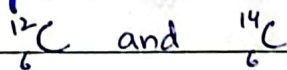


Difference between Isotopes and Isobars

Isotopes

- Isotopes are atoms of same element.
- Isotopes have same atomic number.
- Isotopes have different mass numbers.
- Isotopes have different number of neutrons.
- They occupy the same position in the modern periodic table.
- Same number of protons.
- They have same number of electrons.
- Isotopes have same similar chemical properties.

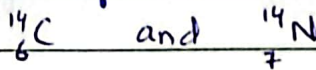
Example:



Isobars

- Isobars are atoms of different elements.
- Isobars have different atomic numbers.
- Isobars have same mass number.
- Isobars have different number of neutrons.
- They occupy different position in the modern periodic table.
- They have different number of protons.
- They have different number of electrons.
- Isobars have different chemical properties.

Example:



Difference between Isotopes and ~~Isobars~~ Isomers

Isotopes

- Isotopes are atoms of same element.

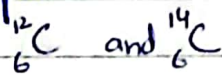
Isomers

- Isomers are different compounds with same formula.

Isotopes

→ Isotopes are different from each other because of the number of neutrons.

Example:



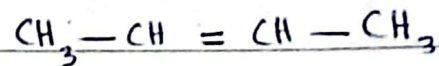
Isomers

→ Isomers are different from each other because of the arrangement of neutrons.

Example:



1-Butene



2-Butene

Difference between Isotopes and Isotones

Isotopes

→ Atoms of element

Isotopes are atoms of same element.

→ Number of Protons

Have same number of protons.

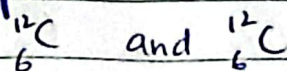
→ Number of electrons

Have same number of electrons

→ Number of neutrons

Have different number of neutrons

Example:



Isotones

→ atoms of element

Isotones are atoms of different element.

→ Number of Protons

Have different number of protons

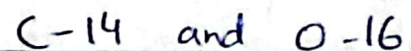
→ Number of electrons

Have different number of electrons

→ Number of neutrons

Have same number of neutrons

Example:



day/date

Why do atoms form bonds? Name three major types of chemical bonds.

Answer

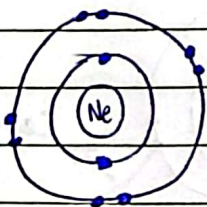
Why do atoms form bonds

Atoms form bonds so they can achieve stability in their outmost electron shell. When atoms form bond, they reach the maximum stability.

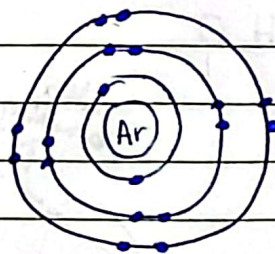
Some atoms form bonds by donating their electron to the other atom. While some atoms share the electrons instead of donating electrons. However, there are some atoms that are very reluctant to donate or share the electrons to other atoms. Such as:



Helium 2



Neon 2, 8



Argon 2, 8, 8

Types of Chemical Bonds

There are four types of chemical bonds

→ Ionic bonds

→ Covalent bonds

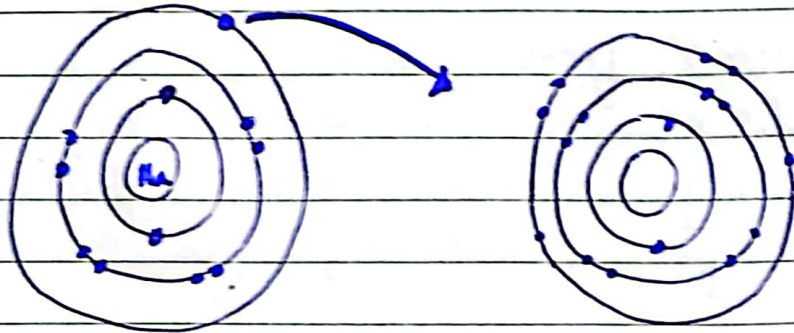
→ Coordinate Covalent bonds

→ Metallic bonds

day/date

1- Ionic Bonds

When atoms make bonds by complete transfer of electrons



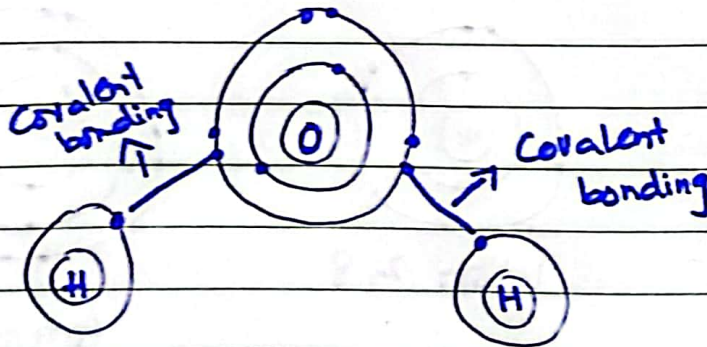
Na, 11

Cl, 17

2- Covalent Bonds

A chemical bond which is formed by mutual sharing of a electrons between atoms.

H₂O



3- Metallic bonding

A bond which is formed between free electron and positively charged metal ion

