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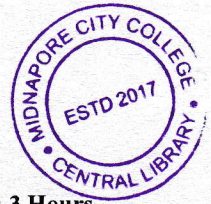
PG CBCS
M.Sc. Semester-IV Examination, 2022
PHYSICS

PAPER: PHS 495A

(SOLID STATE PHYSICS SPECIAL PRACTICAL - II)

Full Marks: 50

Time: 3 Hours



(Experiment: 35, Viva Voce: 10, Note Book: 5)

Everyone will do one experiment amongst the following. The marks distribution will be as follows: Theory with working formula (5), measurements and data tabulation (12), Graph plot and Calculation (10), error analysis (3), result and discussion (5).

1. Find the ferroelectric Curie temperature (T_c) of the given unknown polycrystalline ferroelectric sample, using dielectric measurement.
2. Show the variation of magnetoresistance with applied magnetic field of the given material. Plot the $\log(\Delta R/R) \sim \log H$ for the given sample and find out the slope.
3. Study the following characteristics of a given solar cell-
 - (i) Illumination characteristics
 - (ii) Current Voltage Characteristics
 - (iii) Power Load characteristicsHence find the best external load for the given solar cell
4. Determine the Hall coefficient of a given semiconductor at room temperature. Hence show the variation of Hall coefficient with temperature.
5. Determine the magnetic susceptibility of a paramagnetic solid substance by Gouy's method.
6. Study the I-V characteristics of Diac & Triac both in forward and reverse directions.
