

SYLLABUS :-

Spectra of alkali atoms, vector atom model, LS and jj couplings, normal and anomalous Zeeman effect, Stark effect. Symmetric and antisymmetric wave functions, Slater determinants, constant field approximation, Hartree-Fock method, Born-Oppenheimer approximation. Fine structure of spectral lines, nuclear spin and hyperfine structure, spectra of diatomic molecules, polyatomic molecules. Raman Spectroscopy, magnetic resonance, ESR and MNR spectra, lasers, interaction of laser with atoms.