2. PHYSICAL CONSTANTS

Avogadro's number	N	$= 6.023 \times 10^{26}$/(kg mol)
Bohr magneton	β	$= 9.27 \times 10^{-24}$ A m^2
Boltzmann's constant	k	$= 1.380 \times 10^{-23}$ J/K
Stefan-Boltzmann constant	σ	$= 5.67 \times 10^{-8}$ W/(m^{2}K^4)
characteristic impedance of free space	Z_o	$= (\mu_o/\varepsilon_o)^{\frac{1}{2}} = 120\pi\Omega$
electron volt	eV	$= 1.602 \times 10^{-19}$ J
electron charge	e	$= 1.602 \times 10^{-19}$ C
electronic rest mass	m_e	$= 9.109 \times 10^{-31}$ kg
electronic charge to mass ratio	e/m_e	$= 1.759 \times 10^{11}$ C/kg
Faraday constant	F	$= 9.65 \times 10^{7}$ C/(kg mol)
permeability of free space	μ_o	$= 4\pi \times 10^{-7}$ H/m
permittivity of free space	ε_o	$= 8.85 \times 10^{-12}$ F/m
Planck's constant	h	$= 6.626 \times 10^{-34}$ J s
proton mass	m_p	$= 1.672 \times 10^{-27}$ kg
proton to electron mass ratio	m_p/m_e	$= 1836.1$
standard gravitational acceleration	g	$= 9.80665$ m/s^2 $= 9.80665$ N/kg
universal constant of gravitation	G	$= 6.67 \times 10^{-11}$ N m^2/kg^2
universal gas constant	R_o	$= 8.314$ kJ/(kg mol K)
velocity of light in vacuo	c	$= 2.9979 \times 10^{8}$ m/s
volume of 1 kg mol of ideal gas at 1 atm, 0°C		$= 22.41$ m^3

Temperature

$$^{o}C = \frac{5}{9}\,(^{o}F - 32)$$

$$K = \frac{5}{9}\,(^{o}F + 459.67) = \frac{5}{9}\,{}^{o}R = {}^{o}C + 273.15$$