

ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

III SEMESTER
PH 3451

PHYSICS
Practical Course-III: Heat and Thermodynamic

Time: 3 hrs./week
Max. Marks: 50

COURSE OBJECTIVES:

- ❖ *To enable the students to understand the important concepts of Heat & Optics*
- ❖ *To measure experimentally the physical constants like $\omega, \lambda, \theta, k, s$ and verify with standard value.*

COURSE OUTCOMES:

- ❖ *As the experiments are related to the theory and syllabi of respective semester, students will have a much better understanding of the content.*
- ❖ *Students can have an exposure to use polarimeter, spectrometer etc.*
- ❖ *They will know to apply radiation correction methods.*

EXPERIMENTS:

1. Specific heat of a liquid –Joule's calorimeter –Barton's radiation correction
2. Thermal conductivity of bad conductor-Lee's method
3. Thermal conductivity of rubber. Dispersive power of grating.
4. Specific heat of a liquid by applying Newton's law of cooling correction.
5. Determination of specific heat of solid applying Barton's radiation correction.
6. Thermal behavior of an electric bulb (filament/torch light bulb).
7. Study of variation of resistance with temperature – Thermistor.
8. Latent heat of steam.

Demonstration experiments

9. Forbes Method
10. Thermo emf – thermo couple - Potentiometer

REFERENCE BOOKS:

1. B.Sc. Practical Physics – K. Hanumantha Rao, D.P. Sivaramiah & D.V. Krishnamurthy, Maruthi book Depot, Guntur (2009)
2. B.Sc. Practical Physics N.N. Ghosh, Bharathi Bhavan, Thakur Bai Road, Kadamkaun, Patna (1996).