

THE VALENCE SHELL

The **valence shell** is the outermost energy level of an atom.

It contains electrons called **valence electrons**.

These electrons help atoms bond with other atoms.

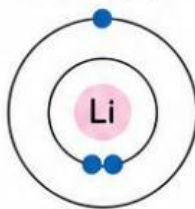
Atoms try to have a full valence shell (usually 8 electrons) to be stable.

A. Multiple Choice: Read each item carefully and choose the letter of the correct answer.

1. What is the valence shell?

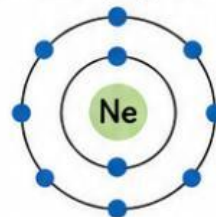
- A. The innermost shell
- B. The outermost shell
- C. The middle shell
- D. The nucleus

2. How many valence electrons does Lithium (Li) have?



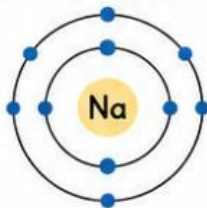
- A. 1
- B. 2
- C. 3
- D. 8

3. How many valence electrons does Neon (Ne) have?



- A. 2
- B. 8
- C. 10
- D. 18

4. How many valence electrons does Sodium (Na) have?



- A. 1
- B. 2
- C. 8
- D. 11

5. Which of the following atoms has 6 valence electrons?

- A. Carbon (C)
- B. Oxygen (O)
- C. Sodium (Na)
- D. Helium (He)

6. Which atom is most likely to gain 1 electron to fill its valence shell?

- A. Neon (Ne)
- B. Sodium (Na)
- C. Carbon (C)
- D. Chlorine (Cl)

7. Which electron configuration shows an atom with 3 valence electrons?

- A. 2, 1
- B. 2, 8, 1
- C. 2, 8, 3
- D. 2, 6

8. Why do atoms try to have a full valence shell?

- A. To become bigger
- B. To be more active
- C. To be stable
- D. To lose electrons

B. Matching Type: Match the element in Column A with the correct number of valence electrons in Column B. Write the letter of your answer on the line.

COLUMN A (Elements)

- _____ 1. He (Helium)
- _____ 2. Li (Lithium)
- _____ 3. C (Carbon)
- _____ 4. O (Oxygen)
- _____ 5. Ne (Neon)
- _____ 6. Na (Sodium)

COLUMN B (Number of Valence Electrons)

- A. 1
- B. 2
- C. 4
- D. 6
- E. 8
- F. 0



Great job! Understanding valence electrons helps us understand how atoms bond and form the world around us!

