C1 : PARTICLES – SUMMARY

1. particulate nature of matter.	Demonstrate understanding of the terms atom and molecule	**ATOM**: The basic unit of a chemical element. – consists of a tiny, dense positively charged nucleus + cloud of electrons. **MOLECULE**: A group of atoms bonded together. The smallest unit of a chemical compound.
3.1 : Atoms, elements & compounds	Identify physical & chemical changes, and understand the differences between them.	**Chemical**: Involves making or breaking of bonds between atoms. **Physical**: Does not involve above.
3.2	Describe the differences & demonstrate understanding of element, compound, and mixture.	**Element**: Substance containing only one type of atom; atoms of only one proton number. **Compound**: A chemically bonded group of different atoms. **Mixtures**: A substance consisting of varying types of constituents.
3.3	Describe the structure of an atom in terms of electrons and a nucleus.	– Nucleus consists of protons (+) and neutrons (0). – Surrounded by cloud of electrons (–)
	Describe the build-up of electrons in 'shells' and understand the significance of the noble gas electronic structures and of valency electrons	Generally : Number of shells = Period number Electrons in outermost shell = Group number. Maximum electrons/shell → 2, 8, 18, 32 ... Noble gas config = Full shells (outermost). Valency electrons = Outermost-shell electrons
	Protons, Neutrons, Electrons. Relative masses, Relative charges.	Protons : Mass : 1 | charge (+) Neutrons : Mass : 1 | charge (0) Electrons : Mass : 1/1836 | charge (–)
	Define Proton number and Nucleon number.	Proton number : The number of protons in the nucleus of an atom. Nucleon number : Total number of protons and neutrons.
	Use proton number & the simple structure of atoms to explain the basis of the Periodic table.	Group number → valance electrons. Period number → number of electron shells. Elements organised in order of proton number.
	Define Isotopes	**Isotopes**: Different forms of the same element, ie. with same proton but different nucleon number.