SUBJECT NO-PH49001, SUBJECT NAME- CONDENSED MATTER PHYSICS LAB I

LTP- 0-0-6,CRD- 4

SYLLABUS :-

[Any eight (8) experiments from the list below]1. Determination of Hall voltage as a function of field for semi-metallic sample.2. Measurement of the magneto-resistance of a conducting system.3. Measurement of permeability of a ferromagnetic substance in presence of uniaxial stress.4. Measurement of the ionic conductivity of a crystal and determination of the activation energy.5. To measure the magnetic susceptibility of given samples and calculate their effective Bohr magneton number.6. Determination of permanent dipole moment of a polar molecule.7. Measurement of junction capacitance of p-n Junction and to determine the barrier potential and doping profile of depletion region.8. Measurement of resistivity of metallic and semiconducting samples between 77K and 300K.9. To study the scattering of light from suspensions (tubigens) in fluids.10. To take a Debye-Scherrer Photograph of a given sample and Index the photograph and determine the cell parameter; lattice type and number of atoms per unit cell.11. X-ray diffraction method for identification and quantitative estimation of the components in a binary mixture (powder diffraction).12. To measure the Lande g factor for electron using Electron Spin Resonance (ESR) technique.13. To measure skin depth of normal metal.14. Measurement of magnetization using Vibration Sample Magnetometer (VSM).15. To determine the linear thermal expansion coefficient of a solid.16. To measure the thermoluminescene property of a solid.