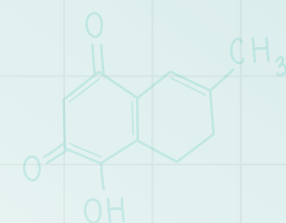


Last Moment Exam Cheat Sheet

Structure Of Atom

- **Electron** was discovered by **J.J. Thomson** through **cathode rays**.
- **Proton** is a **positively charged** particle; canal rays are also called **anode rays**.
- **Neutron** was **discovered by James Chadwick in 1932**.
- **Protons and neutrons** together are called **nucleons**.
- Neutrons are absent in **ordinary hydrogen**.
- Thomson's model is also called **plum pudding** or **watermelon model**.
- Rutherford used **gold foil** and **alpha particles** in his scattering experiment.
- Most alpha particles passed straight through gold foil, proving that atom is **mostly empty**.
- Nucleus contains positive charge and **almost all mass** of the atom.
- Radius of atom is about **10^{-10} m**; radius of nucleus is about **10^{-15} m**.
- Rutherford's model failed to explain **atomic stability**.
- Bohr proposed **fixed circular orbits** or shells for electrons.
- Electrons do not radiate energy in **stationary orbits**.
- Shells are named **K, L, M, N** or numbered 1, 2, 3, 4
- **Maximum electrons in a shell = $2n^2$** .





- K shell holds **2**, L shell **8**, M shell **18** and N shell **32 electrons**.
- Outermost shell can hold maximum **8 electrons**, except H and He with **2 electrons**.
- Valency is **combining capacity** of an element.
- Atomic number **Z = number of protons**.
- Mass number **A = protons + neutrons**.
- Cation has **fewer electrons** than protons; anion has **more electrons** than protons.
- Isotopes have **same atomic number** but different mass number.
- Isobars have **same mass number** but different atomic number.
- Isotones have **same number of neutrons**.



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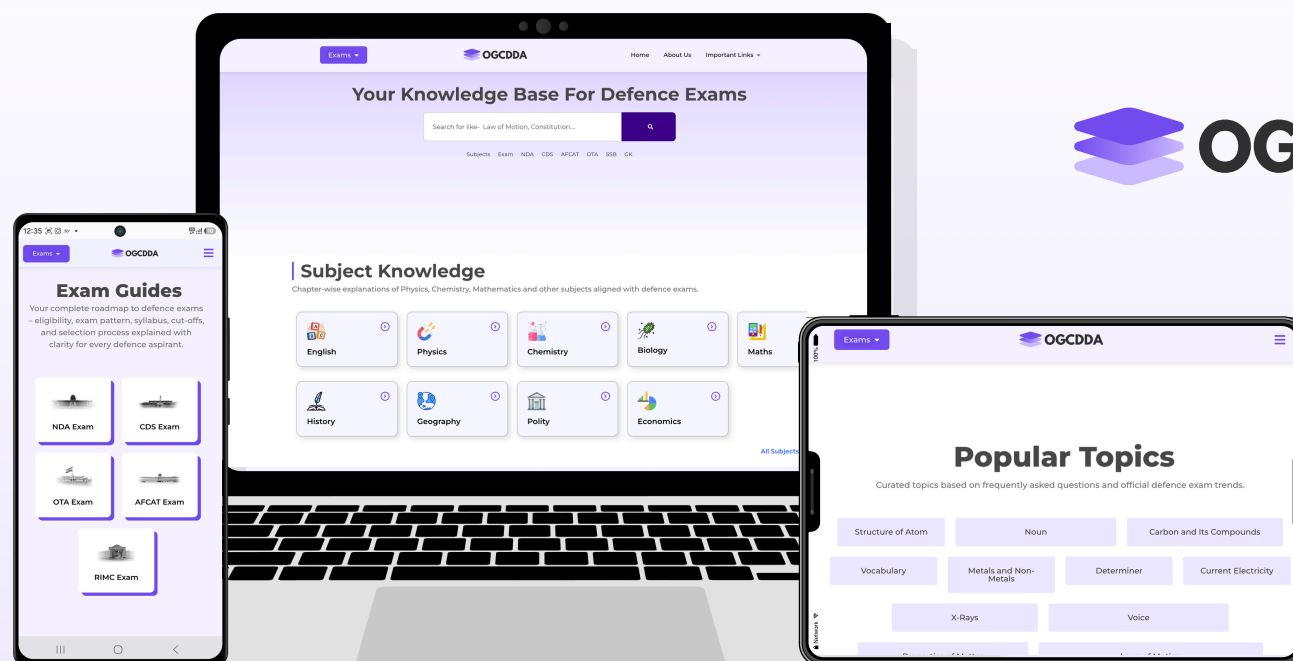
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