

Very short Answers Important Questions for Exams
B.Sc - 4th sem, Physics
Statistical Physics

1. What are constraints? Give examples
2. Give thermodynamic and statistical definition of entropy
3. Define probability.
4. What is Phase space.
5. What are the main points of difference between classical and Quantum statistics.
6. What is the relation between root mean square speed and mean square speed in terms of temperature of the gas?
7. Why the elementary volume of a cell in Phase space for Quantum particle cannot be zero?
8. What is Fermi gas? Give an example.
9. Give discrepancy of Dulong's and Petit's Model for specific heat of solids.
10. What are phonons?
11. Determine the rms velocity of hydrogen molecules at NTP.
12. What are identical particles?
13. Distinguish between bosons and fermions.

14. What do you mean by Occupation index?
15. What do you mean by a priori probability?
16. Give basic assumptions of B.E and F.D Statistics.
17. Calculate Einstein's frequency in a case for which $\Theta_E = 236\text{K}$.
18. Distinguish between statistical probability and a priori probability.
19. What are the failures of Einstein's model of specific heat of solids?
20. What was the need to introduce Quantum statistics?