Course	Course Code	Admission Year
Heat and Thermodynamics	**BPHY-21**	**AY-2017**

Answer all the questions

Marks: 25

1. Explain Einstein's theory of heat capacities.
2. Describe the functions of Dulong and Petit's law.
3. Derive an expression for thermal conductivity of gases
4. Derive an expression for fermi energy using FD statistics
5. Explain the construction, working and efficiency of heat engine

Course	Course Code	Admission Year
Electricity and Magnetism	**BPHY-22**	**AY-2017**

Answer all the questions

Marks: 25

1. How does the electric potential due to a point charge vary with distance?
2. Derive an expression for bridge balance condition forWheatstone bridge
3. Obtain an expression for impedance and current in series LCR circuit. Deduce an expression for the frequency of an LCR series resonating circuit?
4. Explain Curie's law.What are the importances of hysteresis curve? Explain
5. Explain Measurement of high resistance by leakage