

# Chemistry



9th Class

Sindh Board Notes

Chapter # 5

Chemical Bonding



Fill In Blanks

پنجاب، سندھ، بلوچستان، خیبر پختونخواہ، بورڈز کے تمام نوٹس سابقہ پیپرز، اس ویب سائٹ سے فری ڈاؤن لوڈ کریں۔

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## ➔ CHEMICAL BONDING

1. **Non-polar** covalent molecule is electrically neutral as well as symmetrical.
2. The power of an atom to attract the shared pair of electrons towards itself is called **electro negativity**.
3. **Covalent** compounds are usually made up of discrete units; with weak inter molecular forces.
4. NaCl is an **ionic** compound.
5. If electro negativity difference of bonded atoms is more than 1.7, the bond is **ionic**.
6. The electrostatic attraction between positive ions and the electrons of the atoms is called **metallic bond**.
7. The forces which hold atoms together in a molecule are called chemical bonds or **intra molecular forces**.
8. The attraction between the positive hydrogen and negative F, O or N is called **hydrogen bonding**.
9. CO<sub>2</sub> is a **non polar covalent** molecules.
10. The atom which accepts a lone pair of electron is called **acceptor**.
11. Force holding the atoms together in a molecule is called a **chemical bond**.
12. Electrons in the outermost shell of an atom are called **valence electrons**.
13. Only **H<sub>2</sub>** and **He** have the stable outer shell of two electrons.
14. In ionic bond formation, there is a **complete transfer** of one or more electrons from one atom to another.
15. The atoms that transfers electrons gets **positive** charge and the atoms that gains electrons gets **negative** charge.

16. The strong electrostatic forces acting between +ve and -ve ions hold them together.
17. The attraction that binds oppositely charged ions by together is termed Electrovalent Bond.
18. Oxygen becomes di-negative ion by gaining two electrons.
19.  $Mg^{+2}$  is a di-positive ion.
20. Ionic compounds are solid at room temperature.
21. Ionic compounds have high melting and boiling point.
22. Ionic Solids do not conduct electricity as the ions are not free to move.
23. Solutions of Ionic Compounds Conduct Electricity.
24. In molten state ionic compounds conduct electricity.
25. A bond formed by the mutual sharing of electrons of the atoms is known as covalent bond.
26. In covalent bond, each atom has to contribute equal number of unpaired electrons.
27. In single covalent bond only one pair of the electron is shared by the bonded atoms.
28. In double covalent bond two pairs of electrons are shared by the bonded atoms.
29. Double covalent bond is represented by two short lines.
30. In triple covalent bond three pairs of electrons are shared between the bonded atoms.
31. Covalent compounds are made up of discrete units (molecule) with weak Vander Wall Forces.
32. Covalent Compounds are often gases, liquids or soft solids.
33. Covalent compounds have low melting point.
34. Diamond and Silica are hard covalent compounds and have high melting points.
35. Covalent Compounds are bad conductors of Electricity.

36. The power of an atom to **attract** the shared pair of **electrons** towards itself is known as **electro negativity**.
37. Fluorine has the standard electro negativity value as **4.0**.
38. **Fluorine** is the most electronegative element.
39. **Cesium (Cs)** has the lowest electro negativity value as **0.7**.
40. If the covalent bond is formed between two like atoms, that molecule is called **non-polar**.
41.  $H_2C = CH_2$  is a **non-polar covalent** molecule.
42.  $NCl_3$  is a non polar **covalent** molecule.
43. If the covalent bond is formed between two dissimilar atoms, that molecule is called **polar molecule**.
44. If the difference in the electro negativities of bonded atoms upto **1.7** that bond is called "Polar Covalent Bond".
45. In co-ordinate covalent bond electrons are supplied by **one atom only**.
46. The atom which supplies electron pairs for bond formation is called the "**Donor**".
47. The pair of electrons possessed by the donor is called "**Lone Pair of Electrons**".
48. Co-ordinate covalent bond is also known as Dative Covalent Bond.
49. Co-ordinate covalent bond is always **polar**.
50. **Free electrons** in metals act as cohesive force which holds the atom together and form a metallic bond.
51. Metals are good conductor of **heat** and **electricity**.
52. **Intra-molecular forces** hold atoms together in a molecule.
53. **Inter-molecular forces** are the attractive forces between the neutral molecules at certain temperature.
54. Attractive forces of **neutral molecules** between each other are called "Vander Waal's Forces".

55. **Dispersion forces** are the weak attractive forces between temporarily polarized atoms caused by the varying position of the electrons during their motion about nuclei.
56. Dispersion forces are also called "**London Forces**" after "**Fritz London**".
57. Dipole-dipole forces acts between the **polar molecules** that possess dipole moments.
58. A dipole-dipole is an attractive inter-molecular force resulting from the interaction of the **+ve** end of the molecule with the **-ve** end of the other.
59. **Water** is best example of hydrogen bonding.
60. Hydrogen bond is denoted by **dotted** lines
61. Hydrogen bonding have an important effect on the properties of **ice** and **water**.

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