



ST. LAWRENCE HIGH SCHOOL

JESUIT MINORITY INSTITUTION



CLASS 6

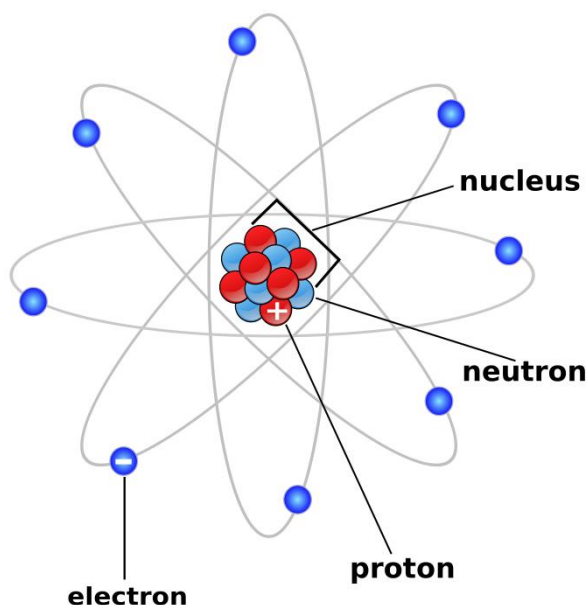
SUB: GENERAL SCIENCE

STUDY MATERIAL: 1

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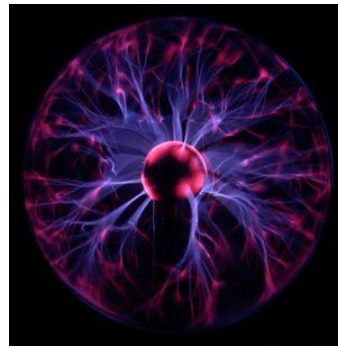
ATOMIC STRUCTURE:

- Atoms are the building blocks of matter.
- Atoms are composed of protons, electrons and neutrons.
- Proton – carries a single positive (p^+) charge.
- Electron- carries a single negative (e^-) charge.
- Neutron- carries no electrical (n^0) charge.
- Nucleus is the central part of an atom, consisting of protons, neutrons and electrons.



FOURTH STATE OF MATTER- PLASMA:

- Plasma is a state of matter. The three other common states of matter are solids, liquids and gases, so plasma is sometimes called the fourth state of matter.
- Plasma is created by adding energy to a gas so that some of its electrons leave its atoms. This is called ionization.
- It results in negatively charged electrons, and positively charged ions. Unlike the other states of matter, the charged particles in a plasma will react strongly to electric and magnetic fields (i.e. electromagnetic fields).
- If a plasma loses heat, the ions will re-form into a gas, emitting the energy which had caused them to ionize.



Plasma Lamp

Gas-filled tubes often contain plasma. This one shows neon. The color of the tube gives a hint to the gas inside

- Over 99% of the matter in the visible universe is believed to be plasma.

BOSE–EINSTEIN CONDENSATE (BEC) :

- Fifth State of Matter
- In BCE, is what happens to a dilute gas when it is made very cold, near absolute zero. It forms when the particles that make it up have very low energy.
- Only bosons can make a Bose–Einstein condensate, when they are close to 0 K (or -273°C , or -459.67°F). The gas has extremely low density, about one-hundred-thousandth the density of normal air.
- A Bose–Einstein condensate is a change of state. When matter is in the BEC state is has zero viscosity.
- Superfluidity and superconductivity are both closely connected with the BEC state of matter.

The five states of matter:

