**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Even Semester**

**Session (2018-19)**

**Class: B.Sc 4th Sem Name of the Teacher: Neeru Sehgal**

**Subject: Physics Period : 5th**

**Paper : C Room No : 129**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 14 /01/2019 – 19/01/2019 | Bohr model of atom, Hydrogen atom spectrum, energy level diagram of hydrogen, excitation and ionization potential |
| Week 2 | 21/01/2019 –  25/01/2019 | Electron spin, spin magnetic moment, orbital angular momentum, orbital magnetic moment, space quantization of orbital and spin angular momentum, Larmor’s frequency ,class test |
| Week 3 | 28/01/2019 –  2/02/2019 | Vector atom model,total angular momentum, Stern Gerlach expt., spin orbit interaction |
| Week 4 | 4/02/2019 –  9/02/2019 | Fine structure of hydrogen,Lande g-factor for electron, Degenerace, Zeeman effect and experiment, classical theory of normal Zeeman effect |
| Week 5 | 11/02/2019 –  16/02/2019 | Quantum theory of normal Zeeman effect, Zeeman shift ,Anomalous Zeeman effect, Quantum mechanical theory of Anomalous Zeeman effect, Anomalous Zeeman effect in Na |
| Week 6 | 18/02/2019 –  23/02/2019 | Interaction of radiation with matter,transitionprobability, radiative transition |
| Week 7 | 25/02/2019 –  02/03/2019 | Selection rules, life time,Paschen-Back Effect, stark effect, numericals,class test |
| Mid Semester Exam | | |
| Week 8 | 11/03/2019 –  16/03/2019 | Identical particles, symmetric and antisymmetricwavefunctions,Pauli exclusion principle, exchangeforce,shells and subshells in atom |
| Week 9 | 18 /03/2019 –  22/03/2019 | Coupling scheme-LS coupling,jjcoupling,spectral terms for LS coupling, Slater determinant, Hund’s rule |
| Week 10 | 25/03/2019 –  30/03/2019 | Atomic spectra of H,Na,He,Hg,, Production of X-ray, Properties, applications of X-rays, diffraction of Xays, Bragglaw, |
| Week 11 | 1/04/2019 –  6/04/2019 | absorption of X-rays, X-ray spectrum-origin of continuous spectrum, origin of characteristics spectrum,Moseley law |
| Week 12 | 8/04/2019 –  12/04/2019 | Auger effect,molecularbonding,H ion,H molecule,complex molecules,types of molecular spectra |
| Week 13 | 15/04/2019 –  20/04/2019 | Symmetric structures, rotational energy leyels, rotational spectrum, Vibrational energy levels,vibrationalspectrum. |
| Week 14 | 22/04/2019 –  27/04/2019 | Vib.-rotational spectrum, Electronic spectrum,Ramaneffect, classicaltheory, Quantumtheory,experimental study |
| Week 15 | 29 /04/2019 –  3/05/2019 | Selection rules of Raman effect,applications,nuclear magnetic resonance, Franck Condon principle,Classical theory of Raman effect, Quantum theory of Raman effect ,Magnetic resonance experiments. |