

8.3 Isotope

1. Some elements have atoms with the same number of _____ but different number of _____ are known as _____.
2. The _____ is the total number of protons and _____ in the nucleus of that atom.

Activity 8.6

Aim : To determine the number of protons, neutrons and the nucleon number of isotopes.

Instructions : Complete the table below with the number of protons, neutrons and the nucleon number for the given isotopes.

| Isotope | Number of protons | Number of neutrons | Nucleon number |
|--------------|-------------------|--------------------|----------------|
| Chlorine -35 | | 18 | |
| Chlorine -37 | | | 37 |
| Sodium -23 | 11 | | |
| Sodium-24 | | 13 | |
| Bromine -79 | | | 79 |
| Bromine -81 | 35 | | |

The Use of Isotopes in Various Fields

1. _____ are _____ isotopes that emit radioactive radiation.
2. Radioisotopes are used in medical field, agriculture, industry, power generation and research.

Activity 8.7

Aim : To search information on the use of the isotopes in various fields.

| Field | Isotopes | Uses |
|-------------------------|----------------|------|
| Medical | Sodium -24 | |
| | Cobalt -60 | |
| | Iodine -131 | |
| Agriculture | Phosphorus-32 | |
| | Carbon -14 | |
| Archaeology and Geology | Carbon -14 | |
| Food technology | Cobalt-60 | |
| Paper industry | Americium -241 | |
| Electricity generation | Uranium -235 | |