



- Q-5** **Attempt all questions** **(14)**
- a) Derive the Fermi-Dirac distribution law. **(07)**
  - b) Write a note on Work-done during an isothermal process. **(04)**
  - c) Compare the three different statistics. **(03)**
- Q-6** **Attempt all questions** **(14)**
- a) Differentiate between macroscopic and microscopic states. **(05)**
  - b) Derive the Tds equation. **(05)**
  - c) Briefly explain Clausius- Clapeyron relation. **(04)**
- Q-7** **Attempt all questions** **(14)**
- a) Explain transport phenomena in detail. **(06)**
  - b) Elaborate Phase space in detail. **(04)**
  - c) Write a note on Work-done during an adiabatic process. **(04)**
- Q-8** **Attempt all questions** **(14)**
- a) Derive Maxwell's law of distribution of velocity and give its experimental verification. **(07)**
  - b) Explain what you understand by the law of Equipartition of energy. **(04)**
  - c) Briefly explain Gibb's Enthalpy in detail. **(03)**

