

## ELEMENTS AND THE PERIODIC TABLE ELECTRON ENERGY LEVEL REPRESENTATION FOR SIMPLE IONS

Complete the following abbreviated periodic table for ions as shown in the example. Use Side 2 of the ALCHEM periodic table for assistance if necessary.

**Example:**

representation of the number of e<sup>-</sup>s in each energy level

energy level structure characteristic of nearest noble gas

# protons in nucleus

name of ion

symbol for ion

Group IA		Group IIA		Group IIIA		Group IVA	Group VA
1							
	3	4		7	8	9	
	11	12		15	16	17	
							Group VIIIA

### Questions:

- What relationship exists between the electron structure of a Group A ion and the electron structure of the nearest noble gas?  
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- Why do boron, carbon and silicon not form simple ions? How do they satisfy their electron requirements?  
\_\_\_\_\_
- What charge do the ions from the following groups assume?  
Groups IA \_\_\_\_\_ Group IIA \_\_\_\_\_ Group IIIA \_\_\_\_\_ Group VA \_\_\_\_\_ Group VIA \_\_\_\_\_ Group VIIA \_\_\_\_\_
- What evidence is there that a noble-gas-like electron structure is stable?
- What are the differences in the chemical properties of a sodium atom and a sodium ion? (Hint: In what substances are the sodium atom and the sodium ion found?)