Chem

Lesson 1 Math and Measurements.

1.1 Mass of electron (m_e)

Speed of light (c)

Ex 1. $9.109 \times 10^{-31} + 1.672622 \times 10^{-27}$

$= 1.6735329 \times 10^{-27}$

7 decimal $0.0009109 \times 10^{-27}$ +

6 decimal → 1.672622×10^{-27}

∴ 6 decimals $1.6735329 \times 10^{-27}$

Ex 2. $3.426 \times 10^{-3} - 9.1 \times 10^{-8}$

$= 3.4259091 \times 10^{-3}$

0.000091×10^{-3}

$+ \quad 3.426 \times 10^{-3}$

3.426091×10^{-3}

$2.1882959 = 52177.05 \times \left(2.68 \times 10^{-3} - \frac{1}{T}\right)$

$2.1882951 = 139.83 \left(\frac{52177.05}{T}\right)$

1. $92.452 + 8.97 + 0.108 + 17.66$

$= 119.162$

$\therefore 119.16$

2. $\log(7.4 \times 10^{-5})$

$= -4.1307768$

$\therefore = -4.13$

3. $18 \times (1.67262 \times 10^{-27})$

$m_r = 3.010716 \times 10^{-26}$

$m_n = 3.6848398 \times 10^{-26}$

$m_e = 1.6400 \times 10^{-29}$

$m_c = 6.0016398 \times 10^{-26}$

$\therefore m_T = 6.697195 \times 10^{-26}$

4. $\ln\left(\frac{9.86}{1.00}\right) = \frac{362.8 \times 10^{3}}{8.314}\left(298.15^{-1} - T_2^{-1}\right)$

$0.00000524 + 0.00330156 = 0.00330156$

$\frac{1}{0.00330156} = 302.88264 = 302.89$

$2.288 = 43637\left(3.3540 \times 10^{-3} - \frac{1}{T_2}\right)$

$\frac{2.288}{43637} = 3.3540 \times 10^{-3} - \frac{1}{T_2}$

$5.24256 \times 10^{-5} - 3.3540 \times 10^{-3} = -\frac{1}{T_2}$

$3.301567 \times 10^{-3} = +\frac{1}{T_2}$

$\therefore T_2 = 302.89$