

Write in only one of the following title (s)

1. Thermal Physics
2. Thermodynamics
3. Electric forces and electric fields

Research guidelines and special notes:

**(1) Thermal Physics**

- 1.1. Introduction
- 1.2. Thermometers and temperature scales
- 1.3. Thermal expansion of solids and liquids
- 1.4. Applications

**(2) Thermodynamics**

- 2.1. Work in thermodynamic processes
- 2.2. The first law of thermodynamics
- 2.3. Adiabatic processes
- 2.4. Isothermal processes
- 2.5. Heat engines and the second law of thermodynamics

**(3) Electric forces and electric fields**

- 3.1. Coulomb's law
- 3.2. The electric field
- 3.3. Electric flux and gauss's law
- 3.4. The electric field of a charged spherical shell