

**Second Semester Examination-2018****M.Sc. PHYSICS**

Paper Code: PHS 206

Advance Practical-I  
(PRACTICAL)

Full Marks : 50

Time: 3 Hours

The figures in the right hand margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable. Everyone must attempt any one question set.

**Full Marks: 40****Practical Note Book: 5****Viva Voice: 5****Group A**

1. Form the X-ray Debye-Scherrer photograph determine the unit-cell dimension of a crystal Determine (i) type of crystal; (ii) lattice constant; (iii) density of the material; molecular mass of the sample and wavelength of X-ray will be supplied.
2. Determine the wavelength of a Monochromatic light using Michelson Interferometer and also determine the R-I of a given glass materials using the said interferometer.
3. Determine of electron temperature by single probe Method and measure the Resistivity and Band gap of semiconductor.
4. To study experimentally the variation of resistivity of Semiconductor with temperature and hence to find out the band gap energy.
5. Draw the linearization of LED characteristics and find out the Quantum efficiency.
6. Determine the plank's constant by using photo electric effect and also verify the inverse square law.
7. To study characteristics of GM tube and to find half-life of a Radioactive Isotope and also the resolving time and calculate the plateau and operating voltage.
8. To study the characteristics of a Geiger Muller counter and investigate the statistics and Measure the absorption cross-section.

\*\*\*\*\*