

Course Code: 2MSCP2  
Course: Statistical Mechanics  
Credit: 3  
Last Submission Date: October 31 (for January Session)  
April 30, (for July session)

Max. Marks:-30

Min. Marks:-11

Note:-attempt all questions.

- Que.1 What is meant by an ensemble ? Discuss micro canonical canonical and grand canonical ensembles.
- Que.2 Deduce Liouville theorem and its application in statistical mechanics.
- Que.3 What is the difference in between Bosons and fermions'? Derive the Fermi-Dirac distribution formula.
- Que.4 What do you mean by ideal Bose gases? Describe its properties.
- Que.5 What do you mean by classical gas? Discuss cluster expansion for a classical gas.
- Que.6 Discuss the mean field theory of lasing model in three dimension.
- Que.7 Discuss the statistical theory of fluctuations.
- Que.8 Discuss the Langevin's theory of Brownian motion.