

AIM | What are the electrical charges 24 | of each part of the atom?

You probably know that the word “charge” is used in electricity. You have heard about “charging a battery.”

There are two kinds of charges. There are positive (plus) charges and negative (minus) charges. Scientists have learned that some parts of the atom have positive charges and other parts have negative charges. What are the names of these parts?

PROTONS have positive (+) charges.

ELECTRONS have negative (–) charges.

• NEUTRONS have no charges. They are neutral.

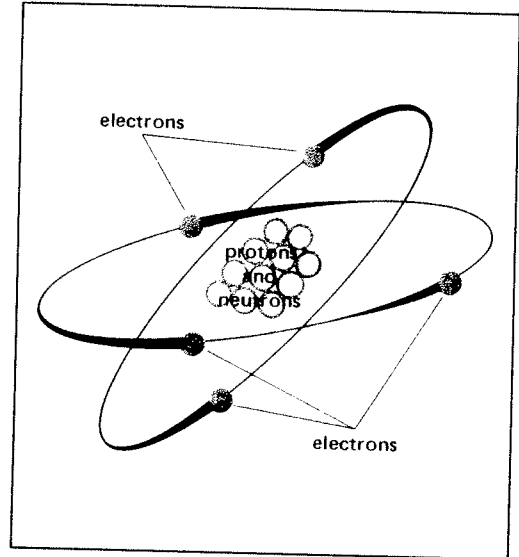
An atom has the same number of protons as electrons. For example, if an atom has six protons, it also has six electrons.

Therefore, the number of positive charges equals the number of negative charges. The opposite charges balance each other. Because of this, **THE WHOLE ATOM HAS NO CHARGE.**

**CORRECT
THE CHART**

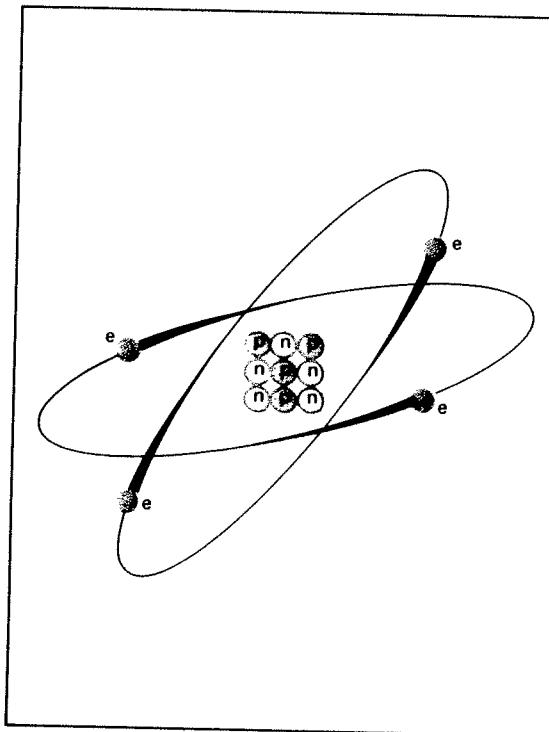
Make this chart correct by circling the right answers in columns B and C.

A	B	C
Part of the atom	Where it is found	Electrical charge
proton	inside the nucleus outside the nucleus	plus minus none
neutron	inside the nucleus outside the nucleus	plus minus none
electron	inside the nucleus outside the nucleus	plus minus none



A.

B.



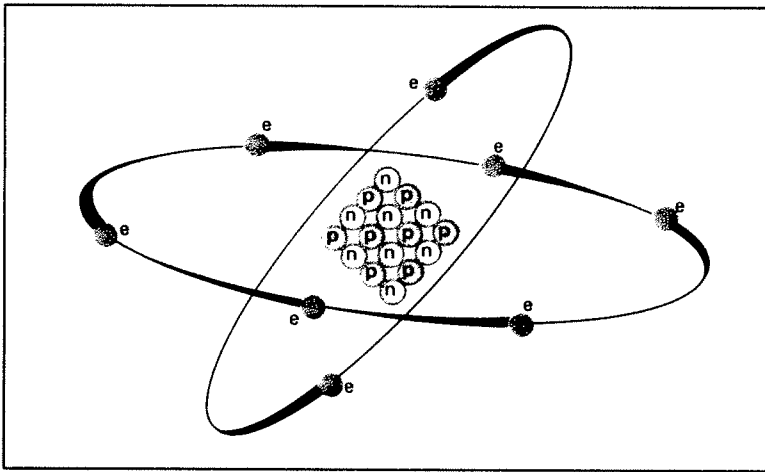
I. Look at this diagram carefully. Then answer the questions next to the diagram.

1. a) How many protons does this atom have? _____
 b) How many electrons does this atom have? _____
2. a) How many plus charges does this atom have? _____
 b) How many minus charges does this atom have? _____
3. The plus and minus charges _____ do, do not balance each other.

4. Altogether, this atom has _____
a plus charge, a minus charge, no charge
5. What is the atomic number of this atom? _____
6. What is the name of this atom? (Check the Periodic Table on page 184.)

7. What is its symbol? _____
8. Fill in these numbers for this atom. Protons = Electrons = Atomic Number

Remember: **P**rotons =
Electrons =
Number (atomic)



C.

ii. Now look at *this* diagram carefully. Then answer the questions below.

1. a) How many protons does this atom have? _____
b) How many electrons does this atom have? _____
2. a) How many plus charges does this atom have? _____
b) How many minus charges does this atom have? _____
3. The plus and minus charges _____ balance each other.
do, do not

4. Altogether this atom has _____
a plus charge, a minus charge, no charge
5. What is the atomic number of this atom? _____
6. What is the name of this atom? (Check the Periodic Table on page 184.)

7. What is its symbol? _____
8. Fill in these numbers for this atom.
Protons = Electrons = Atomic Number

COMPLETING SENTENCES Complete the sentences with the words below. Two of these words may be used twice. Two may be used three times.

same number
minus
no

protons
balance
electrons

neutrons
plus

1. The main parts of an atom are _____, _____, and _____.
2. The nucleus is made up of _____ and _____.
3. _____ spin around the nucleus.
4. Protons have a _____ charge.
5. Electrons have a _____ charge.
6. Neutrons have _____ charge.
7. A nucleus has a _____ charge.
8. An atom has the _____ of protons and electrons.
9. The plus and minus charges of an atom _____ each other.
10. An atomic number tells us how many _____ or _____ an atom has.

**COMPLETE
THE CHART**

Complete the following chart by filling in the blanks. Use the Periodic Table to help.

P	rotons =
E	lectrons =
N	umber (atomic)

	Atom	Symbol	Atomic number	Number of protons	Number of electrons
1.	hydrogen				
2.			5		
3.					10
4.		Cr			
5.				7	
6.	gold				
7.			13		
8.					33
9.		He			
10.				14	
11.	iron				
12.		F			
13.			30		
14.				16	
15.					20
16.		Sn			
17.	chlorine				
18.				6	
19.			80		
20.	iodine				
21.		Kr			
22.	uranium				