rays, X-ray Tube and X-ray Circuit ?A photon of EMR with energy of 59.3 keV would fall well within-? the ?X-ray region of the electromagnetic spectrum and would be known as ?a 'K-alpha emission'.For tungsten K-shell emission, it givesIn ?such a case, the energy of the emission arising from the interaction ?would equal the difference in binding energies between the K-orbital ?electron (69.5 keV) and the M-orbital electron (2.5 keV), i.e. approxi- ?mately 67 keV.?It should be clear at this stage that irrespective of the energy of the ?incoming electron, provided that energy is greater than the binding ?energy of the shell-bound electron, removal of that electron will always ?lead to the production of X-rays which fall into well-defined energy ?bands.More to the ?point, useful X-rays can be produced using this process, providing the ?target material has a high enough atomic number and the tube voltage ?is above 70 KeV.Wherever a K-alpha series of characteristic ?radiations is produced in tungsten, there will always be an L-series ?of emissions and an M-series of emissions (through to the last shell).This .emission would be known as a K-beta X-ray ?photon.?2.?3