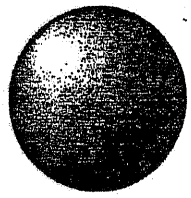
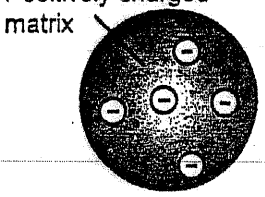
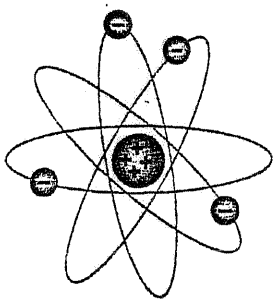
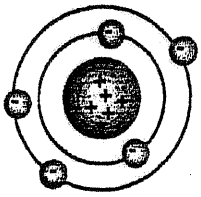
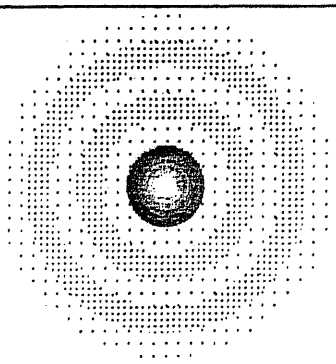
3.2 THE STRUCTURE OF MATTER

2.1 THE ATOM

① Label electrons, protons, atomic nucleus, electron energy levels.

② Label date model was proposed.

1. Examine the atom models in the table below and fill in the required information.

Picture of Model	Scientist and Model Name	Model Characteristics
	John Dalton "billiard ball" model or "solid sphere" model	1- smallest particle of matter 2- for a given substance, atoms are identical in size, shape and mass 3- smallest part of an element that can take part in chemical change and combine in whole numbers 4- atom is indivisible, unchangeable and indestructible
	J. J. Thompson "plum pudding" model	1- solid bulk of positive charge in which negative charges are dispersed throughout
	Ernest Rutherford nuclear model planetary model Solar system model.	1- positive charges and mass of atom concentrated in the center of the atom or nucleus 2- negatively charged particles moving rapidly around the nucleus proton - positive particle Chadwick - neutron
	Neils Bohr atomic model Bohr model ("satellite" or "solar system" model) planetary model	1- electrons are arranged in definite energy levels (shells) 2- electrons follow a prescribed orbit around the nucleus 3- electrons may be dislodged from orbits (energy levels) when they absorb or release energy
	Louis de Broglie and Erwin Schödinger wave mechanical model or electron cloud model	1- electron has wave-like properties 2- electrons exist in definite energy levels 3- location of the electron is uncertain, it is described in terms of the probability of being found in a certain region of space around the nucleus 4- these regions of space are called orbitals