Employment and Social Development Canada
Emploi et Développement social Canada

Atlantic Workforce Partnership
Partenariat pour la main-d'œuvre de l'Atlantique

Exam Formulas

Instrumentation and Control Technician

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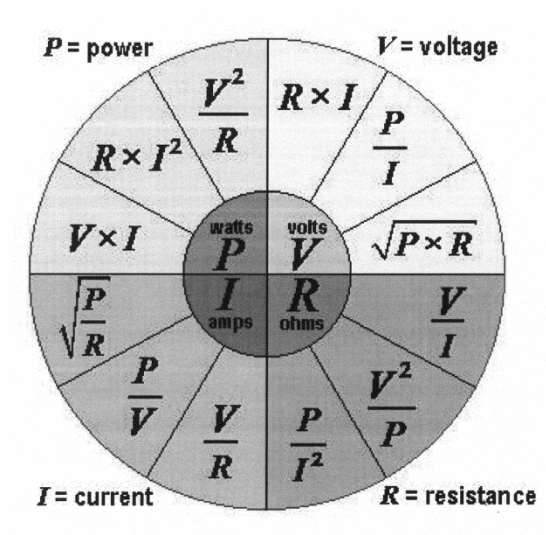
Instrumentation and Control Technician

Level 1



$$R = \frac{kL}{CM}$$

Capacitors in series: $C_T = \frac{1}{\frac{1}{C_1}+\frac{1}{C_2}+\frac{1}{C_3}+\ldots}$ Capacitors in parallel: $C_T = C_1 + C_2 + C_3 + \ldots$

Resistors in series: $R_T = R_1 + R_2 + R_3 + \ldots$ Resistors in parallel: $R_T = \frac{1}{\frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_3}+\ldots}$

Inductors in series: $L_T = L_1 + L_2 + L_3 + \ldots$ Inductors in parallel: $L_T = \frac{1}{\frac{1}{L_1}+\frac{1}{L_2}+\frac{1}{L_3}+\ldots}$

$$X_C = \frac{1}{2\pi fc} \qquad X_L = 2\pi fL$$

$$Tau\ (\tau) = RC$$

$$Tau\ (\tau) = L/R$$

$Tau\ (\tau) = 63.2\%$

$1 - \emptyset\ half - wave\ rectifier: maximum\ value\ \times 0.318$

$1 - \emptyset\ full - wave\ rectifier: maximum\ value\ \times 0.637$

$3 - \emptyset\ half - wave\ rectifier: maximum\ value\ \times 0.827$

$3 - \emptyset\ full - wave\ rectifier: maximum\ value\ \times 0.955$

$VA = \sqrt{P^2 + (VAR_L - VAR_C)^2}$

RLC Series Circuits:

$E_T = \sqrt{ER^2 + (E_L - E_C)^2}$

$Z = \sqrt{R^2 + (X_L - X_C)^2}$

RLC Parallel Circuits:

$$Z = \frac{1}{\sqrt{\left(\frac{1}{R}\right)^2 + \left(\frac{1}{X_L} - \frac{1}{X_C}\right)^2}}$$

$I_T = {I_R}^2 + (I_L - I_C)^2$

$PF = \frac{W}{VA} \times 100$

$$R = p \times \frac{L}{A}$$

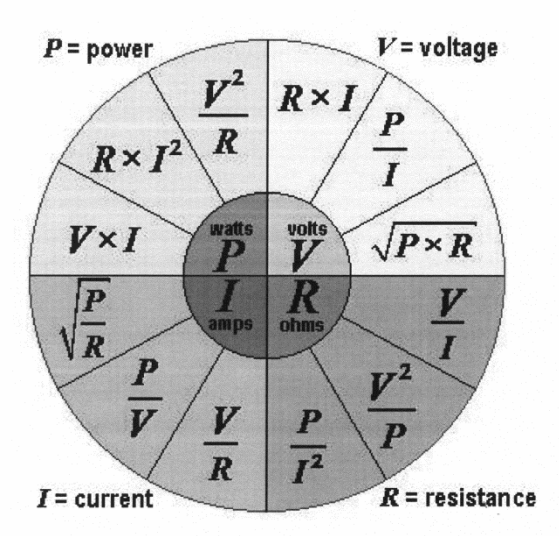
$$Rt_2 = Rt_1[1 + \alpha_{T1}(t_2 - t_1)]$$

$$X_L = \frac{V}{I}$$

Exam Formulas

Instrumentation and Control Technician

Level 2



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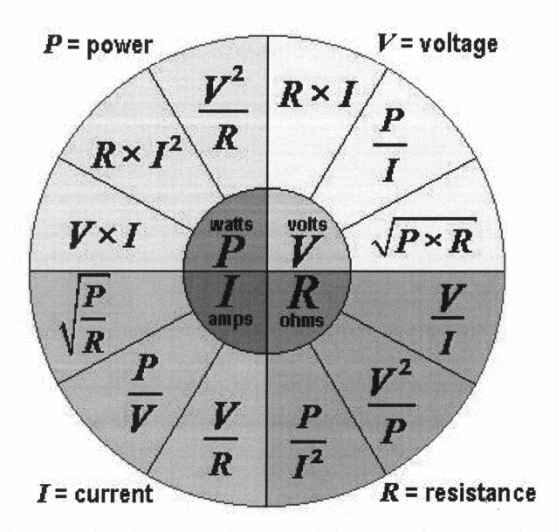
Exam Formulas
Instrumentation and Control Technician
Level 3



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Exam Formulas

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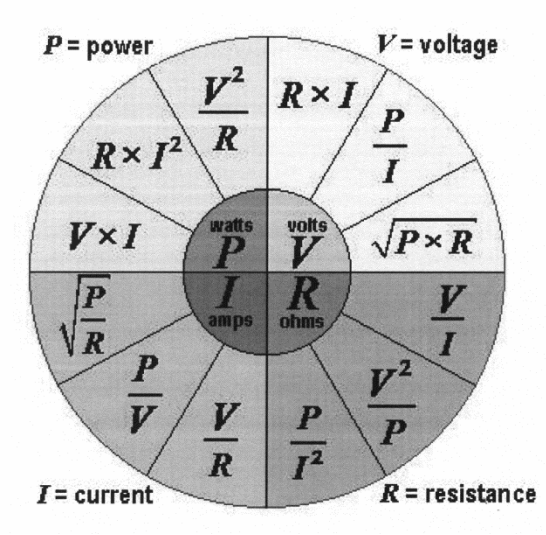
Level 4



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