Atomic Theory

3. Atoms combine in simple, whole-number ratios to form molecules of compounds.

4. In chemical reactions, atoms are not broken or changed into another type.

3

What do atoms look like?

4

J.J. Thompson

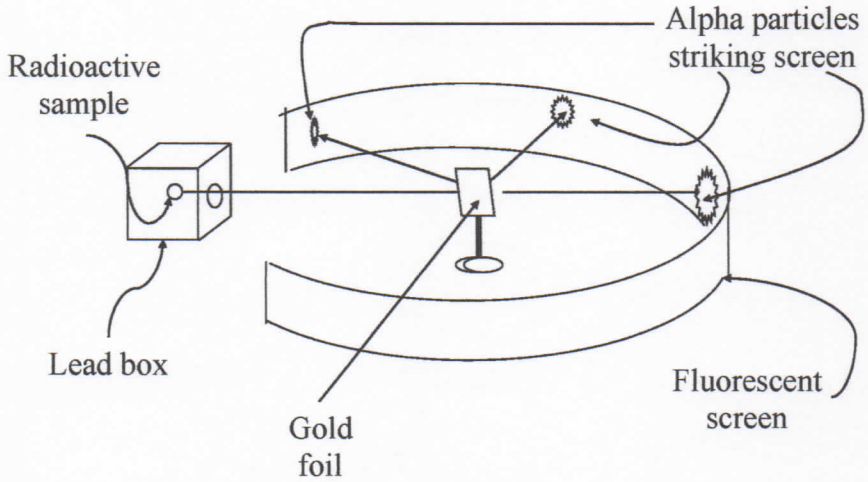
5

Ernest Rutherford

1871-1937

6

Rutherford's Experiment



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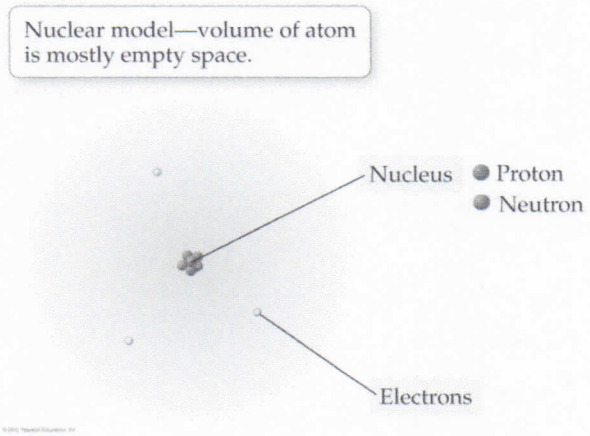

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	Protons	Electrons	Neutrons
Charge?			
Who Discovered them?			
Where Are they?			
Size			
Symbol			

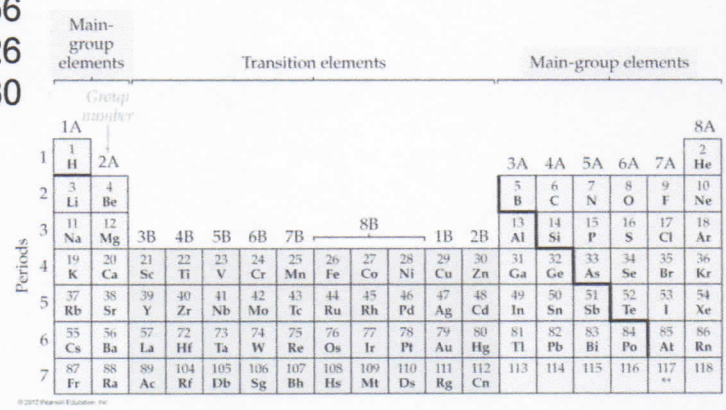
9

10

Example 1

How many electrons, protons, and neutrons respectively are in the iron(III) ion, $^{56}Fe^{3+}$?

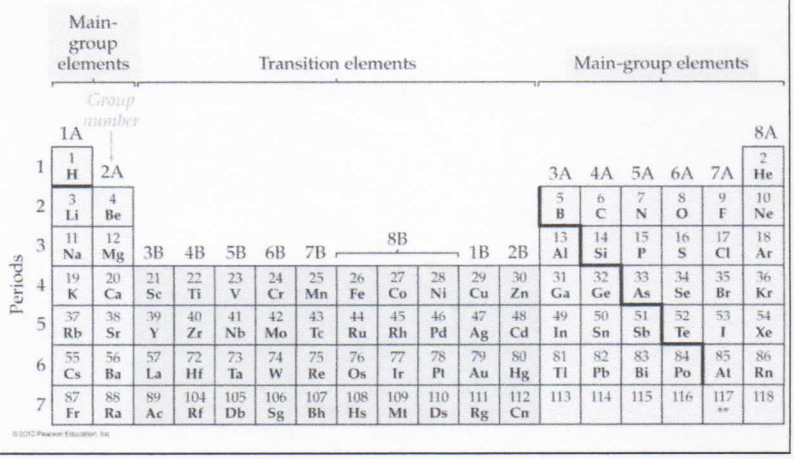
a. 23, 26, 30
b. 26, 26, 30
c. 26, 26, 56
d. 26, 26, 26
e. 29, 26, 30

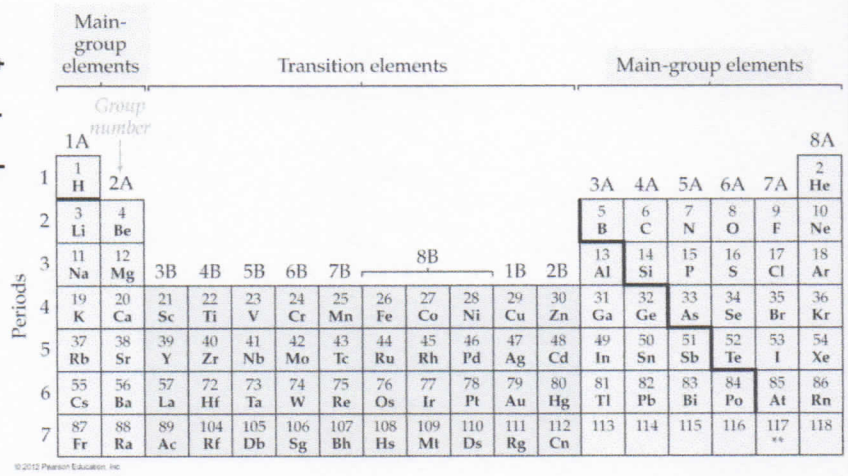


Example 2

What is the symbol for an ion having 12 protons and 10 electrons?

a. Si^{2+}
b. Si
c. Mg^{2+}
d. Ne
e. Ne^{2-}



Example 3 What is the symbol for an ion having 15 protons and 18 electrons?

a. Ph^{3-}
b. Ar
c. P^{3+}
d. Cl^{-}
e. P^{3-}