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EEC 112

Errors in the Textbook
Communications Circuits: Analysis and Design by Clarke and Hess
Errors found by
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Location	Error	Correction
Page 9 (The third term in brackets of the first line of Eq. 1.5-3)	$\neq \frac{2I_2(x)}{I_0(x)} \cos \omega_2 t$	$= \frac{2I_2(x)}{I_0(x)} \cos 2\omega_1 t$
Page 9 (In the example at the bottom)	$g(t) \neq (1\text{ mV})(1 + \cos \omega_m t) \cos \omega_2 t$	$g(t) = (1\text{ mV})(1 + \cos \omega_m t)$ because $g(t) \cos \omega_2 t$ is defined to be the received AM signal in the first paragraph of Section 1.5
Page 12 (On the line starting with $x \approx 4$)	$V_1 \neq 4 \times 26$	$V_1 = 4 \times 26$ mV
Page 12 (In the calculation of Q_T)	ω_0 is not defined	$\omega_0 = 10^7$ rad/s is assumed
Page 27 (Fig. 2.2-4)	$\alpha \neq \frac{1}{2} RC$	$\alpha = \frac{1}{2RC}$
Page 43 (8 lines from bottom)	$Q_E \neq \frac{\omega_0 L_1 L_2}{G(L_1 + L_2)}$	$Q_E = \frac{(L_1 + L_2)}{\omega_0 L_1 L_2 G}$
Page 44 (3 lines above Fig. 2.4-7)	$Z'_{12} \neq \frac{V_{o2}(p)}{V_{o1}(p)}$	$Z'_{12} = \frac{V_{o2}(p)}{I_i(p)}$
Page 50 (just below Fig. 2.5-4)	$Q_{T'} \neq \frac{\omega_O C}{\left(\frac{M}{L_1}\right) G}$	$Q_{T'} = \frac{\omega_O C}{\left(\frac{M}{L_1}\right)^2 G}$
Page 50 (4 lines below Fig. 2.5-4)	$Q_{T'} \neq \frac{\omega_0 C}{k^2 G / a^2}$	$Q_{T'} = \frac{\omega_0 C}{k^4 G / a^2}$
Page 105 (3 lines below Eq. 4.5-2)	$g_m \neq \frac{v(t)}{i(t)}$	$g_m = \frac{i(t)}{v(t)} = \frac{qI_{dc}}{kT}$
Page 208 (Imaginary part of A_L)	$\text{Im } A_L(j\omega_0) \neq \frac{A_{\min} \omega_1 \omega_0 (\omega_1 \omega_2 - \omega_0^2)}{\omega_0^2 (\omega_1 + \omega_2)^2 + (\omega_1 \omega_2 - \omega_0^2)}$	$\text{Im } A_L(j\omega_0) = \frac{A_{\min} \omega_1 \omega_0 (\omega_1 \omega_2 - \omega_0^2)}{\omega_0^2 (\omega_1 + \omega_2)^2 + (\omega_1 \omega_2 - \omega_0^2)^2}$

Page 454 (Triangular pulse)	$I_n \neq \frac{I_p \tau}{T} \frac{\sin(n\pi\tau/2T)^2}{n\pi\tau/2T}$	$I_n = \frac{I_p \tau}{T} \frac{\sin^2(n\pi\tau/2T)}{(n\pi\tau/2T)^2}$
Page 595 (Between Eqs. 12.4-7 and 12.4-8)	$\lvert Z_{11}(j\omega_0)\rvert' \neq \pm \frac{2R}{3\sqrt{3}\alpha}$ $\lvert Z_{11}(j\omega_0)\rvert''' \neq \mp \frac{6R}{\alpha^3\sqrt{3}} \left(\frac{2}{3}\right)^2$	$\lvert Z_{11}(j\omega_0)\rvert' = \mp \frac{2R}{3\sqrt{3}\alpha}$ $\lvert Z_{11}(j\omega_0)\rvert''' = \pm \frac{6R}{\alpha^3\sqrt{3}} \left(\frac{2}{3}\right)^2$
Page 595 (Eq. 12.4-8)	The second term in brackets has a (+) sign only	This term should be $\mp \frac{\sqrt{2}}{3} \frac{\Delta\omega f(t)}{\alpha}$
	The third term in brackets has a (±) sign and the book forgot to divide by 3!=6	This term should be $\mp \frac{2\sqrt{2}}{6} \left(\frac{2}{3}\right)^2 \left[\frac{\Delta\omega f(t)}{\alpha}\right]^3$
Page 595 (Just after Eq. 12.4-8)	The values for $2\Delta\omega/3\alpha$ and BW are incorrect in the following phrase: Now, if $2\Delta\omega/3\alpha \leq 0.04$ or, equivalently, $\text{BW} \geq 100\Delta\omega/3$ ...	The phrase should be: Now, if $2\Delta\omega/3\alpha \leq 0.1$ or, equivalently, $\text{BW} \geq 40\Delta\omega/3$ ...
Page 596 (First line)	$\text{BW} \neq 100\Delta\omega/3$	$\text{BW} = 40\Delta\omega/3$
Page 596 (Eq. 12.4-9)	$v_o(t) \neq I_1 R \sqrt{\frac{2}{3}} \left[1 \pm \frac{f(t)}{25\sqrt{2}}\right]$	$v_o(t) = I_1 R \sqrt{\frac{2}{3}} \left[1 \mp \frac{f(t)}{10\sqrt{2}}\right]$
Page 596 (After Eq. 12.4-9)	The values of $(\Delta\omega/\alpha)^2$ and β are incorrect in the following phrase: For the circuit just considered, $(\Delta\omega/\alpha)^2 = 0.0036$, hence, for any value of β greater than 0.36 ...	The phrase should be: For the circuit just considered, $(\Delta\omega/\alpha)^2 = 0.0225$, hence, for any value of β greater than 2.25 ...
Page 596 (Example)	$BW \neq 2\pi(1.5 \text{ MHz})$ $\omega_c \neq 2\pi(11.23 \text{ MHz})$ $Q_T \neq 7.5$ $C \neq 6.7$ pF $L \neq 12$ μH $v_o(t) \neq (8.15\text{V}) + (0.23\text{V}) f(t)$	$BW = 2\pi(1.0 \text{ MHz})$ $\omega_c = 2\pi(11.05 \text{ MHz})$ $Q_T = 11$ $C = 15.9$ pF $L = 13$ μH $v_o(t) = (8.16\text{V}) \mp (0.58\text{V}) f(t)$
Page 645 (Problem 2.7)	Bandwidth ≠ 242 kHz	Bandwidth = 477 kHz
Page 645 (Problem 3.6)	$V_{o22} \neq \frac{200 I_2}{\sqrt{5}}$	$V_{o22} = \frac{200 I_2}{300\sqrt{5}}$
Page 646 (Problem 6.1)	$C \neq 1370$ pF	$C = 459$ pF