

## Formulas for 2011 TST Examinations

P: watts  
 R: ohms  
 I: amps  
 E: volts

$$\begin{array}{l}
 P = I \times E \\
 E = I \times R
 \end{array}
 \quad
 I = \frac{E}{R}
 \quad
 R = \frac{E}{I}
 \quad
 \frac{E^2}{P} = R
 \quad
 \frac{E^2}{R} = P$$

Phase to neutral volts x 1.73 = Phase to Phase volts      mph to fps = mph x 1.47

where K = 12.9 for copper and 21.2 for aluminum      db = 10log (P1/ P2)

$$t = RC \quad X = X_L - X_C \quad CT = C_1 + C_2 + C_3 \quad B = f_2 - f_1$$

$$I = V / X_L \quad X_L = 2\pi fL \quad RT = R_1 + R_2 + R_3 \quad I_p = \frac{E_s \times I_s}{E_p}$$

$$X_c = \frac{1}{2\pi fC} \quad Y = 1 \text{ sec} + \left( \frac{V}{20 + 64.4G} \right) \quad \boxed{R = \frac{K \times L}{CM}} \quad AR = \frac{W + L}{V}$$

$$CT = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}} \quad RT = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}} \quad \frac{W \times H}{1000} = KWH$$

$$Z = \sqrt{R^2 + X^2}$$

$$PF = \frac{\text{Output}}{\text{Input}} \quad PF = \frac{\text{True Power}}{\text{Apparent Power}} \quad C = \frac{K_a}{D} \quad \lambda = \frac{V}{f}$$

$$\frac{HP \times 5252}{RPM} \quad V_d = \frac{2LKI}{C_m} \quad CM = \frac{2K \times L \times I}{V_d} \quad \boxed{V_{avg} = .637 \times V_{pk}}$$

$$\frac{EP}{ES} = \frac{TP}{TS} = \frac{IS}{IP} \quad P = \frac{(F)(120)}{RPM} \quad f_r = \frac{1}{2\pi\sqrt{LC}}$$

# ***ELECTRICAL REFERENCES***

