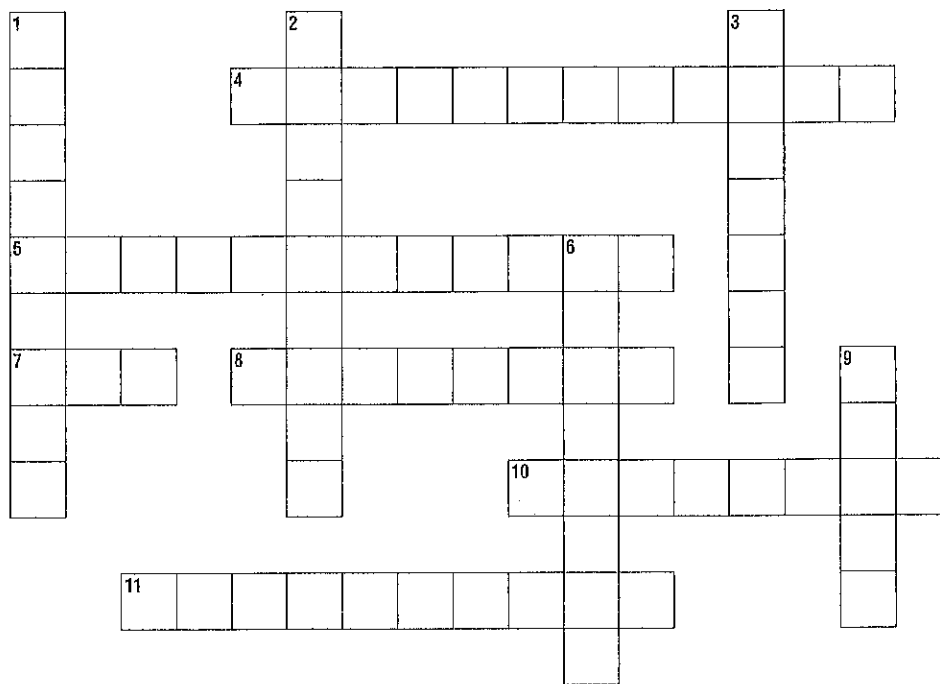



**Chapter
Review**

Atomic Structure and Chemical Bonds

Part A. Vocabulary Review

Directions: Complete the crossword puzzle using the clues below.



Across

- The bond that forms between atoms when they share electrons
- Force that holds two atoms together
- An atom that is no longer neutral because it has gained or lost an electron
- A pure substance that contains two or more elements
- A neutral particle formed when atoms share electrons
- An electron _____ is the chemical symbol for the element surrounded by as many dots as there are electrons in its outer energy level.

Down

- Number to the lower right on an element symbol indicating number of atoms of that element
- The attraction that holds positive and negative ions together
- A combination of chemical symbols and numbers that shows what a molecule is made of
- Molecule that does not have two opposite ends or poles
- Molecule that has two opposite ends or poles

Part B. Concept Review

Directions: Fill in the blanks with the correct terms.

- Sodium chloride is an example of a(n) _____ because it contains two or more elements.
- An ionic compound, salt is a hard, crystalline substance in which the _____ and _____ ions are lined up in a regular pattern.

Chapter Review (continued)

- At the center of an atom is a(n) _____ that contains one or more positively charged _____ and neutral _____.
- Electrons that are closest to the atom's nucleus are in the _____ energy level.
- When two atoms share an electron unevenly and one of the atoms has a slight negative charge as a result, their bond is referred to as a(n) _____.
- If there is a balanced sharing of electrons and neither atom has a slight negative or positive charge, their bond is referred to as a(n) _____.
- The chemical formula CO_2 represents a molecule that contains one atom of _____ and _____ atoms of oxygen.

Directions: Answer the following using complete sentences. Include chemical symbols where appropriate.

- Describe how electron dot diagrams can be used and why they are helpful.

- Describe how elements form ions that have a stable atomic structure like that found in a noble gas. Give at least two examples.

- Describe what would happen if a positively charged sodium ion and a negatively charged chlorine ion came into contact.

- Explain why a stairway is a good model for the energy levels in an atom.

- How does a polar bond differ from a nonpolar bond?
