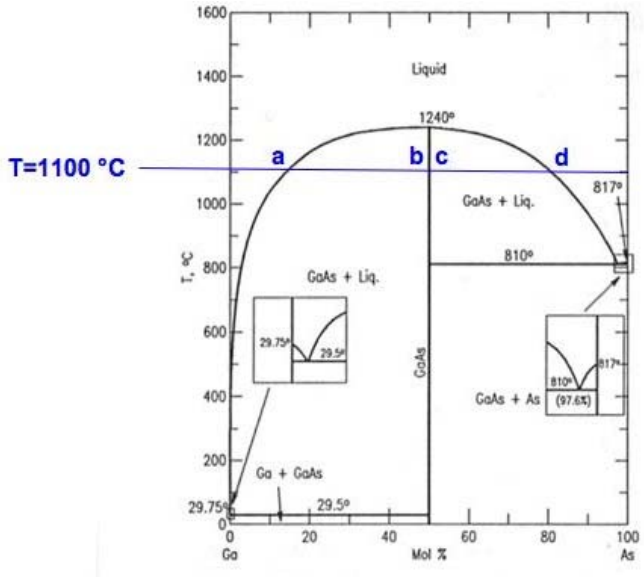
# 3.46 PHOTONIC MATERIALS AND DEVICES

## Quiz 6—April 5, 2006




Consider the binary phase diagram for GaAs. At equilibrium, for a given temperature T, the partial pressure P of the Ga or As vapor phase will be related to the chemical potential $\mu$ of the Ga or As solid/liquid phases. $\mu$ is related to the mole % of Ga or As species. At T = 1100 °C, plot the As vapor partial pressure P versus mole % As (note: treat the vertical axis on this plot as a log scale for P, and the horizontal axis as a linear scale for mole % As). On your plot, qualitatively label the (% As, P) values corresponding to locations a, b, c, and d.

Name:_____