FORMULARIO **ammesso solo per il 19-6-2023**

(potrebbero esserci formule non corrette. Ho solo cancellato quello che non doveva esserci)

$c = \lambda \nu$ $\qquad \bar{\nu} = \frac{1}{\lambda}$

$\psi_{m_\ell}(\phi) \propto e^{i m_\ell \phi}$

$\lambda_{max} T = 2{,}9 \; 10^{-3} K \qquad \rho(\lambda, T) = \frac{8\pi h c}{\lambda^5 (e^{hc/\lambda kT} - 1)} \qquad \rho(\nu, T) = \frac{8\pi h \nu^3}{c^3 (e^{h\nu/kT} - 1)}$

$E_{\ell, m_\ell} = \frac{\ell(\ell+1)\hbar^2}{2I}$

$\psi_n(x) \propto \sin\left(\frac{n\pi x}{L}\right)$

3N-5

3N-6

$a_0 = \frac{4\pi \varepsilon_0 \hbar^2}{m_e e^2} \qquad E_K = h\nu_1 - h\nu_0 = h\frac{c}{\lambda_1} - \phi$

$N^2 \int \psi^*(r) \psi(r) \, dV = 1$

$dw(r) = |\psi(r)|^2 dV = \psi^*(r)\psi(r) \quad \rightarrow \quad w = \int_a^b |\psi(x)|^2 dx = \int_a^b \psi^*(x) \psi(x) \, dx$

$\omega = \sqrt{\frac{K}{m}}$

$\psi_\nu(x) = N_\nu H_\nu(y) e^{-y^2/2} \qquad y = \frac{x}{\alpha} \qquad \alpha^2 = \frac{\hbar \omega}{K} \qquad 2\langle E_K \rangle = b \langle V \rangle$ se $V = a x^b$

$N_\nu^2 = \frac{1}{\alpha \sqrt{\pi}\, 2^\nu \nu!} \qquad H''_\nu(y) - 2y H'_\nu(y) + 2\nu H_\nu(y) = 0 \qquad \int_{-\infty}^{\infty} H_{\nu'} H_\nu e^{-y^2} dy = \begin{cases} 0 & \text{se } \nu' \neq \nu \\ \pi^{\frac{1}{2}} 2^\nu \nu! & \text{se } \nu' = \nu \end{cases}$

$E =$ $\qquad J_z = \pm \frac{h r}{\lambda} = \frac{m_\ell h r}{2\pi r} = m_\ell \hbar$

$l_z = \frac{\hbar}{i}\left(x \frac{\partial}{\partial y} - y \frac{\partial}{\partial x}\right) = \frac{\hbar}{i}\left(\frac{\partial}{\partial \phi}\right) \qquad T = \frac{1}{2I} l_z = -\frac{\hbar^2}{2I}\left(\frac{\partial^2}{\partial \phi^2}\right) \qquad E_n = -\frac{Z^2 \mu e^4}{32\pi^2 \varepsilon_0^2 \hbar^2 n^2}$

n. stati degeneri $= n^2 \qquad \binom{n}{k} = \frac{n!}{(n-k)! \cdot k!} \qquad {}^{2S+1}L_J \qquad J = L+S, \ldots, |L-S|$

n° stati $= (2L+1)(2S+1)$

$\psi(1, 2, \ldots, N) = \frac{1}{(N!)^{\frac{1}{2}}} \begin{vmatrix} \psi_a(1)\alpha(1) & \psi_a(2)\alpha(2) & \psi_a(3)\alpha(3) \\ \psi_a(1)\beta(1) & \psi_a(2)\beta(2) & \psi_a(3)\beta(3) \\ \psi_b(1)\alpha(1) & \psi_b(2)\alpha(2) & \psi_b(3)\alpha(3) \\ \ldots & \ldots & \ldots \end{vmatrix} = \frac{1}{\sqrt{2}} \{ \psi(1)\alpha(1)\psi(2)\beta(2) - \psi(1)\beta(1) \ldots - \psi(2)\alpha(2) \ldots$

$\psi(1)\psi(2)\sigma_-(1,2) \qquad E_\sigma = E_{H_{1s}} + \frac{j_0}{R} - \frac{j+k}{1+S}$

$k = j_0 \int (\psi_A \psi_B / r_B) \, d\tau$

ordine legame $= \frac{N - N^*}{2}$ $\qquad$ Integrale sovrapp.

$j = j_0 \int (\psi_A^2 / r_B) \, d\tau$