Atoms and Molecules Points to Remember

- Two or more forms of an element having the same atomic number, but different mass number are called Isotopes ($_{17}Cl^{35}$, $_{17}Cl^{37}$).
- Atoms of different elements having the same mass number, but different atomic numbers are called Isobars ($_{18}Ar^{40}$, $_{20}Ca^{40}$).
- Atoms of different elements having the same number of neutrons, but different atomic number and different mass number are called Isotones ($_{6}C^{13}$, $_{7}N^{14}$).
- Relative atomic mass of an element is the ratio between the mass of one atom of the element to 1/12th of the mass of the atom of carbon -12.
- Average atomic mass of an element is calculated by adding the masses of its isotopes, each multiplied by their natural abundance on the Earth.
- Relative molecular mass of a molecule is the ratio between the mass of one molecule of the substance to 1/12th of the mass of the atom of carbon – 12.
- The Avogadro's law states that "equal volumes of all gases under similar conditions of temperature and pressure contain equal number of molecules".
- The vapour density is defined as "the ratio between the masses of equal volumes of a gas (or a vapour) and hydrogen under the same condition".
- Atomicity of a monoatomic element = Molecular mass / Atomic Mass.
- Molecular mass = 2 × Vapour density.