

$$B_C(T) = B_C(0) \left[ 1 - \left( \frac{T}{T_C} \right)^2 \right] \quad (1)$$

$$\oint \mathbf{E} d\mathbf{l} = -\frac{d\Phi_B}{dt} \quad (2)$$

$$\frac{\partial \mathbf{j}}{\partial t} = \frac{n_s e^2}{m} \mathbf{E} \quad (3)$$

$$\frac{\partial}{\partial t} \left( \frac{m}{n_s e^2} \text{curl} \mathbf{j} + \mathbf{B} \right) = 0 \quad (4)$$

$$\frac{\partial}{\partial t} \left( \int \frac{m}{n_s e^2} \text{curl} \mathbf{j} d\mathbf{A} + \int \mathbf{B} d\mathbf{A} \right) = \frac{\partial}{\partial t} \left( \oint \frac{m}{n_s e^2} \mathbf{j} dl + \int \mathbf{B} d\mathbf{A} \right) = 0. \quad (5)$$

$$\frac{m}{n_s e^2} \text{curl} \mathbf{j} + \mathbf{B} = 0 \quad (6)$$

$$\text{curl} \mathbf{B} = \mu_0 \mathbf{j} \quad (7)$$

$$\text{curl} \text{curl} \mathbf{B} = \mu_0 \text{curl} \mathbf{j} = -\frac{\mu_0 n_s e^2}{m} \mathbf{B} \quad (8)$$

$$\Delta \mathbf{B} = \frac{\mu_0 n_s e^2}{m} \mathbf{B} \quad (9)$$

$$\Delta \mathbf{j} = \frac{\mu_0 n_s e^2}{m} \mathbf{j} \quad (10)$$

$$\lambda_L = \sqrt{m / \mu_0 n_s e^2} \quad (11)$$

$$\Psi(\mathbf{r}) = \Psi_0 e^{i\phi(\mathbf{r})} \quad (12)$$

$$T_C = 1.13 \Theta_D \exp \frac{-1}{g(E_F) V} \quad (13)$$

$$\oint \frac{\mathbf{p}}{h} d\mathbf{r} = n \quad (14)$$

$$\oint \mathbf{p} - q \mathbf{A} d\mathbf{r} = h n \quad (15)$$

$$\frac{m}{n q} \oint \mathbf{j} d\mathbf{r} - q \oint \mathbf{A} d\mathbf{r} = n h \quad (16)$$

$$\oint \mathbf{A} d\mathbf{r} = \int \text{curl} \mathbf{A} d\mathbf{a} = \int \mathbf{B} d\mathbf{a} = \Phi_B \quad (17)$$

$$\frac{m}{n q^2} \oint \mathbf{j} d\mathbf{r} - \Phi_B = n \frac{h}{q} \quad (18)$$

$$\Phi_B = n \frac{h}{2e} \quad (19)$$