

CA 18

- 1) $T=0$, all (Avogadro's number) are in energy level 0.
 $T=300$, ratio = $.33 = 2/3$
 $2/3 \times 6.02 \times 10^{23} = 4.0 \times 10^{23}$
 $T = \text{infinity}$, ratio = 1, 50:50 i.e. $1/2$ Avogadro's number in each energy level = 3.01×10^{23} molecule.

- 2) when T is infinity then e^0 is equal to one and $N_i/N_j = 1$ the total degeneracy is twelve. Number of molecules will be found in energy level 0 is:
 $(2/12) \times 6.02 \times 10^{23} = 1.005 \times 10^{23}$ molecules.

$\frac{2}{3}$ is 2 out of 5
&
3 out of 5

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