

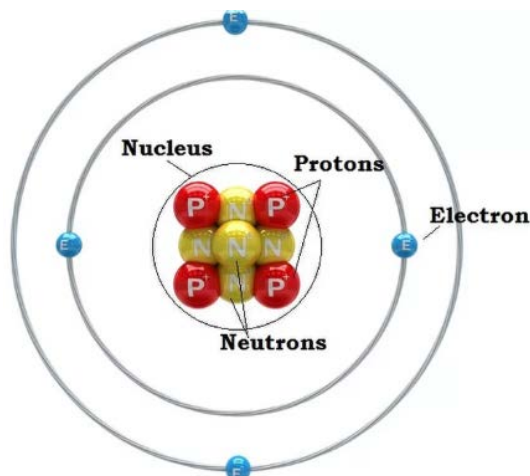
# Atoms elements and compounds

## Define:

- **Proton number ( Atomic number):** It is the number of protons in the nucleus of an atom.
  - **Nucleon number ( Mass number):** It is the total number of protons and neutrons in the nucleus of an atom.
  - **Isotope:** Atoms of the same element having the same number of protons but different number of neutrons are called as isotopes.
  - **Elements :**Elements contain only one type of an atom
  - **Mixture:** A mixture contains two or more elements that are not chemically bonded together. They do not have a fixed composition.
  - **Compound:** A compound is a substance made up of two or more different types of elements joined together by chemical bonds.
  - **Covalent bond:** A bond formed by sharing of electrons is called a covalent bond.
  - **Ionic bond:** The bonding between oppositely charged ions is called ionic bonding.
  - **Macromolecule:** Macromolecules are giant covalent structures
  - **Metallic bonding:** The bonding that exists between the positive ions and the -vely charged electrons is called as metallic bonding,
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## Structure of an atom

An atom is the smallest uncharged particle that can take part in a chemical change.



- An atom contains a centrally located nucleus.
- The nucleus contains positively charged protons and neutral neutrons. [Protons + neutrons = nucleon number or mass number]
- The electrons revolve around the nucleus in fixed orbits called electron shells or energy levels.

- An atom is electrically neutral as the number of protons (+vely charged) are equal to the number of electrons (-vely charged).
- Position of elements in the periodic table is based on their atomic number.

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| Subatomic particles | Symbol | Relative mass | Relative charge |
|---------------------|--------|---------------|-----------------|
| PROTON              | p      | 1             | +1              |
| NEUTRON             | n      | 1             | No charge       |
| ELECTRON            | e      | 0.00054       | -1              |

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