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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 (Tc) 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($\Delta R/R$)~ 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 characteristics
   Hence 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.

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