



b) Prove that the absolute thermodynamic scale of temperature is identical with ideal gas temperature scale.

13. a) Determine the most probable microstate within a single macro state by fixing the independent variables of the system.

(OR)

b) Explain Einstein's method of calculating heat capacity and compare the same with Debye's method.

14. a) Briefly discuss the thermodynamics of point defects in solids.

(OR)

b) Derive Gibbs-Duhem equation and explain how it is useful in the determination of activity of a binary solution.

15. a) i) Write a brief note on effect temperature on the rate of reactions. (8)

ii) Discuss the metallurgical importance of various heterogeneous non catalytic reactions. (8)

(OR)

b) Describe the mechanisms involved in solid state diffusion.