

**Year 11 Chemistry Worksheet 4**  
**Sub-Strand 2.2 Atomic Structure and Bonding**

**Day 1**

1. Write down the electron configuration for the following atoms:
  - i. Bromine
  - ii. Sodium
  - iii. Iron
  - iv. Copper.
  
2. An element has the electron configuration: 2,8,8,1. The element is
  - A. an alkali earth metal.
  - B. an alkali metal.
  - C. a transition metal.
  - D. a halogen.

**Day 2**

3. The nucleus of an atom contains 9 protons and 10 neutrons.
  - i. What is its atomic number?
  - ii. What is its atomic mass?
  - iii. Name the element
  - iv. Give its symbol.
  
4. Silicon and carbon are in the same Group of the periodic table.  
This is best explained by the fact that both:
  - A. are non-metals.
  - B. are in Period 1 of the periodic table.
  - C. have the same number of valence electrons.
  - D. form ionic bonds.

### Day 3

5. Isotopes of the same element should have the same number of
- neutrons.
  - protons.
  - nucleus.
  - both neutrons and protons
6. Consider the isotopes of chlorine given below and answer questions that follow:



- How many protons, electrons and neutrons are found in each isotope?
- What structural characteristics both the isotopes above have in common?
- How does one isotope of chlorine differ from another isotope of chlorine?

### Day 4

6. Write the formula of the following ions.

- Calcium ion
- Oxygen ion

### Day 5

7. Two types of chemical bonds are ionic and covalent bonds.

- Describe how an ionic bond is formed.
- State the type of elements that make up covalent bonds.